United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with
United States
Department of the
Interior, Bureau of
Indian Affairs; and
Montana Agricultural
Experiment Station

Soil Survey of Lake County Area, Montana Part II

How To Use This Soil Survey

This survey is divided into three parts. Part I includes general information about the survey area; detailed soil map units and soil series in the area; and a description of how the soils formed. Part II describes the use and management of the soils and the major soil properties. This part may be updated as further information about soil management becomes available. Part III includes the maps.

The **detailed soil maps** follow the general information about the survey area. These maps can be useful in planning the use and management of small areas.

To find information about your area of interest, locate that area on the **Index to Map Sheets**, which precedes the soil maps. Note the number of the map sheet, and turn to that sheet.

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Index to Map Units** in Part I of this survey, which lists the map units by symbol and name and shows the page where each map unit is described.

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

A **State Soil Geographic Data Base (STATSGO)** is available for this survey area. This data base consists of a soils map at a scale of 1 to 250,000 and descriptions of groups of associated soils. It replaces the general soil map published in older soil surveys. The map and the data base can be used for multicounty planning, and map output can be tailored for a specific use. More information about the State Soil Geographic Data Base for this survey area, or any portion of Montana, is available at the local office of the Natural Resources Conservation Service.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service has leadership for the Federal part of the National Cooperative Soil Survey.

Major fieldwork for this soil survey was completed in 1985. Soil names and descriptions were approved in 1990. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1985. This survey was made cooperatively by the Natural Resources Conservation Service; the United States Department of the Interior, Bureau of Indian Affairs; and the Montana Agricultural Experiment Station.. It is part of the technical assistance furnished to the Lake County Conservation District. Financial assistance was furnished by the Board of county Commissioners, Lake County, and the Bureau of Indian Affairs.

Soil maps in this survey may be copied without permission. Enlargement of these maps, however, could cause misunderstanding of the detail of mapping. If enlarged, maps do not show the small areas of contrasting soils that could have been shown at a larger scale.

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4--Bata gravelly silt loam, 30 to 60 percent slopes
5--Belton silt loam, 0 to 2 percent slopes
6--Belton silt loam, 8 to 15 percent slopes
7--Belton silt loam, 15 to 35 percent slopes
8--Belton-Kerl silt loams, 2 to 4 percent slopes
9--Belton-Kerl silt loams, 4 to 8 percent slopes
10--Bigarm cobbly loam, 15 to 30 percent slopes
11--Bigarm cobbly loam, cool, 15 to 30 percent slopes
12--Bigarm gravelly loam, 8 to 15 percent slopes
13--Bigarm, cool-Hogsby-Rock outcrop complex, 30 to 60 percent slopes
14--Bigarm, cool-Rubble land complex, 30 to 60 percent slopes
15--Bigarm-Hogsby-Rock outcrop complex, 30 to 60 percent slopes
16--Bigarm-Rock outcrop-Rubble land complex, 30 to 60 percent slopes
17--Bohnly silt loam, 0 to 2 percent slopes
18--Bolack silt loam, 0 to 2 percent slopes
19--Borohemists, 0 to 1 percent slopes
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54--Finleypoint gravelly loam, dry, 15 to 30 percent slopes

55--Finleypoint very gravelly loam, dry, 30 to 60 percent slopes
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58--Flott gravelly loam, 8 to 15 percent slopes
59--Flott gravelly loam, 15 to 30 percent slopes
60--Flott gravelly loam, 30 to 60 percent slopes
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97--Lonepine-Vincom silt loams, 4 to 8 percent slopes
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99--Marklepass silty clay loam, 0 to 2 percent slopes
100--Marklepass-Slickspots complex, 0 to 2 percent slopes
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102--McCollum fine sandy loam, 2 to 4 percent slopes
103--McCollum fine sandy loam, 4 to 8 percent slopes
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106--McDonald cobbly silty clay loam, 4 to 8 percent slopes

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143--Ronan silty clay loam, 4 to 8 percent slopes
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145--Round Butte silty clay loam, 2 to 4 percent slopes
146--Round Butte silty clay loam, 4 to 8 percent slopes
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158--Selon fine sandy loam, 4 to 8 percent slopes
159--Selon sandy loam, 8 to 15 percent slopes
160--Selow silty clay loam, 0 to 2 percent slopes
161--Selow silty clay loam, 2 to 4 percent slopes
162--Tevis very gravelly loam, 30 to 60 percent slopes
163--Trapps gravelly loam, 8 to 15 percent slopes
164--Trapps gravelly loam, 15 to 30 percent slopes
165--Truscreek silt loam, 0 to 2 percent slopes
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167--Truscreek-Polson silt loams, 2 to 4 percent slopes
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169--Typic Haplaquepts, 0 to 2 percent slopes
170--Vincom silt loam, 15 to 60 percent slopes
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Soil Survey of
Lake County Area, Montana

This soil survey is an inventory and evaluation of the soils in the survey area. It can be used to adjust land uses to the limitations and potentials of natural resources and the environment. Also, it can help to prevent soil-related failures in land uses.

In preparing a soil survey, soil scientists, conservationists, engineers, and others collect extensive field data about the nature and behavioral characteristics of the soils. They collect data on erosion, droughtiness, flooding, and other factors that affect various soil uses and management. Field experience and collected data on soil properties and performance are used as a basis in predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as rangeland and woodland; as sites for buildings, sanitary facilities, highways and other transportation systems, and parks and other recreational facilities; and for wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

Interpretative ratings help engineers, planners, and others understand how soil properties influence important nonagricultural uses, such as building site development and construction materials. The ratings indicate the most restrictive soil features affecting the suitability of the soils for these uses.

Soils are rated in their natural state. No unusual modification of the soil site or material is made other than that which is considered normal practice for the rated use. Even though soils may have limitations, it is important to remember that engineers and others can modify soil features or can design or adjust the plans for a structure to compensate for most of the limitations. Most of these practices, however, are costly. The final decision in selecting a site for a particular use generally involves weighing the costs of site preparation and maintenance.

Planners and others using soil survey information can evaluate the effect of specific land uses on productivity and on the environment in all or part of the survey area. The survey can help planners to maintain or create a land use pattern in harmony with the natural soil.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where bedrock, wetness, or very firm soil layers can cause difficulty in excavation.

Health officials, highway officials, engineers, and others may also find this survey useful. The survey can help them plan the safe disposal of wastes and locate sites for pavements, sidewalks, campgrounds, playgrounds, lawns, and trees and shrubs.

The classification and extent of the soils in this survey area are shown in the tables "Classification of the Soils" and "Acreage and Proportionate Extent of the Soils," which are at the end of this section.

CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Aeric Haplaquepts	Aeric Haplaquepts
Bata	Loamy-skeletal, mixed Andic Cryoboralfs
Belton	Fine, illitic, frigid Typic Natrixerolls
Bigarm	Loamy-skeletal, mixed, frigid Typic Haploxerolls
Bohnly	Fine-silty, mixed, frigid Typic Haplaquolls
Bolack	Fine, mixed, frigid Typic Haplaquolls
Borohemists	Borohemists
Bowlake	Fine, illitic, frigid Calcic Argixerolls
Colake	Fine-silty, frigid Typic Calciaquolls
Connah	Fine, illitic, frigid Typic Haploxeralfs
Courville	Loamy-skeletal, mixed, frigid Andic Eutrochrepts
Craddock	Coarse-loamy, mixed Andic Cryochrepts
Doker	Ashy over loamy, mixed frigid Typic Vitraquands
Dryfork	Coarse-silty, mixed, frigid Calcixerollic Xerochrepts
Dubay	Coarse-silty, mixed, frigid Typic Xerochrepts
Eaglewing	Fine-loamy, mixed, frigid Typic Ustochrepts
Esteslake	Fine, illitic, frigid Typic Natrixeralfs
Felan	Loamy-skeletal, mixed Andic Cryoboralfs
Finleypoint	Loamy-skeletal, mixed Udic Haploborolls
Flott	Loamy-skeletal, mixed Udic Haploborolls
Gardencreek	Fine, mixed, nonacid, frigid Aquic Xerofluvents
Gird	Coarse-silty, mixed, frigid Calcic Haploxerolls
Glaciercreek	Sandy-skeletal, mixed, frigid Andic Eutrochrepts
Half Moon	Fine-silty, mixed Glossic Eutroboralfs
*Hogsby	Loamy-skeletal, mixed, frigid Lithic Haploxerolls
Holloway	Loamy-skeletal, mixed Andic Cryochrepts
Irvine	Fine, illitic (calcareous), frigid Typic Xerorthents
Jocko	Sandy-skeletal, mixed, frigid Calcic Haploxerolls
Kerl	Fine-loamy, mixed, frigid Calcic Haploxerolls
Kerrdam	Coarse-silty, mixed, frigid Calcixerollic Xerochrepts
Kingspoint	Loamy-skeletal, mixed, frigid Typic Ustochrepts
Lamoose	Fine-loamy over sandy or sandy-skeletal, mixed (calcareous), frigid Typic Haplaquolls
Lonepine	Fine-silty, mixed, frigid Calcixerollic Xerochrepts
Marklepass	Fine, mixed, frigid Typic Natrixeralfs
McCollum	Coarse-loamy, mixed, frigid Typic Haploxerolls
McDonald	Fine, illitic Boralfic Argixerolls
Minesinger	Clayey-skeletal, mixed, frigid Typic Argixerolls
Mitten	Loamy-skeletal, mixed, frigid Andic Eutrochrepts
Moiese	Sandy-skeletal, mixed, frigid Calcic Haploxerolls
Mollman	Loamy-skeletal, mixed, frigid Typic Eutrochrepts
Niarada	Loamy-skeletal, mixed, frigid Calcic Haploxerolls
Ninepipe	Fine-silty, mixed, frigid Pachic Haploxerolls
Phillcher	Loamy-skeletal, mixed Andic Cryochrepts
Polson	Fine-silty, mixed, frigid Typic Natrixerolls
Post	Very-fine, illitic, frigid Typic Natrixerolls
Repp	Loamy-skeletal, mixed, frigid Typic Ustochrepts
Ronan	Very-fine, illitic, frigid Typic Natrixeralfs
Round Butte	Fine, mixed, frigid Typic Natrixeralfs
Rumblecreek	Loamy-skeletal, mixed Glossic Eutroboralfs
Sacheen	Mixed, frigid Typic Xeropsamments
Selon	Coarse-loamy, mixed, frigid Typic Xerochrepts
Selow	Fine-silty, illitic, frigid Typic Natrixeralfs
Sharrott	Loamy-skeletal, mixed, frigid Lithic Ustochrepts
Tevis	Loamy-skeletal, mixed, frigid Dystric Eutrochrepts
Trapps	Loamy-skeletal, mixed Typic Eutroboralfs
Truscreek	Fine-silty, mixed, frigid Calcic Haploxerolls
Typic Haplaquepts	Typic Haplaquepts
Vincom	Fine-silty, mixed (calcareous), frigid Typic Xerorthents
Waldbillig	Loamy-skeletal, mixed Andic Cryochrepts
Walstead	Loamy-skeletal, mixed Udic Haploborolls
Whitearth	Fine-silty, mixed, frigid Typic Natrixeralfs
Wildgen	Loamy-skeletal, mixed, frigid Typic Ustochrepts
Winfall	Loamy-skeletal, mixed, frigid Dystric Eutrochrepts
Winkler	Loamy-skeletal, mixed, frigid Typic Ustochrepts
Xerofluvents	Xerofluvents
Yellowbay	Sandy-skeletal, mixed, frigid Typic Xerochrepts

* An asterisk in the first column indicates the series is a taxadjunct. This applies to map unit 71 only, and does not affect use and management.

ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Lake County	Flathead County	Total	
				Area	Extent
		Acres	Acres	Acres	Pct
1	Aeric Haplaquepts, 1 to 3 percent slopes	2,120	0	2,120	0.3
2	Badland	509	0	509	0.1
3	Bata gravelly silt loam, 8 to 30 percent slopes	117	0	117	*
4	Bata gravelly silt loam, 30 to 60 percent slopes	748	0	748	0.1
5	Belton silt loam, 0 to 2 percent slopes	1,962	0	1,962	0.3
6	Belton silt loam, 8 to 15 percent slopes	4,270	0	4,270	0.6
7	Belton silt loam, 15 to 35 percent slopes	415	0	415	0.1
8	Belton-Kerl silt loams, 2 to 4 percent slopes	6,024	0	6,024	0.8
9	Belton-Kerl silt loams, 4 to 8 percent slopes	5,227	0	5,227	0.7
10	Bigarm cobbly loam, 15 to 30 percent slopes	6,229	0	6,229	0.9
11	Bigarm cobbly loam, cool, 15 to 30 percent slopes	5,282	0	5,282	0.7
12	Bigarm gravelly loam, 8 to 15 percent slopes	2,587	0	2,587	0.4
13	Bigarm, cool-Hogsby-Rock outcrop complex, 30 to 60 percent slopes	18,481	0	18,481	2.5
14	Bigarm, cool-Rubble land complex, 30 to 60 percent slopes	1,690	0	1,690	0.2
15	Bigarm-Hogsby-Rock outcrop complex, 30 to 60 percent slopes	22,105	0	22,105	3.0
16	Bigarm-Rock outcrop-Rubble land complex, 30 to 60 percent slopes	4,287	0	4,287	0.6
17	Bohnly silt loam, 0 to 2 percent slopes	3,235	0	3,235	0.4
18	Bolack silt loam, 0 to 2 percent slopes	1,632	0	1,632	0.2
19	Borohemists, 0 to 1 percent slopes	2,784	15	2,799	0.4
20	Bowlake gravelly loam, 4 to 8 percent slopes	3,695	0	3,695	0.5
21	Bowlake-Minesinger gravelly loams, 8 to 15 percent slopes	6,459	0	6,459	0.9
22	Colake silt loam, 0 to 1 percent slopes	1,521	0	1,521	0.2
23	Colake silt loam, drained, 0 to 1 percent slopes	1,709	0	1,709	0.2
24	Colake-Sacheen complex, 0 to 3 percent slopes	259	0	259	*
25	Connah cobbly silt loam, 4 to 8 percent slopes	1,688	0	1,688	0.2
26	Connah silt loam, 0 to 2 percent slopes	1,088	0	1,088	0.1
27	Connah-Water complex, 2 to 4 percent slopes	4,224	0	4,224	0.6
28	Courville gravelly silt loam, 4 to 15 percent slopes	1,831	200	2,031	0.3
29	Courville gravelly silt loam, 15 to 30 percent slopes	8,344	57	8,401	1.1
30	Courville gravelly silt loam, 30 to 60 percent slopes	4,996	361	5,357	0.7
31	Courville gravelly silt loam, warm, 4 to 15 percent slopes	404	0	404	0.1
32	Courville gravelly silt loam, warm, 15 to 30 percent slopes	3,559	0	3,559	0.5
33	Courville gravelly silt loam, warm, 30 to 60 percent slopes	2,574	0	2,574	0.4
34	Courville-Rumblecreek complex, 8 to 30 percent slopes	739	0	739	0.1
35	Craddock channery silt loam, 30 to 60 percent slopes	323	0	323	*
36	Craddock silt loam, 4 to 15 percent slopes	1,932	0	1,932	0.3
37	Craddock silt loam, 15 to 30 percent slopes	5,490	0	5,490	0.8
38	Doker silt loam, 0 to 2 percent slopes	630	0	630	0.1
39	Dryfork silt loam, 0 to 4 percent slopes	1,009	0	1,009	0.1
40	Dryfork-Selow complex, 0 to 4 percent slopes	393	0	393	0.1
41	Dryfork-Selow complex, 4 to 15 percent slopes	141	0	141	*
42	Dubay silt loam, 0 to 2 percent slopes	479	0	479	0.1
43	Dubay silt loam, 2 to 6 percent slopes	859	0	859	0.1
44	Eaglewing gravelly silt loam, 8 to 15 percent slopes	999	27	1,026	0.1
45	Eaglewing gravelly silt loam, 15 to 30 percent slopes	1,651	0	1,651	0.2
46	Eaglewing silt loam, 2 to 8 percent slopes	2,886	66	2,952	0.4
47	Esteslake-Slickspots complex, 0 to 4 percent slopes	3,041	0	3,041	0.4
48	Felan gravelly silt loam, 15 to 30 percent slopes	296	0	296	*
49	Felan gravelly silt loam, 30 to 60 percent slopes	7,624	0	7,624	1.0
50	Finleypoint cobbly loam, 2 to 8 percent slopes	3,362	0	3,362	0.5
51	Finleypoint cobbly loam, 8 to 15 percent slopes	3,356	0	3,356	0.5
52	Finleypoint gravelly loam, 15 to 30 percent slopes	5,663	0	5,663	0.8
53	Finleypoint gravelly loam, 30 to 60 percent slopes	8,893	0	8,893	1.2
54	Finleypoint gravelly loam, dry, 15 to 30 percent slopes	1,024	0	1,024	0.1
55	Finleypoint very gravelly loam, dry, 30 to 60 percent slopes	8,339	0	8,339	1.1
56	Finleypoint-Wildgen gravelly loams, 30 to 60 percent slopes	1,721	0	1,721	0.2
57	Flott gravelly loam, 2 to 8 percent slopes	2,064	0	2,064	0.3
58	Flott gravelly loam, 8 to 15 percent slopes	1,386	0	1,386	0.2
59	Flott gravelly loam, 15 to 30 percent slopes	2,920	0	2,920	0.4
60	Flott gravelly loam, 30 to 60 percent slopes	4,111	0	4,111	0.6
61	Flott very gravelly loam, dry, 30 to 60 percent slopes	2,148	0	2,148	0.3
62	Gardencreek silty clay loam, 0 to 2 percent slopes	430	0	430	0.1
63	Gird silt loam, 0 to 2 percent slopes	1,926	0	1,926	0.3

* See footnote at end of table.

Map symbol	Soil name	Lake County	Flathead County	Total Area	Total Extent
		Acres	Acres	Acres	Pct
64	Gird silt loam, 2 to 4 percent slopes	2,732	0	2,732	0.4
65	Gird-Dryfork silt loams, moderately wet, 0 to 1 percent slopes	963	0	963	0.1
66	Gird-Vincom silt loams, 4 to 8 percent slopes	2,401	0	2,401	0.3
67	Gird-Vincom silt loams, 8 to 15 percent slopes	2,568	0	2,568	0.4
68	Glaciercreek gravelly silt loam, 2 to 4 percent slopes	2,659	0	2,659	0.4
69	Half Moon silt loam, 2 to 4 percent slopes	1,535	87	1,622	0.2
70	Half Moon-Courville complex, 4 to 15 percent slopes	543	26	569	0.1
71	Hogsby-Finleypoint gravelly loams, 30 to 60 percent slopes	2,553	0	2,553	0.3
72	Hogsby-Rock outcrop complex, 15 to 45 percent slopes	9,969	0	9,969	1.4
73	Holloway gravelly silt loam, 15 to 30 percent slopes	1,463	0	1,463	0.2
74	Holloway gravelly silt loam, 30 to 60 percent slopes	10,097	0	10,097	1.4
75	Holloway gravelly silt loam, cool, 15 to 30 percent slopes	973	0	973	0.1
76	Holloway gravelly silt loam, cool, 30 to 60 percent slopes	2,580	0	2,580	0.4
77	Holloway, dry-Rock outcrop complex, 15 to 30 percent slopes	883	0	883	0.1
78	Holloway-Rubble land complex, 45 to 75 percent slopes	1,018	0	1,018	0.1
79	Irvine silty clay, 8 to 15 percent slopes	7,378	0	7,378	1.0
80	Irvine silty clay, 15 to 60 percent slopes	7,803	0	7,803	1.1
81	Jocko gravelly loam, 0 to 4 percent slopes	13,268	0	13,268	1.8
82	Jocko gravelly loam, 4 to 15 percent slopes	1,529	0	1,529	0.2
83	Jocko very stony sandy loam, 0 to 8 percent slopes	1,139	0	1,139	0.2
84	Kerl loam, 2 to 4 percent slopes	2,609	0	2,609	0.4
85	Kerl loam, 4 to 8 percent slopes	3,308	0	3,308	0.5
86	Kerrdam silt loam, 0 to 2 percent slopes	987	0	987	0.1
87	Kerrdam silt loam, 2 to 6 percent slopes	547	0	547	0.1
88	Kerrdam-Vincom silt loams, 6 to 15 percent slopes	825	0	825	0.1
89	Kerrdam-Vincom silt loams, 15 to 30 percent slopes	1,705	0	1,705	0.2
90	Kingspoint gravelly loam, 4 to 15 percent slopes	3,877	0	3,877	0.5
91	Kingspoint very gravelly loam, 15 to 30 percent slopes	3,322	0	3,322	0.5
92	Kingspoint very gravelly loam, 30 to 60 percent slopes	4,533	0	4,533	0.6
93	Lamoose loam, 0 to 2 percent slopes	2,994	0	2,994	0.4
94	Lonepine silt loam, 0 to 2 percent slopes	924	0	924	0.1
95	Lonepine silt loam, 2 to 4 percent slopes	3,360	0	3,360	0.5
96	Lonepine silt loam, dry, 2 to 8 percent slopes	33	0	33	*
97	Lonepine-Vincom silt loams, 4 to 8 percent slopes	2,161	0	2,161	0.3
98	Lonepine-Vincom silt loams, dry, 4 to 15 percent slopes	51	0	51	*
99	Marklepass silty clay loam, 0 to 2 percent slopes	609	0	609	0.1
100	Marklepass-Slickspots complex, 0 to 2 percent slopes	518	0	518	0.1
101	McCollum fine sandy loam, 0 to 2 percent slopes	2,061	0	2,061	0.3
102	McCollum fine sandy loam, 2 to 4 percent slopes	4,698	0	4,698	0.6
103	McCollum fine sandy loam, 4 to 8 percent slopes	2,230	0	2,230	0.3
104	McCollum fine sandy loam, gravelly substratum, 0 to 2 percent slopes	1,732	0	1,732	0.2
105	McDonald cobbly silty clay loam, 2 to 4 percent slopes	6,925	0	6,925	0.9
106	McDonald cobbly silty clay loam, 4 to 8 percent slopes	4,111	0	4,111	0.6
107	McDonald cobbly silty clay loam, 8 to 15 percent slopes	1,923	0	1,923	0.3
108	McDonald silty clay loam, 0 to 2 percent slopes	563	0	563	0.1
109	Minesinger stony loam, 4 to 15 percent slopes	3,500	0	3,500	0.5
110	Minesinger-Walstead very stony loams, 15 to 45 percent slopes	4,682	0	4,682	0.6
111	Mitten gravelly silt loam, 8 to 30 percent slopes	1,627	0	1,627	0.2
112	Mitten very gravelly silt loam, 30 to 60 percent slopes	9,450	325	9,775	1.3
113	Mitten very gravelly silt loam, dry, 30 to 60 percent slopes	8,312	0	8,312	1.1
114	Mitten, dry-Rock outcrop complex, 30 to 60 percent slopes	1,812	0	1,812	0.2
115	Moiese loam, 0 to 2 percent slopes	3,784	0	3,784	0.5
116	Mollman gravelly loam, 0 to 4 percent slopes	352	0	352	*
117	Mollman gravelly loam, 4 to 15 percent slopes	1,340	88	1,428	0.2
118	Mollman gravelly loam, 15 to 30 percent slopes	1,625	28	1,653	0.2
119	Mollman very gravelly loam, 30 to 60 percent slopes	6,800	0	6,800	0.9
120	Niarada gravelly loam, 0 to 4 percent slopes	2,025	0	2,025	0.3
121	Niarada gravelly loam, 4 to 8 percent slopes	2,116	0	2,116	0.3
122	Niarada gravelly loam, 8 to 15 percent slopes	2,586	0	2,586	0.4
123	Niarada gravelly loam, cool, 15 to 30 percent slopes	12,366	0	12,366	1.7
124	Niarada gravelly loam, cool, 30 to 60 percent slopes	3,362	0	3,362	0.5
125	Niarada-Kerl complex, 8 to 15 percent slopes	6,248	0	6,248	0.9
126	Ninepipe silt loam, 0 to 2 percent slopes	2,551	0	2,551	0.3

* See footnote at end of table.

ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Lake County	Flathead County	Total	
				Area	Extent
		Acres	Acres	Acres	Pct
127	Phillcher gravelly silt loam, 15 to 45 percent slopes	476	0	476	0.1
128	Phillcher-Rock outcrop complex, 45 to 75 percent slopes	928	0	928	0.1
129	Pits, gravel	528	0	528	0.1
130	Polson silt loam, 0 to 2 percent slopes	4,311	0	4,311	0.6
131	Polson silt loam, 2 to 4 percent slopes	4,895	0	4,895	0.7
132	Polson-Vincom silt loams, 4 to 8 percent slopes	2,383	0	2,383	0.3
133	Post silt loam, 0 to 2 percent slopes	15,432	0	15,432	2.1
134	Post silty clay loam, 2 to 4 percent slopes	12,458	0	12,458	1.7
135	Post silty clay loam, 4 to 8 percent slopes	3,907	0	3,907	0.5
136	Post-Ronan-Water complex, 2 to 8 percent slopes	6,783	0	6,783	0.9
137	Post-Ronan-Water complex, 8 to 15 percent slopes	1,876	0	1,876	0.3
138	Repp gravelly loam, 30 to 60 percent slopes	2,439	0	2,439	0.3
139	Repp, cool-Rock outcrop complex, 30 to 60 percent slopes	8,042	0	8,042	1.1
140	Rock outcrop-Rubble land complex	1,575	63	1,638	0.2
141	Ronan silty clay loam, 0 to 2 percent slopes	2,435	0	2,435	0.3
142	Ronan silty clay loam, 2 to 4 percent slopes	7,118	0	7,118	1.0
143	Ronan silty clay loam, 4 to 8 percent slopes	3,252	0	3,252	0.4
144	Round Butte silty clay loam, 0 to 2 percent slopes	7,700	0	7,700	1.1
145	Round Butte silty clay loam, 2 to 4 percent slopes	12,332	0	12,332	1.7
146	Round Butte silty clay loam, 4 to 8 percent slopes	7,776	0	7,776	1.1
147	Round Butte silty clay loam, dry, 0 to 2 percent slopes	78	0	78	*
148	Round Butte-Irvine silty clay loams, 2 to 8 percent slopes	824	0	824	0.1
149	Round Butte-Irvine silty clay loams, dry, 4 to 15 percent slopes	539	0	539	0.1
150	Rumblecreek gravelly loam, 2 to 8 percent slopes	673	0	673	0.1
151	Rumblecreek gravelly loam, 8 to 15 percent slopes	2,125	0	2,125	0.3
152	Rumblecreek gravelly loam, 15 to 30 percent slopes	4,146	6	4,152	0.6
153	Rumblecreek gravelly loam, 30 to 60 percent slopes	3,334	139	3,473	0.5
154	Sacheen fine sand, hummocky, 3 to 10 percent slopes	521	0	521	0.1
155	Sacheen loamy fine sand, 0 to 8 percent slopes	6,671	0	6,671	0.9
156	Selon fine sandy loam, 0 to 2 percent slopes	902	0	902	0.1
157	Selon fine sandy loam, 2 to 4 percent slopes	1,127	0	1,127	0.2
158	Selon fine sandy loam, 4 to 8 percent slopes	477	0	477	0.1
159	Selon sandy loam, 8 to 15 percent slopes	1,194	0	1,194	0.2
160	Selow silty clay loam, 0 to 2 percent slopes	591	0	591	0.1
161	Selow silty clay loam, 2 to 4 percent slopes	787	0	787	0.1
162	Tevis very gravelly loam, 30 to 60 percent slopes	4,233	121	4,354	0.6
163	Trapps gravelly loam, 8 to 15 percent slopes	290	0	290	*
164	Trapps gravelly loam, 15 to 30 percent slopes	1,838	0	1,838	0.3
165	Truscreek silt loam, 0 to 2 percent slopes	1,786	0	1,786	0.2
166	Truscreek-Polson silt loams, 0 to 2 percent slopes	3,009	0	3,009	0.4
167	Truscreek-Polson silt loams, 2 to 4 percent slopes	3,533	0	3,533	0.5
168	Truscreek-Polson silt loams, 4 to 8 percent slopes	2,570	0	2,570	0.4
169	Typic Haplaquepts, 0 to 2 percent slopes	787	0	787	0.1
170	Vincom silt loam, 15 to 60 percent slopes	5,472	0	5,472	0.7
171	Vincom-Lonepine silt loams, 8 to 15 percent slopes	3,608	0	3,608	0.5
172	Waldbillig gravelly silt loam, 15 to 30 percent slopes	925	0	925	0.1
173	Waldbillig gravelly silt loam, 30 to 60 percent slopes	549	0	549	0.1
174	Walstead gravelly loam, 0 to 2 percent slopes	1,578	0	1,578	0.2
175	Walstead gravelly loam, 2 to 4 percent slopes	2,295	0	2,295	0.3
176	Walstead gravelly loam, 4 to 15 percent slopes	3,792	0	3,792	0.5
177	Walstead-Rock outcrop complex, 15 to 30 percent slopes	1,849	0	1,849	0.3
178	Whitearth-Esteslake complex, 2 to 8 percent slopes	397	0	397	0.1
179	Wildgen gravelly loam, 8 to 30 percent slopes	6,114	427	6,541	0.9
180	Wildgen very gravelly loam, 30 to 60 percent slopes	8,197	24	8,221	1.1
181	Wildgen-Finleypoint gravelly loams, 15 to 30 percent slopes	2,923	0	2,923	0.4
182	Winfall very gravelly loam, 4 to 15 percent slopes	1,353	121	1,474	0.2
183	Winfall very gravelly loam, 15 to 30 percent slopes	3,397	72	3,469	0.5
184	Winfall very gravelly loam, 30 to 60 percent slopes	1,757	0	1,757	0.2
185	Winkler, cool-Rock outcrop complex, 30 to 60 percent slopes	1,573	351	1,924	0.3
186	Winkler very gravelly loam, cool, 30 to 60 percent slopes	14,659	679	15,338	2.1
187	Winkler-Sharrott-Rock outcrop complex, 30 to 60 percent slopes	2,850	0	2,850	0.4
188	Xerofluvents, 0 to 2 percent slopes	3,946	29	3,975	0.5

* See footnote at end of table.

ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Lake County	Flathead County	Total	
				Area	Extent
		Acres	Acres	Acres	Pct
189	Xerofluvents, dry, 0 to 2 percent slopes	188	0	188	*
190	Yellowbay very gravelly loam, 0 to 4 percent slopes	1,268	15	1,283	0.2
191	Yellowbay very gravelly loam, 4 to 15 percent slopes	408	23	431	0.1
192	Yellowbay very gravelly loam, 15 to 30 percent slopes	883	0	883	0.1
M-W	Miscellaneous water	30	0	30	*
W	Water	96,350	20	96,370	13.2
	Total	728,130	3,370	731,500	100.0

* Less than 0.05 percent.

Agronomy

General management needed for crops and for hay and pasture is suggested in this section. The system of land capability classification used by the Natural Resources Conservation Service is explained, and the estimated yields of the main crops and hay and pasture plants are listed for each soil.

Planners of management systems for individual fields or farms should consider obtaining specific information from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Cropland Limitations and Hazards

The management concerns affecting the use of the detailed soil map units in the survey area for crops are shown in the table "Main Cropland Limitations and Hazards." The main concerns in managing nonirrigated cropland are conserving moisture, controlling soil blowing and water erosion, and maintaining soil fertility.

Conserving moisture consists primarily of reducing the evaporation and runoff rates and increasing the water infiltration rate. Applying conservation tillage and conservation cropping systems, farming on the contour, stripcropping, establishing field windbreaks, and leaving crop residue on the surface conserve moisture.

Generally, a combination of several practices is needed to control *soil blowing* and *water erosion*. Conservation tillage, stripcropping, field windbreaks, tall grass barriers, contour farming, conservation cropping systems, crop residue management, diversions, and grassed waterways help to prevent excessive soil loss.

Measures that are effective in maintaining *soil fertility* include applying fertilizer, both organic and inorganic, including manure; incorporating crop residue or green manure crops into the soil; and using proper crop rotations. Controlling erosion helps to prevent the loss of organic matter and plant nutrients and thus helps to maintain productivity, although the level of fertility can be reduced even in areas where erosion is controlled. All soils used for nonirrigated crops respond well to applications of fertilizer.

Some of the limitations and hazards shown in the table cannot be easily overcome. These are *channels, flooding, depth to rock, ponding, gullies,* and *lack of timely precipitation*.

Additional limitations and hazards are as follows:

Areas of rock outcrop and slick spots.--Farming around these areas may be feasible. Subsoiling or deep ripping soft sedimentary beds increases the effective rooting depth and the rate of water infiltration.

Excessive permeability.--This limitation causes deep leaching of nutrients and pesticides. The capacity of the soil to retain moisture for plant use is poor.

Lime content, limited available water capacity, poor tilth, restricted permeability, and *surface crusting*.--These limitations can be overcome by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems. Also, crops may respond well to additions of phosphate fertilizer to soils that have a high content of lime.

Potential for ground-water pollution.--This is a hazard in soils with excessive permeability, hard bedrock, or a water table within the profile.

Short frost-free period.--If the growing season is less than 90 days, short-season crops or grasses should be grown.

Surface rock fragments.--This limitation causes rapid wear of tillage equipment. It cannot be easily overcome.

Slope.--Where the slope is more than 8 percent, water erosion and soil blowing may be accelerated unless conservation farming practices are applied.

Surface stones.--Stones or boulders on the surface can hinder normal tillage unless they are removed.

Salt and sodium content.--In areas where this is a limitation, only salt- and sodium-tolerant crops should be grown.

On irrigated soils the main management concerns are *efficient water use, nutrient management, control of erosion, pest and weed control,* and *timely planting and harvesting* for a successful crop. An irrigation system that provides optimum control and distribution of water at minimum cost is needed. Overirrigation wastes water, leaches plant nutrients, and causes erosion. Also, it can create drainage problems, raise the water table, and increase soil salinity.

Following is an explanation of the criteria used to determine the limitations or hazards.

Areas of rock outcrop.--Rock outcrop is a named component of the map unit.

Areas of rubble land.--Rubble land is a named component of the map unit.

Areas of slick spots.--Slick spots are a named component of the map unit.

Channeled.--The word "channeled" is included in the name of the map unit.

Depth to rock.--Bedrock is within a depth of 40 inches.

Excessive permeability.--The upper limit of the permeability range is 6 inches or more within the soil profile.

Flooding.--The component of the map unit is occasionally flooded or frequently flooded.

Gullied.--The word "gullied" is included in the name of the map unit.

Lack of timely precipitation.--The component of the map unit has a Xeric moisture regime. The amount of annual precipitation is no more than 14 inches.

Lime content.--The component is assigned to wind erodibility group 4L or has more than 5 percent lime in the upper 10 inches.

Limited available water capacity.--The available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 5 inches or less.

Ponding.--Ponding duration is assigned to the component of the map unit.

Potential for ground-water pollution.--The soil has a water table within a depth of 4 feet or hard bedrock within the profile, or permeability is more than 6 inches per hour within the soil.

Poor tilth.--The component of the map unit has more than 35 percent clay in the surface layer.

Restricted permeability.--Permeability is 0.06 inch per hour or less within the soil profile.

Salt content.--The component of the map unit has an electrical conductivity of more than 4 in the surface layer or more than 8 within a depth of 30 inches.

Short frost-free period.--The map unit has a growing season of less than 90 frost-free days.

Slope.--The upper slope range of the component of the map unit is more than 8 percent.

Sodium content.--The sodium adsorption ratio of the component of the map unit is more than 13 within a depth of 30 inches.

Soil blowing.--The wind erodibility index multiplied by the selected high C factor for the survey area and then divided by the T factor is more than 8 for the component of the map unit.

Surface rock fragments.--The terms describing the texture of the surface layer include any rock fragment modifier except for gravelly or channery, and "surface stones" is not already indicated as a limitation.

Surface crusting.--The sodium adsorption ratio in the surface layer is 5 or more for any texture and 4 or more if the texture is silt, silt loam, loam, or very fine sandy loam.

Surface stones.--The terms describing the texture of the surface layer include any stony or bouldery modifier, or the soil is a stony or bouldery phase.

Water erosion.--The surface K factor multiplied by the upper slope limit is more than 2 (same as prime farmland criteria).

Water table.--The component of the map unit has a water table within a depth of 60 inches.

Crop Yield Estimates

The average yields per acre that can be expected of the principal crops under a high level of management are shown in the table "Land Capability and Yields per Acre of Crops." In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of each map unit also is shown in the table.

The yields are based mainly on the experience and records of farmers, conservationists, and extension agents. Available yield data from nearby counties and results of field trials and demonstrations are also considered.

The management needed to obtain the indicated yields of the various crops depends on the kind of soil and the crop. Management can include drainage, erosion control, and protection from flooding; the proper planting and seeding rates; suitable high-yielding crop varieties; appropriate and timely tillage; control of weeds, plant diseases, and harmful insects; favorable soil reaction and optimum levels of nitrogen, phosphorus, potassium, and trace elements for each crop; effective use of crop residue, barnyard manure, and green manure crops; and harvesting

that ensures the smallest possible loss. Yields for dryland crops are based on a crop-fallow system.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the table are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Pasture and Hayland Interpretations

Under good management, proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Yield estimates are often indicated in animal unit months (AUM), or the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about forage yields other than those shown in the table "Land Capability and Yields per Acre of Crops."

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for rangeland, for woodland, or for engineering purposes.

In the capability system, as described in "Land Capability Classification" (18), soils generally are grouped at three levels--capability class, subclass, and unit. These levels indicate the degree and kinds of limitations affecting mechanized farming systems that produce the more commonly grown field crops, such as corn, small grain, cotton, hay, and field-grown vegetables. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use.

If properly managed, soils in classes 1, 2, 3, and 4 are suitable for the mechanized production of commonly grown field crops and for pasture and woodland. The degree of the soil limitations affecting the production of cultivated crops increases progressively from class 1 to class 5. The limitations can affect levels of production and the risk of permanent soil deterioration caused by erosion and other factors.

Soils in classes 5, 6, and 7 are generally not suited to the mechanized production of commonly grown field crops without special management, but they are suitable for plants that provide a permanent cover, such as grasses and trees. The severity of the soil limitations affecting crops increases progressively from class 5 to class 7. The local office of the Cooperative Extension Service or the Natural Resources Conservation Service can provide guidance on the use of these soils as cropland.

Areas in class 8 are generally not suitable for crops, pasture, or woodland without a level of management that is impractical. These areas may have potential for other uses, such as recreational facilities and wildlife habitat.

Capability subclasses indicate the dominant limitations in the class. They are designated by adding a letter, *E, W, S,* or *C*, to the class numeral, for example, 2E. The letter *E* shows that the main hazard is the risk of erosion unless a close-growing plant cover is maintained; *W* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *S* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *C*, used in only some parts of the United States, shows that the

chief limitation is climate that is very cold or very dry.

There are no subclasses in class 1 because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *W, S,* or *C* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use mainly to pasture, rangeland, woodland, wildlife habitat, or recreation.

The capability classification of each map unit is given in the table "Land Capability and Yields per Acre of Crops" at the end of this section.

Prime Farmland and Other Important Farmland

In this section, prime farmland and other important farmland are defined. The soils in the survey area that are considered prime farmland are listed in the table "Prime Farmland" at the end of this section.

Prime Farmland

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, feed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. An adequate moisture supply and a sufficiently long growing season are required. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils may presently be used as cropland, pasture, or woodland or for other purposes. They either are used for food and fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water-control structures. Public land is land not available for farming in National forests, National parks, military reservations, and State parks.

Prime farmland soils commonly receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable, and the level of acidity or alkalinity and the content of salts and sodium are acceptable. The soils have few, if any, rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods, and they are not frequently flooded during the growing season or are protected from flooding. Slopes range mainly from 0 to 6 percent.

Soils that have a high water table, are subject to flooding, or are droughty may qualify as prime farmland where these limitations are overcome by drainage measures, flood control, or irrigation. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information about the criteria for prime farmland can be obtained at the local office of the Natural Resources Conservation Service.

A recent trend in land use has been the conversion of prime farmland to urban and industrial uses. The loss of prime farmland to other uses puts pressure on lands that are less productive than prime farmland.

The map units in the survey area that meet the requirements for prime farmland are listed in the table "Prime Farmland." On some soils included in the table, measures that overcome limitations are needed. The need for these measures is indicated in parentheses after the map unit name. The location of each map unit is shown on the detailed soil maps at the back of this publication. The soil qualities that affect use and management are described in the section "Soil Series and Detailed Soil Map Units." This list does not constitute a recommendation for a particular land use.

Unique Farmland

Unique farmland is land other than prime farmland that is used for the production of specific high-value food and fiber crops. It has the special combination of soil qualities, location, growing season, and moisture supply needed for the economic production of sustained high yields of a specific high-quality crop when treated and managed by acceptable farming methods. Examples of such crops are citrus, tree nuts, olives, cranberries, and vegetables.

Unique farmland is used for a specific high-value food or fiber crop; has an adequate supply of available moisture for the specific crop because of stored moisture, precipitation, or irrigation; and has a combination of soil qualities, growing season, temperature, humidity, air drainage, elevation, aspect, and other factors, such as nearness to markets, that favors the production of a specific food or fiber crop.

Lists of unique farmland are developed as needed in cooperation with conservation districts and others.

Additional Farmland of Statewide Importance

Some areas other than areas of prime and unique farmland are of statewide importance in the production of food, feed, fiber, forage, and oilseed crops. The criteria used in defining and delineating these areas are determined by the appropriate State agency or agencies. Generally, additional farmland of statewide importance includes areas that nearly meet the criteria for prime farmland and that economically produce high yields of crops when treated and managed by acceptable farming methods. Some areas can produce as high a yield as areas of prime farmland if conditions are favorable. In some states additional farmland of statewide importance may include tracts of land that have been designated for agriculture by State law.

A list of this land has not been maintained for Montana and thus is not presently available.

Additional Farmland of Local Importance

This land consists of areas that are of local importance in the production of food, feed, fiber, forage, and oilseed crops and are not identified as having national or statewide importance. Where appropriate, this land is identified by local agencies. It may include tracts of land that have been designated for agriculture by local ordinance.

Lists of this land are developed as needed in cooperation with conservation districts and others.

Erosion Factors

Soil erodibility (K) and soil-loss tolerance (T) factors are used in an equation that predicts the amount of soil lost through water erosion in areas of cropland. The procedure for predicting soil loss is useful in guiding the selection of soil and water conservation practices.

Soil Erodibility (K) Factor

The soil erodibility factor (K) indicates the susceptibility of a soil to sheet and rill water erosion. The soil properties that influence erodibility are those that affect the infiltration rate, the movement of water through the soil, and the water storage capacity of the soil and those that allow the soil to resist dispersion, splashing, abrasion, and the transporting forces of rainfall and runoff. The most important soil properties are the content of silt plus very fine sand, the content of sand coarser than very fine sand, the content of organic matter, soil structure, and permeability.

Fragment-Free Soil Erodibility (Kf) Factor

This is one of the factors used in the revised Universal Soil Loss Equation. It shows the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Soil-Loss Tolerance (T) Factor

The soil-loss tolerance factor (T) is an estimate of the maximum annual rate of soil erosion that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons of soil loss per acre per year. Ratings of 1 to 5 are used, depending on soil properties and prior erosion. The criteria used in assigning a T factor to a soil include maintenance of an adequate rooting depth for crop production, potential reduction of crop yields, maintenance of water-control structures affected by sedimentation, prevention of gullying, and the value of nutrients lost through erosion.

Wind Erodibility Groups

Wind erodibility is directly related to the percentage of dry, nonerodible surface soil aggregates larger than 0.84 millimeter in diameter. From this percentage, the wind erodibility index factor (I) is determined. This factor is an expression of the stability of the soil aggregates, or the extent to which they are broken down by tillage and the abrasion caused by windblown soil particles. Soils are assigned to wind erodibility groups (WEG) having similar percentages of dry soil aggregates larger than 0.84 millimeter.

Additional information about wind erodibility groups and K, Kf, T, and I factors can be obtained from local offices of the Natural Resources

Conservation Service or the Cooperative Extension Service.

Crops, Pasture, and Erosion Control in Lake County Area

Crops and Pasture

According to the "Census of Agriculture," completed by the U.S. Department of Commerce, in 1982 more than 87,000 acres of the area was harvested cropland. This 87,000 acres is about 14 percent of the survey area. Of this total, about 2,100 acres were planted to Irish potatoes; 4,000 acres planted to oats for grain; 500 acres planted to corn for silage; 1,050 acres were used for orchards; 14,000 acres were planted to wheat for grain; 16,000 acres to barley for grain; and 49,000 acres used for hay. The rest was idle. In addition, 53,000 acres were used for pastureland.

Soil tilth is an important factor in germination and emergence of seeds, and in the infiltration of water into the soil. Soils with good tilth are granular and porous and have good organic matter content.

Tilth is good in most of the soils in the area. Management practices that maintain or increase the content of organic matter also improve tilth and soil structure.

Tilth is marginal in the strongly alkaline soils such as Esteslake, Marklepass, and Vincom. Tilth is poor in the forested soils such as Eaglewing, Yellowbay, and Wildgen. It is also poor in silty soils. If the forested or silty soils are cultivated when wet, they tend to become crusted or very cloddy when dry. As a result, preparing a good seedbed is difficult. The formation of a crust reduces the water infiltration rate and increases runoff rate and the risk of erosion. Returning crop residue to the soil, planting legume or leguminous crops, and regularly adding manure and other organic material improves soil structure, soil tilth, and helps to control surface crusting.

Soil fertility is affected by soil reaction (pH) and by the content of plant nutrients. Measures that help maintain soil fertility are chemical fertilizer, barnyard manure, and green manure crops. Controlling erosion also helps maintain fertility. Crops respond to nitrogen and phosphorus fertilizers on generally all soils in the area.

Most subsoils in the area are deficient in nutrients. Soils developed under grasslands, such as Truscreek, Post, and Ronan, have very low supplies of available nitrogen, phosphorus, and potassium. Soils developed under forested conditions, such as Yellowbay, Eaglewing, and Wildgen, have a medium supply of available phosphorus and a very low supply of available potassium. The Courville and Mollman forested soils have a high supply of phosphorus. Most of it is unavailable to plants because of being held tightly in the brown soil surface layer. This layer which has volcanic ash origin.

The inherent amount of nitrogen available to plants is related to the amount of soil organic matter. Soils that formed in grasslands typically have a medium to high organic matter content. Poorly drained and very poorly drained soils, such as Bohnly, Colake, and Bolack, have a high or very high organic matter content. Forest soils typically have a low content of organic matter.

Soils in the area typically range from medium acid to strongly alkaline. The slightly acid to neutral soils, such as Truscreek, Lonepine, and Polson, have adequate amounts of organic matter in the surface layer. High pH or alkaline conditions reduce the availability of phosphorus and micronutrients in the soils of Esteslake and Marklepass. Forested soils and soils formed in glacial outwash have lower pH than prairie soils. Lime may be needed on these soils. Lime and fertilizer applications should be based on soil tests to determine crop needs, and on expected yield levels. The Cooperative Extension Service can help in determining needed lime and kinds and amounts of fertilizer.

The conservation of soil moisture and management of irrigation water are especially important on nonirrigated and irrigated cropland. Of the total cropland, small grain acres are nearly equally divided between irrigated and nonirrigated.

Conserving moisture when managing nonirrigated cropland involves reducing evaporation, limiting runoff, increasing infiltration, and controlling weeds. Among the effective means of conserving moisture are contour farming, stripcropping, field windbreaks, tall grass barriers, and timely tillage. In addition, crop residue systems such as stubble mulching, minimum tillage, and no-till, enhance soil moisture. In the western part of the survey area crop-fallow systems are commonly used for successful crop production due to the dry climate conditions. Fallow tillage stores moisture and helps to control weeds.

Flexible cropping systems are an alternative to the crop-fallow system. With flexible cropping, the decision of whether to plant a crop or not, is based chiefly on available soil moisture at seeding time plus the average growing season precipitation. Planting the crop is indicated if the combination of these equals 8 to 10 inches.

Managing irrigated cropland involves managing seepage from water conveyance systems, proper system design and operation, and preventing or reducing salinity or alkalinity.

Other conservation tillage systems that can be effective in the area are no-till and mulch-tillage.

A no-till system is used in irrigated and nonirrigated crop management. This entails planting a seed without seedbed preparation. Consequently, the soil surface is disturbed only in the immediate area of the planted seed row and thereby leaves a protective cover of crop residue on the soil surface. Weed control is accomplished primarily with herbicides.

In a mulch-tillage system the total soil surface is tilled in a manner where plant residues are specifically left on or near the surface. Included in the mulch-till system are "system mulching" and "minimum tillage." Applications of herbicides may be needed to control weeds in areas used for crops and pasture. The kind and amount of herbicides, and the application rate, are affected by organic matter content, pH level, free carbonates in the surface, and soil texture.

The most common crop species used for areas of pasture are bromegrass, bluegrass, reed canarygrass, orchardgrass, alfalfa, crownvetch, red clover, and ladino clover.

Forage production can be enhanced by management practices. Management needed on established stands includes applications of fertilizer, control of weeds and brush, rotation and deferred grazing in a full-season grazing system, proper stocking rates, and adequate livestock watering facilities. Erosion is a severe hazard if protective plant cover is destroyed if the more sloping areas of pasture and hayland are renovated. If cultivated crops are grown prior to seeding, soil loss can be reduced by leaving crop residue on the surface and using contour farming and grassed waterways.

Interseeding grasses and legumes into the existing, but dead sod, eliminates the need for destroying plant cover during seedbed preparation. All live vegetation within the drill row must be destroyed before interseedings can be successful.

Specialty Crops

Crops of potatoes and orchards of cherries and apples require unique soil management. The following paragraphs describe the main management difficulties for these specialty crops. These concerns are proper irrigation, moisture conservation, maintaining soil fertility, and controlling soil blowing and water erosion.

Potatoes are grown on about 2,100 acres of land throughout the survey area. Nearly half the agricultural income comes from potatoes. Most potatoes are grown for seed and sold to growers out of state. Potatoes are usually grown on sandy soils as these soils yield clean tubers at harvest. The production of good potato crops is also attained when using well drained loam soils or clay loam soils. Heavy clay and silty clay topsoils are likely to produce misshapen tubers as soils cling to them during harvest, causing them to crack. Potatoes are grown in crop rotations. This keeps the soil fertile and reduces crop losses from disease and insects. Additionally, it maintains the soil organic matter. A typical rotation is 3 to 4 year's in alfalfa, 1 year in potatoes, and 1 year in cereal grain. Some growers plow under the third years alfalfa crop in the fall before planting potatoes. When a short rotation is desired, good results are attained by substituting red clover or sweetclover for alfalfa. The continuous rotation of potatoes and cereal grain will exhaust the available soil organic matter, resulting in topsoil consisting primarily of fine sand particles with a lowered soil reaction (pH), whereas rotations with a leguminous crop help maintain the topsoil's organic matter content. Additionally, the continuous rotation of potatoes and a leguminous crop supplies nitrogen and helps preserve the soil structure and reaction (pH) favorable for crop growth. The addition of barnyard manure is also very beneficial to most soils. In most soils, lime and commercial fertilizers will improve soil reaction and the yield and grade of potatoes.

Soil blowing in potato fields can be serious in spring when the soil surface is bare and dry, and there is little crop residue for protection. Soil blowing can be reduced by stripcropping on fields which were formerly block farmed, and with an alfalfa, potato, and small grain rotation. Alternative practices such as field windbreaks, tall grass barriers, and timely tillage also help control soil blowing. Potatoes respond to the addition of nitrogen and phosphorus and to the secondary plant nutrients of sulfur and magnesium. In some areas, the addition of the micro-nutrients zinc, manganese, and boron are beneficial. The application of lime increases soil pH and lowers the soil calcium-phosphorus ratio. Manganese application has reduced potato scab severity and reduced the calcium-phosphorus ratio in topsoil. Soil tests provide the most reliable information for planning and managing crop nutrient requirements.

In the Lake County area, sweet cherry crops have the distinct advantage of ripening later than

in other parts of the northwest, thus reducing market competition. The sweet cherry crop is confined to the periphery of Flathead Lake. The lake modifies temperatures and protects trees against late spring or early fall frosts. Extreme cold temperature is the main concern of the cherry producer. The severely cold winter of 1935 killed most cherry trees. The winters of 1919, 1927, 1955, and 1959 also damaged trees severely. Late July is harvest time for cherries. They are usually a 73-day crop. July and August are the driest months so fruits cracking due to rain is at a minimum. July temperatures average 67 degrees F. The cool night temperatures in July favor fruit firmness and handling qualities. The main soil management concerns are water erosion and soil fertility. Orchards with infertile soils can result in weak, late-maturing trees. Trees respond to nitrogen, phosphorus, and micro-nutrient fertilizers.

Controlling water erosion also helps maintain soil fertility. The hazard of water erosion and runoff are concerns when establishing orchards in areas of strongly sloping to moderately steep soils such as Courville and Eaglewing. Suitable practices for erosion control in orchards are maintaining grass strips, planting on the contour, and the use of grassed row shrub waterways. Grass strips provide a protective plant cover between tree rows. They reduce dustiness during harvest and provide clean fruit. Additionally, for extended periods of time they can hold soil loss to an amount that will not reduce the productive capacity of the soils. Fallowing a 5-foot grass strip on the contour within tree rows allows for easier management of drip irrigation, fertilization, and liming of the trees.

Erosion Control

Water erosion and soil blowing is a potential problem on most cropland and pasture in the survey area. Water erosion is a hazard in places where the slope is more than 2 percent. For example, Dubay, Polson, Post, and Ronan soils have slopes more than 2 percent and are subject to water erosion.

Loss of the surface layer through erosion is damaging for two reasons. First, productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into a plow layer. Second, erosion on farmland can result in the pollution of streams and lakes by sediment. Loss of the surface is especially damaging on soils with a strongly sodic, clayey subsoil such as the Post and Ronan soils. As erosion continues these soils will become hard and less permeable to water and root penetration. Erosion also reduces the productivity of sandy soils. It furthers the already low water holding capacity of drought prone soils such as McCollum. Loss of the surface layer is particularly damaging on soils containing a limy subsoil. Phosphorus is strongly fixed and becomes unavailable to plants growing, for example, in the eroded Vincom and Niarada soils. By minimizing the pollution of streams, ponds, and lakes, erosion control improves the quality of water used for municipal areas, fish and wildlife, and recreation.

Erosion control that uses protective plant cover will reduce water runoff, increase water infiltration, and protect the surface from the disturbing impact of raindrops. A cropping system able to keep surface plant cover intact for extended periods of time will hold soil loss to a level that maintains its productive capacity. On livestock farms where part of the acreage is pasture, or hayland in rotation with crops, the grasses and legumes will provide nitrogen and improve the tilth for subsequent crops. Grasses and legumes also reduce erosion on sloping soils. On potato farms where legumes and grasses are included in crop rotations the soil nitrogen is increased, tilth is improved, and the neutrality (pH) of the surface soil is maintained. Such soils are McCollum, Jocko, and Selon. Management practices that reduce surface compaction and severe gully erosion, are especially important on steep soils such as Kerrdam, Vincom, and Belton.

In most areas of the moderately sloping Post, Polson, and Lonepine soils, slopes are so short and irregular that terracing is not practical. On these soils, a conservation cropping system that provides a protective plant cover is needed to control erosion. A conservation tillage system that leaves crop residue on the soil surface increases the water infiltration rate and reduces runoff and soil blowing. No-till farming systems are effective in controlling erosion for small grains on most soils in the area, even those with slopes up to 15 percent.

Soil blowing is a hazard on most soils in the area. It can damage soils in a few hours if winds are strong and the soils are dry with no plant cover or surface mulch. Sandy soils used to grow potatoes are very susceptible to soil blowing. Conservation practices are needed to minimize this. Generally, a combination of several practices are used. Among these are contour cultivation, stripcropping, no-till, minimum-till, field windbreaks, and tall grass barriers.

Maintaining plant cover or surface mulch, or keeping the surface rough with proper tillage,

minimizes the damage caused by wind. Maintaining a high organic matter content in the soil surface by including legumes and grasses in the cropping system improves soil tilth, natural fertility, and the aggregation of primary soil particles. Windbreaks made up of suitable trees and shrubs such as Tatarian honeysuckle, Ponderosa pine, and Golden willow, also help to control soil blowing.

Terraces and diversions reduce the hazards of runoff and soil blowing by reducing the length of slopes. They are most practical on deep, well drained soils with medium slopes. In some areas the Kerl, Lonepine, Dubay, and Truscreek soils are suitable for terraces and diversions.

Contour farming helps control erosion. It is most effective in areas where slopes are smooth and uniform such as some areas of Post, Niarada, and Belton soils.

Information about the specific design of erosion control practices, for each kind of soil, is contained in the Technical Guide which is available in local offices of the Natural Resources Conservation Service.

MAIN CROPLAND LIMITATIONS AND HAZARDS

(See text for a description of the limitations and hazards listed in this table)

Soil name and map symbol	Cropland limitations or hazards
1:	
Aeric Haplaquepts	Onsite required
2:	
Badland	Nonsoil material
3:	
Bata	Water erosion Short frost-free period Slope
4:	
Bata	Water erosion Short frost-free period Slope
5:	
Belton	Sodium content
6:	
Belton	Water erosion Slope Sodium content
7:	
Belton	Water erosion Slope Sodium content
8:	
Belton	Sodium content
Kerl	None
9:	
Belton	Water erosion Sodium content
Kerl	Water erosion
10:	
Bigarm	Water erosion Limited available water capacity Slope Surface rock fragments
11:	
Bigarm	Water erosion Slope Surface rock fragments
12:	
Bigarm	Water erosion Slope
13:	
Bigarm	Areas of rock outcrop Water erosion Slope
Hogsby	Areas of rock outcrop Depth to rock Water erosion Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface stones
Rock outcrop	Nonsoil material
14:	
Bigarm	Areas of rubble land Water erosion Limited available water capacity Slope Surface stones

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
14 (con.):	
Rubble land	Nonsoil material
15:	
Bigarm	Areas of rock outcrop Water erosion Limited available water capacity Slope Surface rock fragments
Hogsby	Areas of rock outcrop Depth to rock Water erosion Limited available water capacity Potential for ground-water pollution Slope Soil blowing
Rock outcrop	Nonsoil material
16:	
Bigarm	Areas of rock outcrop Areas of rubble land Water erosion Limited available water capacity Slope Surface stones
Rock outcrop	Nonsoil material
Rubble land	Nonsoil material
17:	
Bohnly	Flooding Potential for ground-water pollution Water table
18:	
Bolack	Flooding Potential for ground-water pollution Water table
19:	
Borohemists	Onsite required
20:	
Bowlake	None
21:	
Bowlake	Water erosion Slope
Minesinger	Water erosion Slope
22:	
Colake	Lime content Potential for ground-water pollution Water table
23:	
Colake	Lime content Potential for ground-water pollution Water table
24:	
Colake	Lime content Potential for ground-water pollution Water table
Sacheen	Excessive permeability Potential for ground-water pollution
25:	
Connah	Surface rock fragments
26:	
Connah	None

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
27:	
Connah	None
Water	Nonsoil material
28:	
Courville	Water erosion Short frost-free period Slope
29:	
Courville	Water erosion Short frost-free period Slope
30:	
Courville	Water erosion Short frost-free period Slope
31:	
Courville	Water erosion Short frost-free period Slope
32:	
Courville	Water erosion Short frost-free period Slope
33:	
Courville	Water erosion Short frost-free period Slope
34:	
Courville	Water erosion Short frost-free period Slope
Rumblecreek	Water erosion Short frost-free period Slope
35:	
Craddock	Water erosion Short frost-free period Slope
36:	
Craddock	Water erosion Short frost-free period Slope
37:	
Craddock	Water erosion Short frost-free period Slope
38:	
Doker	Flooding Potential for ground-water pollution Water table
39:	
Dryfork	Lack of timely precipitation Sodium content Surface crusting
40:	
Dryfork	Lack of timely precipitation Sodium content Surface crusting
Selow	Lack of timely precipitation Restricted permeability Sodium content Surface crusting

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
41:	
Dryfork	Water erosion Lack of timely precipitation Slope Sodium content Surface crusting
Selow	Water erosion Lack of timely precipitation Restricted permeability Slope Sodium content Surface crusting
42:	
Dubay	None
43:	
Dubay	None
44:	
Eaglewing	Water erosion Slope
45:	
Eaglewing	Water erosion Slope
46:	
Eaglewing	Water erosion
47:	
Esteslake	Areas of slick spots Lack of timely precipitation Lime content Limited available water capacity Restricted permeability Salt content Sodium content Surface crusting
Slickspots	Nonsoil material
48:	
Felan	Water erosion Short frost-free period Slope
49:	
Felan	Water erosion Short frost-free period Slope
50:	
Finleypoint	Surface rock fragments
51:	
Finleypoint	Water erosion Short frost-free period Slope Surface rock fragments
52:	
Finleypoint	Water erosion Short frost-free period Slope
53:	
Finleypoint	Water erosion Short frost-free period Slope
54:	
Finleypoint	Water erosion Short frost-free period Slope

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
55:	
Finleypoint	Water erosion Short frost-free period Slope
56:	
Finleypoint	Water erosion Slope
Wildgen	Water erosion Slope
57:	
Flott	None
58:	
Flott	Water erosion Slope
59:	
Flott	Water erosion Slope
60:	
Flott	Water erosion Slope
61:	
Flott	Water erosion Slope Surface rock fragments
62:	
Gardencreek	Lack of timely precipitation Water table
63:	
Gird	None
64:	
Gird	None
65:	
Gird	Potential for ground-water pollution Water table
Dryfork	Lime content Potential for ground-water pollution Sodium content Surface crusting Water table
66:	
Gird	Water erosion
Vincom	Water erosion Lime content Sodium content Surface crusting
67:	
Gird	Water erosion Slope
Vincom	Water erosion Lime content Slope Sodium content Surface crusting
68:	
Glaciercreek	Excessive permeability Limited available water capacity Potential for ground-water pollution Short frost-free period
69:	
Half Moon	Short frost-free period

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
70:	
Half moon	Water erosion Short frost-free period Slope
Courville	Water erosion Short frost-free period Slope
71:	
Hogsby	Depth to rock Water erosion Limited available water capacity Potential for ground-water pollution Slope Soil blowing
Finleypoint	Water erosion Slope
72:	
Hogsby	Areas of rock outcrop Depth to rock Water erosion Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface stones
Rock outcrop	Nonsoil material
73:	
Holloway	Water erosion Limited available water capacity Short frost-free period Slope
74:	
Holloway	Water erosion Limited available water capacity Short frost-free period Slope
75:	
Holloway	Water erosion Limited available water capacity Short frost-free period Slope
76:	
Holloway	Water erosion Limited available water capacity Short frost-free period Slope
77:	
Holloway	Areas of rock outcrop Water erosion Limited available water capacity Short frost-free period Slope
Rock outcrop	Nonsoil material
78:	
Holloway	Areas of rubble land Water erosion Limited available water capacity Short frost-free period Slope
Rubble land	Nonsoil material

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
79:	
Irvine	Water erosion Lime content Poor tilth Restricted permeability Slope Surface crusting
80:	
Irvine	Water erosion Lime content Poor tilth Restricted permeability Slope Surface crusting
81:	
Jocko	Excessive permeability Limited available water capacity Potential for ground-water pollution
82:	
Jocko	Water erosion Excessive permeability Limited available water capacity Potential for ground-water pollution Slope
83:	
Jocko	Excessive permeability Limited available water capacity Potential for ground-water pollution Surface stones
84:	
Kerl	None
85:	
Kerl	Water erosion
86:	
Kerrdam	Lack of timely precipitation
87:	
Kerrdam	Water erosion Lack of timely precipitation
88:	
Kerrdam	Water erosion Lack of timely precipitation Slope
Vincom	Water erosion Lack of timely precipitation Lime content Slope Sodium content Surface crusting
89:	
Kerrdam	Water erosion Lack of timely precipitation Slope
Vincom	Water erosion Lack of timely precipitation Lime content Slope Sodium content Surface crusting
90:	
Kingspoint	Water erosion Slope
91:	
Kingspoint	Water erosion Slope Surface rock fragments

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
92:	
Kingspoint	Water erosion Slope Surface rock fragments
93:	
Lamoose	Excessive permeability Flooding Lime content Limited available water capacity Potential for ground-water pollution Water table
94:	
Lonepine	Lack of timely precipitation
95:	
Lonepine	Lack of timely precipitation
96:	
Lonepine	Water erosion Lack of timely precipitation
97:	
Lonepine	Water erosion Lack of timely precipitation
Vincom	Water erosion Lack of timely precipitation Lime content Sodium content Surface crusting
98:	
Lonepine	Water erosion Lack of timely precipitation Slope
Vincom	Water erosion Lack of timely precipitation Lime content Slope Sodium content Surface crusting
99:	
Marklepass	Lack of timely precipitation Limited available water capacity Poor tilth Restricted permeability Sodium content Surface crusting
100:	
Marklepass	Areas of slick spots Lack of timely precipitation Limited available water capacity Poor tilth Restricted permeability Sodium content Surface crusting
Slickspots	Nonsoil material
101:	
McCollum	None
102:	
McCollum	None
103:	
McCollum	None
104:	
McCollum	None
105:	
McDonald	Surface rock fragments

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
106:	
McDonald	Water erosion Surface rock fragments
107:	
McDonald	Water erosion Slope Surface rock fragments
108:	
McDonald	None
109:	
Minesinger	Water erosion Slope Surface stones
110:	
Minesinger	Water erosion Slope Surface stones
Walstead	Water erosion Slope Surface stones
111:	
Mitten	Water erosion Limited available water capacity Short frost-free period Slope
112:	
Mitten	Water erosion Limited available water capacity Short frost-free period Slope Surface rock fragments
113:	
Mitten	Water erosion Limited available water capacity Short frost-free period Slope Surface rock fragments
114:	
Mitten	Areas of rock outcrop Water erosion Limited available water capacity Short frost-free period Slope Surface rock fragments
Rock outcrop	Nonsoil material
115:	
Moiese	Excessive permeability Lack of timely precipitation Limited available water capacity Potential for ground-water pollution
116:	
Mollman	Short frost-free period
117:	
Mollman	Water erosion Short frost-free period Slope
118:	
Mollman	Water erosion Short frost-free period Slope
119:	
Mollman	Water erosion Short frost-free period Slope Surface rock fragments

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
120:	
Niarada	None
121:	
Niarada	None
122:	
Niarada	Water erosion Slope
123:	
Niarada	Water erosion Slope
124:	
Niarada	Water erosion Slope
125:	
Niarada	Water erosion Slope
Kerl	Water erosion Slope
126:	
Ninepipe	Lime content Water table
127:	
Phillcher	Water erosion Limited available water capacity Short frost-free period Slope
128:	
Phillcher	Areas of rock outcrop Water erosion Limited available water capacity Short frost-free period Slope
Rock outcrop	Nonsoil material
129:	
Pits	Nonsoil material
130:	
Polson	Sodium content
131:	
Polson	Sodium content
132:	
Polson	Water erosion Sodium content
Vincom	Water erosion Lime content Sodium content Surface crusting
133:	
Post	Restricted permeability Sodium content Surface crusting
134:	
Post	Restricted permeability Sodium content Surface crusting
135:	
Post	Water erosion Restricted permeability Sodium content Surface crusting

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
136:	
Post	Water erosion Restricted permeability Sodium content Surface crusting
Ronan	Water erosion Poor tilth Restricted permeability Sodium content Surface crusting
Water	Nonsoil material
137:	
Post	Water erosion Restricted permeability Slope Sodium content Surface crusting
Ronan	Water erosion Poor tilth Restricted permeability Slope Sodium content Surface crusting
Water	Nonsoil material
138:	
Repp	Water erosion Lime content Limited available water capacity Slope
139:	
Repp	Areas of rock outcrop Water erosion Limited available water capacity Slope
Rock outcrop	Nonsoil material
140:	
Rock outcrop	Nonsoil material
Rubble land	Nonsoil material
141:	
Ronan	Poor tilth Restricted permeability Sodium content Surface crusting
142:	
Ronan	Poor tilth Restricted permeability Sodium content Surface crusting
143:	
Ronan	Water erosion Poor tilth Restricted permeability Sodium content Surface crusting
144:	
Round Butte	Lack of timely precipitation Restricted permeability Sodium content Surface crusting
145:	
Round Butte	Lack of timely precipitation Restricted permeability Sodium content Surface crusting

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
146:	
Round Butte	Water erosion Lack of timely precipitation Restricted permeability Sodium content Surface crusting
147:	
Round Butte	Lack of timely precipitation Restricted permeability Sodium content Surface crusting
148:	
Round Butte	Water erosion Lack of timely precipitation Restricted permeability Sodium content Surface crusting
Irvine	Water erosion Lack of timely precipitation Lime content Poor tilth Restricted permeability Surface crusting
149:	
Round Butte	Water erosion Lack of timely precipitation Restricted permeability Slope Sodium content Surface crusting
Irvine	Water erosion Lack of timely precipitation Lime content Poor tilth Restricted permeability Slope Surface crusting
150:	
Rumblecreek	Short frost-free period
151:	
Rumblecreek	Water erosion Short frost-free period Slope
152:	
Rumblecreek	Water erosion Short frost-free period Slope
153:	
Rumblecreek	Water erosion Short frost-free period Slope
154:	
Sacheen	Excessive permeability Potential for ground-water pollution Slope Soil blowing
155:	
Sacheen	Excessive permeability Potential for ground-water pollution
156:	
Selon	None
157:	
Selon	None
158:	
Selon	None

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
159:	
Selon	Water erosion Slope
160:	
Selow	Lack of timely precipitation Restricted permeability Sodium content Surface crusting
161:	
Selow	Lack of timely precipitation Restricted permeability Sodium content Surface crusting
162:	
Tevis	Water erosion Limited available water capacity Short frost-free period Slope Surface rock fragments
163:	
Trapps	Water erosion Short frost-free period Slope
164:	
Trapps	Water erosion Short frost-free period Slope
165:	
Truscreek	None
166:	
Truscreek	None
Polson	Sodium content
167:	
Truscreek	None
Polson	Sodium content
168:	
Truscreek	Water erosion
Polson	Water erosion Sodium content
169:	
Typic Haplaquepts	Onsite required
170:	
Vincom	Water erosion Lack of timely precipitation Lime content Slope Sodium content Surface crusting
171:	
Vincom	Water erosion Lack of timely precipitation Lime content Slope Sodium content Surface crusting
Lonepine	Water erosion Lack of timely precipitation Slope
172:	
Waldbillig	Water erosion Short frost-free period Slope

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
173:	
Waldbillig	Water erosion Short frost-free period Slope
174:	
Walstead	None
175:	
Walstead	None
176:	
Walstead	Water erosion Slope
177:	
Walstead	Areas of rock outcrop Water erosion Slope Surface stones
Rock outcrop	Nonsoil material
178:	
Whitearth	Water erosion Lack of timely precipitation Lime content Sodium content Surface crusting
Esteslake	Lack of timely precipitation Lime content Limited available water capacity Restricted permeability Salt content Sodium content Surface crusting
179:	
Wildgen	Water erosion Slope
180:	
Wildgen	Limited available water capacity Slope Surface rock fragments
181:	
Wildgen	Water erosion Slope
Finleypoint	Water erosion Slope
182:	
Winfall	Short frost-free period Slope Surface rock fragments
183:	
Winfall	Water erosion Short frost-free period Slope Surface rock fragments
184:	
Winfall	Water erosion Short frost-free period Slope Surface rock fragments
185:	
Winkler	Areas of rock outcrop Water erosion Limited available water capacity Slope Surface rock fragments
Rock outcrop	Nonsoil material

MAIN CROPLAND LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Cropland limitations or hazards
186:	
Winkler	Water erosion Limited available water capacity Slope Surface rock fragments
187:	
Winkler	Areas of rock outcrop Water erosion Limited available water capacity Slope Surface rock fragments
Sharrott	Areas of rock outcrop Depth to rock Water erosion Limited available water capacity Potential for ground-water pollution Slope Soil blowing Surface rock fragments
Rock outcrop	Nonsoil material
188:	
Xerofluvents	Onsite required
189:	
Xerofluvents	Onsite required
190:	
Yellowbay	Excessive permeability Limited available water capacity Potential for ground-water pollution Surface rock fragments
191:	
Yellowbay	Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments
192:	
Yellowbay	Excessive permeability Limited available water capacity Potential for ground-water pollution Slope Surface rock fragments
M-W:	
Miscellaneous water	Nonsoil material
W:	
Water	Nonsoil material

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS

(Yields in the 'N' columns are for nonirrigated soils; those in the 'I' column are for irrigated soils. Yields are those that can be expected under a high level of nonirrigated and irrigated management by component name. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil. The listing of a crop yield does not endorse the use of a soil for that crop.)

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Grass Hay		Alfalfa hay	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons	
1: Aeric Haplaquepts.												
2: Badland.												
3: Bata----------	6E	---	---	---	---	---	---	---	---	---	---	---
4: Bata----------	7E	---	---	---	---	---	---	---	---	---	---	---
5: Belton----------	3S	3S	27.0	60.0	31.0	75.0	46.0	70.0	1.5	4.5	2.0	5.5
6: Belton----------	4E	4E	21.0	50.0	23.0	65.0	38.0	60.0	1.0	3.5	---	---
7: Belton----------	6E	---	---	---	---	---	---	---	---	---	---	---
8: Belton----------	3S	3S	27.0	60.0	31.0	75.0	46.0	70.0	1.4	4.5	1.8	5.5
Kerl----------	3E	2E	44.0	65.0	50.0	80.0	71.0	75.0	1.7	5.0	2.0	6.0
9: Belton----------	3E	3E	27.0	55.0	29.0	70.0	45.0	65.0	1.2	4.0	1.5	5.0
Kerl----------	3E	3E	44.0	60.0	50.0	75.0	71.0	70.0	1.5	4.0	1.7	5.0
10: Bigarm----------	6E	---	---	---	---	---	---	---	---	---	---	---
11: Bigarm----------	6E	---	---	---	---	---	---	---	---	---	---	---
12: Bigarm----------	4E	4E	23.0	---	27.0	---	41.0	---	1.2	3.5	---	---
13: Bigarm----------	7E	---	---	---	---	---	---	---	---	---	---	---
Hogsby----------	7S	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
14: Bigarm----------	7E	---	---	---	---	---	---	---	---	---	---	---
Rubble land.												
15: Bigarm----------	7E	---	---	---	---	---	---	---	---	---	---	---
Hogsby----------	7E	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
16: Bigarm----------	7E	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
Rubble land.												
17: Bohnly----------	5W	---	---	---	---	---	---	---	4.0	---	---	---

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Grass Hay		Alfalfa hay	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons	
18:												
Bolack----------	5W	---	---	---	---	---	---	---	4.0	---	---	---
19:												
Borohemists.												
20:												
Bowlake---------	3E-	---	30.0	---	33.0	---	50.0	---	1.5	---	2.0	---
21:												
Bowlake---------	4E	---	25.0	---	27.0	---	41.0	---	1.2	---	---	---
Minesinger------	4E	---	22.0	---	24.0	---	39.0	---	1.2	---	---	---
22:												
Colake----------	5W	---	---	---	---	---	---	---	4.0	---	---	---
23:												
Colake----------	4E	4E	46.0	---	51.0	---	73.0	---	4.5	5.5	---	---
24:												
Colake----------	5W	---	---	---	---	---	---	---	4.0	---	---	---
Sacheen---------	6S	---	---	---	---	---	---	---	0.8	---	---	---
25:												
Connah----------	3E	3E	42.0	60.0	46.0	75.0	67.0	70.0	1.2	3.5	1.8	4.5
26:												
Connah----------	3E	3E	43.0	65.0	48.0	80.0	69.0	75.0	1.6	4.0	2.2	5.0
27:												
Connah----------	3E	3E	43.0	65.0	49.0	80.0	69.0	75.0	1.5	4.0	2.0	5.0
Water.												
28:												
Courville-------	6E	---	---	---	---	---	---	---	---	---	---	---
29:												
Courville-------	6E	---	---	---	---	---	---	---	---	---	---	---
30:												
Courville-------	7E	---	---	---	---	---	---	---	---	---	---	---
31:												
Courville-------	6E	---	---	---	---	---	---	---	---	---	---	---
32:												
Courville-------	6E	---	---	---	---	---	---	---	---	---	---	---
33:												
Courville-------	7E	---	---	---	---	---	---	---	---	---	---	---
34:												
Courville-------	6E	---	---	---	---	---	---	---	---	---	---	---
Rumblecreek-----	6E	---	---	---	---	---	---	---	---	---	---	---
35:												
Craddock--------	7E	---	---	---	---	---	---	---	---	---	---	---
36:												
Craddock--------	6E	---	---	---	---	---	---	---	---	---	---	---
37:												
Craddock--------	6E	---	---	---	---	---	---	---	---	---	---	---
38:												
Doker----------	5W	---	---	---	---	---	---	---	---	---	---	---
39:												
Dryfork---------	4S	4S	28.0	45.0	32.0	52.0	48.0	55.0	---	4.5	---	5.0
40:												
Dryfork---------	4S	---	28.0	---	32.0	---	48.0	---	---	---	---	---
Selow----------	6S	---	17.0	---	19.0	---	32.0	---	---	4.0	---	---

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Grass Hay		Alfalfa hay	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons	
41:												
Dryfork---------	4E	---	26.0	---	29.0	---	45.0	---	---	---	---	---
Selow----------	6E	---	15.0	---	17.0	---	28.0	---	---	---	---	---
42:												
Dubay----------	3E	3E	47.0	65.0	52.0	80.0	74.0	75.0	2.0	4.5	2.5	5.5
43:												
Dubay----------	3E	3E	47.0	65.0	52.0	85.0	74.0	75.0	1.8	4.5	2.0	5.5
44:												
Eaglewing-------	4E	---	40.0	---	46.0	---	65.0	---	---	---	---	---
45:												
Eaglewing-------	6E	---	---	---	---	---	---	---	---	---	---	---
46:												
Eaglewing-------	3E	---	46.0	---	52.0	---	74.0	---	---	---	---	---
47:												
Esteslake-------	7S	---	---	---	---	---	---	---	---	---	---	---
Slickspots.												
48:												
Felan----------	6E	---	---	---	---	---	---	---	---	---	---	---
49:												
Felan----------	7E	---	---	---	---	---	---	---	---	---	---	---
50:												
Finleypoint-----	3E	---	33.0	---	38.0	---	55.0	---	---	---	---	---
51:												
Finleypoint-----	4E	---	30.0	---	34.0	---	50.0	---	---	---	---	---
52:												
Finleypoint-----	6E	---	---	---	---	---	---	---	---	---	---	---
53:												
Finleypoint-----	7E	---	---	---	---	---	---	---	---	---	---	---
54:												
Finleypoint-----	6E	---	---	---	---	---	---	---	---	---	---	---
55:												
Finleypoint-----	7E	---	---	---	---	---	---	---	---	---	---	---
56:												
Finleypoint-----	7E	---	---	---	---	---	---	---	---	---	---	---
Wildgen---------	7E	---	---	---	---	---	---	---	---	---	---	---
57:												
Flott----------	3E	---	34.0	---	39.0	---	57.0	---	---	---	---	---
58:												
Flott----------	4E	---	31.0	---	35.0	---	53.0	---	---	---	---	---
59:												
Flott----------	6E	---	---	---	---	---	---	---	---	---	---	---
60:												
Flott----------	7E	---	---	---	---	---	---	---	---	---	---	---
61:												
Flott----------	7E	---	---	---	---	---	---	---	---	---	---	---
62:												
Gardencreek-----	4E	3E	31.0	---	35.0	---	52.0	---	---	---	2.0	5.5
63:												
Gird----------	3E	2E	43.0	65.0	49.0	80.0	69.0	75.0	2.0	5.0	2.5	6.0
64:												
Gird----------	3E	2E	43.0	65.0	49.0	80.0	69.0	75.0	2.0	5.0	2.5	6.0

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Grass Hay		Alfalfa hay	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons	
65:												
Gird----------	3E	---	50.0	---	56.0	---	80.0	---	2.0	---	2.7	---
Dryfork---------	4E	---	46.0	---	51.0	---	73.0	---	1.8	---	2.0	---
66:												
Gird----------	3E	3E	43.0	60.0	49.0	75.0	69.0	70.0	1.7	4.5	2.3	5.5
VINCOM----------	4E	4E	36.0	50.0	39.0	65.0	58.0	60.0	---	5.0	---	5.0
67:												
Gird----------	4E	4E	41.0	55.0	46.0	70.0	67.0	65.0	1.2	4.0	2.0	4.5
Vincom----------	6E	4E	32.0	45.0	37.0	60.0	53.0	55.0	---	5.0	---	5.0
68:												
Glaciercreek----	6S	---	14.0	---	15.0	---	24.0	---	---	---	---	---
69:												
Half Moon-------	6E	---	35.0	---	40.0	---	57.0	---	---	---	---	---
70:												
Half Moon-------	6E	---	35.0	---	39.0	---	56.0	---	---	---	---	---
Courville-------	6E	---	23.0	---	25.0	---	38.0	---	---	---	---	---
71:												
Hogsby----------	7E	---	---	---	---	---	---	---	---	---	---	---
Finleypoint-----	7E	---	---	---	---	---	---	---	---	---	---	---
72:												
Hogsby----------	7E	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
73:												
Holloway--------	6E	---	---	---	---	---	---	---	---	---	---	---
74:												
Holloway--------	7E	---	---	---	---	---	---	---	---	---	---	---
75:												
Holloway--------	6E	---	---	---	---	---	---	---	---	---	---	---
76:												
Holloway--------	7E	---	---	---	---	---	---	---	---	---	---	---
77:												
Holloway--------	6E	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
78:												
Holloway--------	7E	---	---	---	---	---	---	---	---	---	---	---
Rubble land.												
79:												
Irvine----------	6E	---	9.0	---	9.0	---	17.0	---	---	---	---	---
80:												
Irvine----------	7E	---	---	---	---	---	---	---	---	---	---	---
81:												
Jocko----------	6S	4S	20.0	50.0	22.0	65.0	35.0	60.0	1.0	3.5	1.2	4.0
82:												
Jocko----------	6E	4E	17.0	---	20.0	---	31.0	---	---	3.2	---	---
83:												
Jocko----------	7S	---	---	---	---	---	---	---	---	---	---	---
84:												
Kerl----------	3E	2E	44.0	65.0	50.0	80.0	70.0	75.0	1.7	5.0	2.0	6.0
85:												
Kerl----------	3E	3E	44.0	60.0	50.0	75.0	70.0	70.0	1.5	4.0	1.7	5.0

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Grass Hay		Alfalfa hay	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons	
86:												
Kerrdam---------	3E	2E	30.0	60.0	34.0	70.0	51.0	70.0	1.2	5.0	1.7	6.0
87:												
Kerrdam---------	3E	3E	30.0	65.0	34.0	80.0	51.0	75.0	1.0	4.5	1.5	5.5
88:												
Kerrdam---------	4E	4E	28.0	---	31.0	---	47.0	---	---	4.0	---	5.0
Vincom----------	6E	4E	19.0	---	21.0	---	35.0	---	---	4.0	0.5	5.0
89:												
Kerrdam---------	6E	6E	---	---	---	---	---	---	---	3.5	---	---
Vincom----------	6E	6E	---	---	---	---	---	---	---	3.5	---	---
90:												
Kingspoint------	4E	---	33.0	---	36.0	---	54.0	---	---	---	---	---
91:												
Kingspoint------	6E	---	---	---	---	---	---	---	---	---	---	---
92:												
Kingspoint------	7E	---	---	---	---	---	---	---	---	---	---	---
93:												
Lamoose---------	5W	---	---	---	---	---	---	---	2.0	---	---	---
94:												
Lonepine--------	3E	2E	30.0	70.0	33.0	85.0	50.0	80.0	1.0	5.0	1.5	6.0
95:												
Lonepine--------	3E	2E	30.0	65.0	33.0	80.0	50.0	75.0	0.8	5.0	1.0	6.0
96:												
Lonepine--------	4E	3E	30.0	52.0	33.0	55.0	50.0	60.0	1.5	4.3	1.5	5.0
97:												
Lonepine--------	4E	4E	30.0	55.0	33.0	70.0	50.0	65.0	0.5	5.0	0.8	5.0
Vincom----------	4E	4E	22.0	45.0	25.0	60.0	38.0	55.0	0.5	3.0	0.8	5.0
98:												
Lonepine--------	4E	4E	27.0	45.0	31.0	50.0	47.0	55.0	1.3	4.3	1.5	4.5
Vincom----------	6E	4E	19.0	40.0	21.0	50.0	35.0	45.0	1.0	2.3	0.8	4.0
99:												
Marklepass------	7S	---	3.0	---	3.0	---	10.0	---	---	---	---	---
100:												
Marklepass------	7S	---	3.0	---	3.0	---	10.0	---	---	---	---	---
Slickspots.												
101:												
McCollum--------	4E	4E	34.0	75.0	38.0	80.0	56.0	75.0	1.6	5.0	2.2	6.0
102:												
McCollum--------	4E	4E	34.0	65.0	38.0	80.0	56.0	75.0	2.2	10.0	2.2	6.0
103:												
McCollum--------	4E	4E	34.0	60.0	38.0	75.0	56.0	70.0	1.4	4.5	2.0	5.5
104:												
McCollum--------	4E	4E	34.0	60.0	38.0	70.0	56.0	70.0	1.8	4.0	2.0	6.0
105:												
McDonald--------	3E	3E	36.0	65.0	40.0	80.0	58.0	75.0	1.8	4.0	2.5	5.0
106:												
McDonald--------	3E	3E	37.0	60.0	40.0	75.0	59.0	70.0	1.6	4.0	2.5	5.0
107:												
McDonald--------	4E	4E	30.0	55.0	34.0	70.0	50.0	65.0	1.4	3.5	---	---
108:												
McDonald--------	3E	2E	38.0	70.0	43.0	85.0	62.0	80.0	2.0	5.0	3.0	6.0

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Grass Hay		Alfalfa hay	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons	
109:												
Minesinger------	6S	---	20.0	---	21.0	---	34.0	---	---	---	---	---
110:												
Minesinger------	7S	---	---	---	---	---	---	---	---	---	---	---
Walstead--------	7S	---	---	---	---	---	---	---	---	---	---	---
111:												
Mitten----------	6E	---	6.0	---	7.0	---	14.0	---	---	---	---	---
112:												
Mitten----------	7E	---	---	---	---	---	---	---	---	---	---	---
113:												
Mitten----------	7E	---	---	---	---	---	---	---	---	---	---	---
114:												
Mitten----------	7E	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
115:												
Moiese----------	6S	4S	9.0	---	10.0	---	19.0	---	0.5	3.5	0.8	4.5
116:												
Mollman---------	6E	---	26.0	---	30.0	---	43.0	---	---	---	---	---
117:												
Mollman---------	6E	---	25.0	---	27.0	---	41.0	---	---	---	---	---
118:												
Mollman---------	6E	---	---	---	---	---	---	---	---	---	---	---
119:												
Mollman---------	7E	---	---	---	---	---	---	---	---	---	---	---
120:												
Niarada---------	3E	2E	23.0	65.0	27.0	80.0	41.0	75.0	1.7	4.0	2.0	5.0
121:												
Niarada---------	3E	3E	23.0	60.0	26.0	75.0	40.0	70.0	1.5	4.0	1.7	5.0
122:												
Niarada---------	4E	---	20.0	---	22.0	---	35.0	---	---	---	---	---
123:												
Niarada---------	6E	---	---	---	---	---	---	---	---	---	---	---
124:												
Niarada---------	7E	---	---	---	---	---	---	---	---	---	---	---
125:												
Niarada---------	4E	---	21.0	---	23.0	---	36.0	---	1.0	---	---	---
Kerl----------	4E	---	42.0	---	46.0	---	67.0	---	1.0	---	---	---
126:												
Ninepipe--------	3C	2C	53.0	70.0	60.0	85.0	83.0	80.0	2.0	5.0	3.0	6.0
127:												
Phillcher-------	6E	---	---	---	---	---	---	---	---	---	---	---
128:												
Phillcher-------	7E	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
129:												
Pits.												
130:												
Polson----------	3S	3S	28.0	60.0	31.0	75.0	47.0	70.0	1.7	4.5	2.0	5.5
131:												
Polson----------	3S	3S	28.0	55.0	31.0	75.0	47.0	65.0	1.5	4.5	1.8	5.5

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Grass Hay		Alfalfa hay	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons	
132:												
Polson----------	3E	3E	28.0	50.0	31.0	60.0	47.0	60.0	1.3	4.0	1.5	5.0
Vincom----------	4E	4E	36.0	45.0	39.0	60.0	58.0	55.0	0.5	3.0	1.5	5.0
133:												
Post----------	4S	4S	25.0	60.0	28.0	75.0	42.0	70.0	1.5	4.0	1.8	5.0
134:												
Post----------	4S	4S	25.0	55.0	28.0	70.0	42.0	65.0	1.3	4.0	1.5	5.0
135:												
Post----------	4E	4E	26.0	50.0	28.0	65.0	44.0	60.0	1.0	3.5	1.3	4.5
136:												
Post----------	4E	---	27.0	---	29.0	---	45.0	---	---	---	---	---
Ronan----------	4E	---	20.0	---	21.0	---	34.0	---	---	---	---	---
Water.												
137:												
Post----------	6E	---	21.0	---	23.0	---	36.0	---	---	---	---	---
Ronan----------	6E	---	14.0	---	15.0	---	25.0	---	---	---	---	---
Water.												
138:												
Repp----------	7E	---	---	---	---	---	---	---	---	---	---	---
139:												
Repp----------	7E	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
140:												
Rock outcrop.												
Rubble land.												
141:												
Ronan----------	4S	4S	8.0	55.0	9.0	70.0	16.0	65.0	0.8	3.5	1.0	4.5
142:												
Ronan----------	4S	4S	8.0	50.0	9.0	65.0	16.0	60.0	0.6	3.5	0.8	4.5
143:												
Ronan----------	4E	4E	8.0	45.0	9.0	60.0	16.0	55.0	0.5	3.0	0.7	4.0
144:												
Round Butte-----	4S	4S	5.0	55.0	5.0	70.0	14.0	65.0	0.8	4.0	1.0	5.0
145:												
Round Butte-----	4E	4E	5.0	50.0	5.0	65.0	14.0	60.0	0.6	4.0	0.8	5.0
146:												
Round Butte-----	4E	4E	5.0	45.0	5.0	60.0	14.0	55.0	0.5	3.5	0.7	4.5
147:												
Round Butte-----	6S	4S	5.0	50.0	5.0	55.0	14.0	60.0	---	3.5	---	4.5
148:												
Round Butte-----	4E	4E	---	---	---	---	---	---	0.5	3.5	0.7	4.5
Irvine----------	6E	4E	---	---	---	---	---	---	0.5	2.5	0.5	3.5
149:												
Round Butte-----	6E	4E	---	---	---	---	7.0	---	0.5	3.5	0.5	4.5
Irvine----------	6E	4E	5.0	---	5.0	---	14.0	---	0.5	2.5	0.5	3.5
150:												
Rumblecreek-----	6E	---	23.0	---	25.0	---	38.0	---	---	---	---	---
151:												
Rumblecreek-----	6E	---	20.0	---	23.0	---	34.0	---	---	---	---	---

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Grass Hay		Alfalfa hay	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons	
152:												
Rumblecreek-----	6E	---	---	---	---	---	---	---	---	---	---	---
153:												
Rumblecreek-----	7E	---	---	---	---	---	---	---	---	---	---	---
154:												
Sacheen---------	7E	---	26.0	---	29.0	---	44.0	---	---	---	---	---
155:												
Sacheen---------	6S	4S	---	45.0	---	60.0	---	60.0	1.0	4.0	2.0	5.0
156:												
Selon----------	3E	2E	34.0	70.0	38.0	85.0	56.0	80.0	1.5	5.0	2.0	6.0
157:												
Selon----------	4E	4E	34.0	65.0	38.0	80.0	56.0	75.0	1.5	5.0	2.0	6.0
158:												
Selon----------	3E	2E	34.0	60.0	38.0	75.0	56.0	70.0	1.4	4.5	1.8	5.5
159:												
Selon----------	4E	4E	34.0	---	38.0	---	56.0	---	1.2	---	1.5	4.5
160:												
Selow----------	4S	4S	17.0	---	19.0	---	32.0	---	---	4.0	---	5.0
161:												
Selow----------	4S	4S	17.0	---	19.0	---	32.0	---	---	4.0	---	5.0
162:												
Tevis----------	7E	---	---	---	---	---	---	---	---	---	---	---
163:												
Trapps----------	6E	---	22.0	---	24.0	---	36.0	---	---	---	---	---
164:												
Trapps----------	6E	---	---	---	---	---	---	---	---	---	---	---
165:												
Truscreek-------	3E	2E	44.0	70.0	50.0	85.0	71.0	80.0	2.0	5.0	3.0	6.0
166:												
Truscreek-------	3E	2E	44.0	80.0	50.0	80.0	71.0	80.0	2.0	5.0	3.0	6.0
Polson----------	3S	3S	27.0	60.0	29.0	75.0	45.0	70.0	1.7	4.5	2.0	5.5
167:												
Truscreek-------	3E	2E	44.0	75.0	50.0	75.0	71.0	75.0	1.5	4.5	2.5	5.5
Polson----------	3S	3S	27.0	55.0	29.0	75.0	45.0	70.0	1.7	4.0	1.8	5.5
168:												
Truscreek-------	3E	3E	44.0	70.0	50.0	70.0	71.0	70.0	1.5	4.0	2.0	5.0
Polson----------	3E	3E	27.0	50.0	29.0	60.0	45.0	65.0	1.5	4.0	1.5	5.0
169:												
Typic Haplaquepts.												
170:												
Vincom----------	7E	---	---	---	---	---	---	---	---	---	---	---
171:												
Vincom----------	4E	4E	19.0	---	21.0	---	35.0	---	---	5.0	---	5.0
Lonepine--------	4E	4E	27.0	---	31.0	---	47.0	---	---	3.0	---	4.5
172:												
Waldbillig------	6E	---	---	---	---	---	---	---	---	---	---	---
173:												
Waldbillig------	7E	---	---	---	---	---	---	---	---	---	---	---
174:												
Walstead--------	3E	3E	26.0	65.0	28.0	80.0	44.0	75.0	1.9	4.0	2.2	5.0

LAND CAPABILITY AND YIELDS PER ACRE OF CROPS--Continued

Map symbol and soil name	Land capability		Spring wheat		Winter wheat		Barley		Grass Hay		Alfalfa hay	
	N	I	N	I	N	I	N	I	N	I	N	I
			Bu		Bu		Bu		Tons		Tons	
175:												
Walstead--------	3E	3E	27.0	65.0	29.0	80.0	45.0	75.0	1.7	4.0	2.0	5.0
176:												
Walstead--------	4E	4E	23.0	55.0	27.0	70.0	41.0	65.0	1.2	3.5	---	---
177:												
Walstead--------	6E	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
178:												
Whitearth-------	7S	---	9.0	---	10.0	---	20.0	---	---	---	---	---
Esteslake-------	7S	---	---	---	---	---	---	---	---	---	---	---
179:												
Wildgen---------	6E	---	14.0	---	16.0	---	27.0	---	---	---	---	---
180:												
Wildgen---------	7E	---	---	---	---	---	---	---	---	---	---	---
181:												
Wildgen---------	6E	---	---	---	---	---	---	---	---	---	---	---
Finleypoint-----	6E	---	---	---	---	---	---	---	---	---	---	---
182:												
Winfall---------	6E	---	19.0	---	22.0	---	33.0	---	---	---	---	---
183:												
Winfall---------	6E	---	---	---	---	---	---	---	---	---	---	---
184:												
Winfall---------	7E	---	---	---	---	---	---	---	---	---	---	---
185:												
Winkler---------	7E	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
186:												
Winkler---------	7E	---	---	---	---	---	---	---	---	---	---	---
187:												
Winkler---------	7E	---	---	---	---	---	---	---	---	---	---	---
Sharrott--------	7E	---	---	---	---	---	---	---	---	---	---	---
Rock outcrop.												
188:												
Xerofluvents.												
189:												
Xerofluvents.												
190:												
Yellowbay-------	6S	---	18.0	---	21.0	---	34.0	---	---	---	---	---
191:												
Yellowbay-------	6E	---	20.0	---	22.0	---	35.0	---	---	---	---	---
192:												
Yellowbay-------	6E	---	---	---	---	---	---	---	---	---	---	---
M-W:												
Miscellaneous water.												
W:												
Water.												

PRIME FARMLAND

The following map units meet the requirements for prime farmland if irrigated.

Map symbol	Soil name
20	Bowlake gravelly loam, 4 to 8 percent slopes
26	Connah silt loam, 0 to 2 percent slopes
42	Dubay silt loam, 0 to 2 percent slopes
43	Dubay silt loam, 2 to 6 percent slopes
46	Eaglewing silt loam, 2 to 8 percent slopes
57	Flott gravelly loam, 2 to 8 percent slopes
62	Gardencreek silty clay loam, 0 to 2 percent slopes
63	Gird silt loam, 0 to 2 percent slopes
64	Gird silt loam, 2 to 4 percent slopes
84	Kerl loam, 2 to 4 percent slopes
86	Kerrdam silt loam, 0 to 2 percent slopes
94	Lonepine silt loam, 0 to 2 percent slopes
95	Lonepine silt loam, 2 to 4 percent slopes
101	McCollum fine sandy loam, 0 to 2 percent slopes
102	McCollum fine sandy loam, 2 to 4 percent slopes
103	McCollum fine sandy loam, 4 to 8 percent slopes
104	McCollum fine sandy loam, gravelly substratum, 0 to 2 percent slopes
108	McDonald silty clay loam, 0 to 2 percent slopes
116	Mollman gravelly loam, 0 to 4 percent slopes
126	Ninepipe silt loam, 0 to 2 percent slopes
156	Selon fine sandy loam, 0 to 2 percent slopes
157	Selon fine sandy loam, 2 to 4 percent slopes
158	Selon fine sandy loam, 4 to 8 percent slopes
165	Truscreek silt loam, 0 to 2 percent slopes

Range

Approximately 150,000 acres or 20 percent of the survey area support rangeland vegetation. Additionally, 157,000 acres or about 21 percent of the area support forest land understory vegetation suitable for livestock grazing. Cow/calf operations are the major type of livestock enterprise, constituting about 60 percent of farm income. Some operations are cow/calf/yearling enterprises. A few units have dairy operations, or include sheep or hog production in their operations.

The average size of farm units is approximately 650 acres. About 37 percent of these are under 50 acres in size, 48 percent are between 50 and 500 acres, and 11 percent are between 500 and 2,000 acres. Only 4 percent of the farm operations exceed 2,000 acres. Approximately 58 percent of the farm operators in the survey area are full-time farmers.

Most grazing is on native range. The range is used primarily for grazing by domestic livestock; however, it also is used as wildlife habitat, recreational areas, and watershed and has esthetic value.

In areas that have similar climate and topography, differences in the kind and amount of vegetation produced on range are closely related to the kind of soil. Effective management is based on the relationship between the soils and vegetation and water.

Range is defined as land on which the native vegetation (the climax, or natural potential, plant community) is predominantly grasses, grasslike plants, forbs, and shrubs suitable for grazing and browsing. Range includes natural grasslands, savannas, many wetlands, some deserts, tundra, and certain shrub and forb communities. Range receives no regular or frequent cultural treatment. The composition and production of the plant community are determined by soil, climate, topography, overstory canopy, and grazing management.

Grazed forest land is defined as land on which the understory includes, as an integral part of the forest plant community, plants that can be grazed without significant impairment of other forest values.

Native pasture is defined as land on which the potential (climax) vegetation is forest but which is used and managed primarily for the production of native forage plants. Native pasture includes cutover forest land and forest land that has been cleared and is managed for native or naturalized forage plants.

The table "Rangeland Productivity and Characteristic Plant Communities" at the end of this section shows, for each listed soil, the range site; the total annual production of vegetation in favorable, normal, and unfavorable years; the characteristic vegetation; and the average percentage of each species. Only those soils that are used as rangeland or are suited to use as rangeland are listed. Explanation of the column headings in this table follows.

Range site is a distinctive kind of rangeland that produces a characteristic natural plant community that differs from natural plant communities on other range sites in kind, amount, and proportion of range plants.

Many different range sites are in the survey area. Over time, the combination of plants best suited to a particular soil and climate has become established. If the soil is not excessively disturbed, this group of plants is the natural plant community for the site. Natural plant communities are not static but vary slightly from year to year and place to place.

The relationship between soils and vegetation was ascertained during this survey; thus, range sites generally can be determined directly from the soil map. Soil properties that affect moisture supply and plant nutrients have the greatest influence on the productivity of range plants. Soil reaction, salt content, and a seasonal high water table are also important. The "Field Office Technical Guide," which is available at local offices of the Natural Resources Conservation Service, can provide specific information about range sites.

Total production is the amount of vegetation that can be expected to grow annually on well managed range that is supporting the potential natural plant community. It includes all vegetation, whether or not it is palatable to grazing animals. It includes the current year's growth of leaves, twigs, and fruit of woody plants. It does not include the increase in stem diameter of trees and shrubs. It is expressed in pounds per acre of air-dry vegetation for favorable, normal, and unfavorable years. In a favorable year, the amount and distribution of precipitation and the temperatures make growing conditions substantially better than average. In a normal year, growing conditions are about average. In an unfavorable year, growing conditions are well below average, generally because of low available soil moisture.

Dry weight is the total annual yield per acre of air-dry vegetation. Yields are adjusted to a common percent of air-dry moisture content. The relationship of green weight to air-dry weight varies according to such factors as exposure, amount of shade, recent rains, and unseasonable dry periods.

Characteristic vegetation consists of the grasses, forbs, and shrubs that make up most of the potential natural plant community on each soil. The plants are listed by common name. Under *composition*, the expected percentage of the total annual production is given for each species making up the characteristic vegetation. The amount that can be used as forage depends on the kinds of grazing animals and on the grazing season.

Range Condition

Range condition is based on a comparison of the present plant community with the potential natural plant community on a particular range site. The more closely the existing community resembles the natural community, the better the range condition.

Abnormal disturbances that change the natural plant community include repeated overuse by livestock, excessive burning, erosion, and plowing. Grazing animals select the most palatable plants. These plants will eventually die if they are continually grazed. A very severe disturbance can completely destroy the natural community. Under these conditions, the less desirable plants, such as annuals and weedlike plants, can invade. If the plant community has not deteriorated significantly, it eventually can return to dominantly natural plants if proper grazing management is applied.

Four range condition classes are used to show the degree of deterioration of the natural plant community.

An area of rangeland is in *excellent condition* if more than 75 percent of the present plant community is the same as the natural plant community. It is in *good condition* if the natural plants make up 51 to 75 percent of the present plant community, in *fair condition* if those plants make up 26 to 50 percent, and in *poor condition* if they make up less than 25 percent.

Knowledge of the range site and condition is necessary as a basis for planning and applying the management needed to maintain or improve the desired plant community for selected uses. Such information is needed to determine management objectives, proper grazing systems and stocking rates, suitable wildlife management practices, the potential for recreational uses, and the condition of watersheds.

Rangeland Management

Rangeland management requires a knowledge of the kinds of soil and of the potential natural plant community. It also requires an evaluation of the present range condition.

The objective in range management is to control grazing so that the plants growing on a site are about the same in kind and amount as the potential natural plant community for that site. Such management generally results in the optimum production of vegetation, reduction of less desirable species, conservation of water, and control of erosion. Sometimes, however, a range condition somewhat below the potential meets grazing needs, provides wildlife habitat, and protects soil and water resources.

Grazing management is the most important part of any rangeland management program. Proper grazing use, timely deferment of grazing, and planned rotation grazing systems are key practices. The experience of ranchers and research have shown that if no more than one-half of the current year's growth is grazed, a plant community in good or excellent condition can be maintained and one in fair condition can be improved. The remaining one-half enables plants to make and store food for regrowth and root development. As a result, the desirable plants remain healthy and are not replaced by less desirable grasses and weeds. Also, the plant cover protects the soil from water erosion and soil

blowing, improves tilth, increases the rate of water infiltration, and helps to control runoff.

Certain practices commonly are needed to obtain a uniform distribution of grazing. These include developing livestock watering facilities, fencing, properly locating salt and mineral supplements, constructing livestock trails in steeply sloping areas, and riding or herding.

Various kinds of grazing systems can be used in range management. No single grazing system is best under all conditions. The grazing system should increase the quantity and improve the quality of the range vegetation, should meet the needs of the individual operator, and should be designed according to the topography, the type of grazing animals, and the resource management objectives.

Special improvement practices are needed in areas where management practices do not achieve the desired results or where recovery is too slow under forage management alone. These include range seeding, brush management, water spreading, prescribed burning, and mechanical treatment.

Some soils are suited to mechanical treatment for range improvement. On other soils, however, only proper grazing management can improve the range. Many soils in capability classes 1 through 4 are suited to such practices as seeding, mechanical brush and weed control, and water spreading. Those in capability classes 7 and 8, however, are not suitable. Many soils in capability classes 1 through 4 are suited to tillage for seedbed preparation before native or introduced forage plant species are seeded. Soils in capability class 6 may be suited to limited surface disturbance, such as scarification, for the purpose of seeding and as a means of increasing the rate of water infiltration for seed germination.

Where feasible, mechanical renovation practices, such as shallow chiseling, can help to speed recovery of the desired plants. These practices open up the surface and thus allow the absorption of more moisture and production of the more desirable plants. Mechanical renovation, brush management, and timely deferment of grazing allow recovery of the desired plants.

Seeding may be needed in areas where the less desirable plants are dominant. A clean, firm seedbed should be prepared, suitable species should be selected for seeding, and rest periods should be long enough to allow the new plants to become established.

Special improvement practices can be effective only if the management system helps to keep the desirable plants healthy.

Forest land Understory Vegetation

Understory vegetation consists of grasses, forbs, shrubs, and other plants. If well managed, some forest land can produce enough understory vegetation to support grazing of livestock or wildlife, or both, without damage to the trees.

The quantity and quality of understory vegetation vary with the kind of soil, the age and kind of trees in the canopy, the density of the canopy, and the depth and condition of the litter. The density of the canopy determines the amount of light that understory plants receive.

The table "Forest land Understory Vegetation and Habitat Types" at the end of this section shows, for each soil suitable for forest land, the potential for producing understory vegetation. The *total production* of understory vegetation includes the herbaceous plants and the leaves, twigs, and fruit of woody plants up to a height of 4.5 feet. It is expressed in pounds per acre of air-dry vegetation in favorable, normal, and unfavorable years. In a favorable year, soil moisture is above average during the optimal part of the growing season; in a normal year, soil moisture is average; and in an unfavorable year, it is below average.

The table also lists the common names of the *characteristic vegetation* on each soil and the *composition*, by percentage of air-dry weight, of each kind of plant. The table shows the kind and percentage of understory plants expected under a canopy density that is most nearly typical of forest land in which the production of wood crops is highest.

The *representative habitat type* is an aggregation of all land areas capable of producing similar climax plant communities. The representative habitat type or phase displayed in this table is documented in the Pfister system (14).

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES

(Only the soils that support rangeland vegetation suitable for grazing are listed. Ppt means precipitation)

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
6:					
Belton	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,700	Rough fescue	50
		Normal	1,400	Bluebunch wheatgrass	26
		Unfavorable	1,000	Other perennial forbs	7
				Idaho fescue	6
				Basin wildrye	5
				Prairie junegrass	2
				Other shrubs	2
				Western wheatgrass	2
7:					
Belton	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,700	Rough fescue	50
		Normal	1,400	Bluebunch wheatgrass	26
		Unfavorable	1,000	Other perennial forbs	7
				Idaho fescue	6
				Basin wildrye	5
				Prairie junegrass	2
				Other shrubs	2
				Western wheatgrass	2
10:					
Bigarm	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,800	Bluebunch wheatgrass	65
		Normal	1,400	Rough fescue	10
		Unfavorable	1,000	Idaho fescue	5
				Arrowleaf balsamroot	5
				Prairie junegrass	3
				Lupine	3
				Sandberg bluegrass	2
11:					
Bigarm	Silty, cool, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	2,000	Rough fescue	65
		Normal	1,600	Bluebunch wheatgrass	10
		Unfavorable	1,200	Idaho fescue	5
				Prairie junegrass	5
				Lupine	2
				Rose	2
				Columbia needlegrass	2
				Other shrubs	2
12:					
Bigarm	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,800	Bluebunch wheatgrass	60
		Normal	1,400	Rough fescue	10
		Unfavorable	1,000	Idaho fescue	5
				Arrowleaf balsamroot	5
				Prairie junegrass	3
				Other shrubs	3
				Sandberg bluegrass	2
13:					
Bigarm	Silty, cool, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	2,000	Rough fescue	65
		Normal	1,600	Bluebunch wheatgrass	10
		Unfavorable	1,200	Idaho fescue	5
				Prairie junegrass	5
				Lupine	2
				Rose	2
				Columbia needlegrass	2
				Other shrubs	2
Hogsby	Shallow, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,500	Bluebunch wheatgrass	30
		Normal	1,200	Rough fescue	25
		Unfavorable	800	Idaho fescue	10
				Other perennial forbs	10
				Columbia needlegrass	10
				Other perennial grasses	10
				Other shrubs	5
14:					
Bigarm	Silty, cool, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	2,000	Rough fescue	65
		Normal	1,600	Bluebunch wheatgrass	10
		Unfavorable	1,200	Idaho fescue	5
				Prairie junegrass	3
				Other shrubs	3
				Rose	2
				Lupine	2
				Columbia needlegrass	2

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
15:					
Bigarm	Silty, droughty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,700	Bluebunch wheatgrass	60
		Normal	1,300	Rough fescue	10
		Unfavorable	900	Idaho fescue	5
				Arrowleaf balsamroot	5
				Prairie junegrass	3
				Other shrubs	3
				Sandberg bluegrass	2
Hogsby	Shallow, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,500	Bluebunch wheatgrass	30
		Normal	1,200	Rough fescue	25
		Unfavorable	800	Idaho fescue	10
				Other perennial forbs	10
				Columbia needlegrass	10
				Other perennial grasses	10
				Other shrubs	5
16:					
Bigarm	Silty, droughty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,700	Bluebunch wheatgrass	60
		Normal	1,300	Rough fescue	10
		Unfavorable	900	Idaho fescue	5
				Arrowleaf balsamroot	5
				Prairie junegrass	3
				Other shrubs	3
				Sandberg bluegrass	2
17:					
Bohnly	Wet meadow, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	5,000	Reedgrass	30
		Normal	4,000	Tufted hairgrass	15
		Unfavorable	3,500	Sedge	10
				Mannagrass	10
				Bearded wheatgrass	5
				Other perennial grasses	5
				Willow	5
				Other perennial forbs	5
				Other shrubs	5
				Alder	3
				Hawthorn	2
18:					
Bolack	Wet meadow, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	5,000	Reedgrass	30
		Normal	4,500	Tufted hairgrass	15
		Unfavorable	3,500	Sedge	10
				Mannagrass	10
				Bearded wheatgrass	5
				Other perennial grasses	5
				Willow	5
				Other perennial forbs	5
				Other shrubs	5
				Alder	3
				Hawthorn	2
20:					
Bowlake	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,800	Bluebunch wheatgrass	53
		Normal	1,400	Rough fescue	25
		Unfavorable	1,000	Idaho fescue	5
				Columbia needlegrass	5
				Other perennial forbs	5
				Other perennial grasses	3
				Prairie junegrass	2
				Other shrubs	2
21:					
Bowlake	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,800	Bluebunch wheatgrass	53
		Normal	1,400	Rough fescue	25
		Unfavorable	1,000	Idaho fescue	5
				Columbia needlegrass	5
				Other perennial forbs	5
				Other perennial grasses	3
				Prairie junegrass	2
				Other shrubs	2

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
21 (con.):					
Minesinger------	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,800	Bluebunch wheatgrass----------	50
		Normal	1,400	Rough fescue----------	30
		Unfavorable	1,000	Idaho fescue----------	7
				Other shrubs----------	4
				Other perennial forbs----------	4
				Prairie junegrass----------	3
				Prairiesmoke----------	2
				Lupine----------	2
				Sandberg bluegrass----------	1
22:					
Colake----------	Wet meadow, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	5,000	Reedgrass----------	30
		Normal	4,500	Tufted hairgrass----------	15
		Unfavorable	3,500	Other perennial grasses---------	15
				Mannagrass----------	10
				Other shrubs----------	10
				Other perennial forbs----------	10
				Sedge----------	10
23:					
Colake----------	Subirrigated, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	4,000	Reedgrass----------	30
		Normal	3,500	Bearded wheatgrass----------	15
		Unfavorable	2,000	Other perennial grasses---------	15
				Sedge----------	10
				Other shrubs----------	10
				Other perennial forbs----------	10
				Slender wheatgrass----------	10
24:					
Colake----------	Wet meadow, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	5,000	Reedgrass----------	30
		Normal	4,500	Tufted hairgrass----------	15
		Unfavorable	3,500	Other perennial grasses---------	15
				Mannagrass----------	10
				Other shrubs----------	10
				Other perennial forbs----------	10
				Sedge----------	10
Sacheen---------	Sandy, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,700	Rough fescue----------	30
		Normal	1,200	Bluebunch wheatgrass----------	20
		Unfavorable	1,000	Indian ricegrass----------	10
				Idaho fescue----------	5
				Other perennial grasses---------	5
				Columbia needlegrass----------	5
				Bitterbrush----------	5
				Needleandthread----------	4
				Threadleaf sedge----------	3
				Other perennial forbs----------	3
				Common snowberry----------	3
				Rose----------	2
				Prairie junegrass----------	2
38:					
Doker----------	Subirrigated, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	4,000	Reedgrass----------	30
		Normal	3,500	Mannagrass----------	15
		Unfavorable	2,500	Tufted hairgrass----------	15
				Sedge----------	10
				Bearded wheatgrass----------	10
				Other perennial forbs----------	5
				Other shrubs----------	5
				Other perennial grasses---------	5
				Willow----------	5
39:					
Dryfork---------	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,400	Bluebunch wheatgrass----------	75
		Normal	1,100	Other perennial grasses---------	5
		Unfavorable	900	Prairie junegrass----------	3
				Milkvetch----------	3
				Rubber rabbitbrush----------	2
				Sandberg bluegrass----------	2
40:					
Dryfork---------	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,400	Bluebunch wheatgrass----------	75
		Normal	1,100	Other perennial grasses---------	5
		Unfavorable	900	Prairie junegrass----------	3
				Milkvetch----------	3
				Rubber rabbitbrush----------	2
				Sandberg bluegrass----------	2

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
40 (con.):					
Selow	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,400	Bluebunch wheatgrass	80
		Normal	1,100	Prairie junegrass	3
		Unfavorable	900	Milkvetch	2
				Big sagebrush	2
				Columbia needlegrass	2
				Rubber rabbitbrush	1
				Sandberg bluegrass	1
41:					
Dryfork	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,400	Bluebunch wheatgrass	75
		Normal	1,100	Other perennial grasses	5
		Unfavorable	900	Prairie junegrass	3
				Milkvetch	3
				Rubber rabbitbrush	2
				Sandberg bluegrass	2
Selow	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,400	Bluebunch wheatgrass	80
		Normal	1,100	Prairie junegrass	3
		Unfavorable	900	Milkvetch	2
				Big sagebrush	2
				Columbia needlegrass	2
				Rubber rabbitbrush	1
				Sandberg bluegrass	1
47:					
Esteslake	Saline lowland, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	2,000	Basin wildrye	55
		Normal	1,500	Nuttall alkaligrass	15
		Unfavorable	1,000	Alkali bluegrass	10
				Western wheatgrass	5
				Other perennial forbs	5
				Inland saltgrass	5
				Slender wheatgrass	2
62:					
Gardencreek	Silty, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,600	Bluebunch wheatgrass	40
		Normal	1,200	Western wheatgrass	10
		Unfavorable	900	Other perennial grasses	10
				Other perennial forbs	10
				Fringed sagewort	5
				Hawthorn	5
				Common snowberry	5
				Prairie junegrass	5
				Rose	5
				Big sagebrush	5
				western yarrow	3
71:					
Hogsby	Shallow, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,500	Bluebunch wheatgrass	30
		Normal	1,200	Rough fescue	25
		Unfavorable	800	Idaho fescue	10
				Other perennial forbs	10
				Columbia needlegrass	10
				Other perennial grasses	10
				Other shrubs	5
72:					
Hogsby	Shallow, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,500	Bluebunch wheatgrass	30
		Normal	1,200	Rough fescue	25
		Unfavorable	800	Idaho fescue	10
				Other perennial forbs	10
				Columbia needlegrass	10
				Other perennial grasses	10
				Other shrubs	5
79:					
Irvine	Silty, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,200	Bluebunch wheatgrass	90
		Normal	1,000	Other perennial forbs	4
		Unfavorable	600	Prairie junegrass	2
				Other perennial grasses	2
				Milkvetch	1
				Lomatium	1

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
80:					
Irvine	Thin clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,200	Bluebunch wheatgrass	90
		Normal	1,000	Other perennial forbs	4
		Unfavorable	600	Prairie junegrass	2
				Other perennial grasses	2
				Milkvetch	1
				Lomatium	1
81:					
Jocko	Shallow to gravel, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,600	Bluebunch wheatgrass	40
		Normal	1,200	Rough fescue	30
		Unfavorable	800	Other perennial forbs	8
				Idaho fescue	5
				Other perennial grasses	3
				Prairie junegrass	2
				Needleandthread	2
				Pussytoes	2
				Threadleaf sedge	1
82:					
Jocko	Shallow to gravel, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,600	Bluebunch wheatgrass	40
		Normal	1,200	Rough fescue	30
		Unfavorable	800	Other perennial forbs	8
				Idaho fescue	5
				Other perennial grasses	3
				Prairie junegrass	2
				Needleandthread	2
				Pussytoes	2
				Threadleaf sedge	1
83:					
Jocko	Shallow to gravel, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,600	Bluebunch wheatgrass	40
		Normal	1,200	Rough fescue	30
		Unfavorable	800	Threadleaf sedge	5
				Idaho fescue	5
				Lupine	5
				Needleandthread	5
				Rose	5
84:					
Kerl	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,900	Rough fescue	44
		Normal	1,500	Bluebunch wheatgrass	30
		Unfavorable	1,000	Other perennial forbs	10
				Idaho fescue	7
				Other perennial grasses	3
				Prairie junegrass	2
				Columbia needlegrass	2
				Other shrubs	2
85:					
Kerl	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,900	Rough fescue	44
		Normal	1,500	Bluebunch wheatgrass	30
		Unfavorable	1,000	Other perennial forbs	10
				Idaho fescue	7
				Other perennial grasses	3
				Prairie junegrass	2
				Columbia needlegrass	2
				Other shrubs	2
86:					
Kerrdam	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,500	Bluebunch wheatgrass	65
		Normal	1,200	Needleandthread	10
		Unfavorable	900	Western wheatgrass	5
				Prairie junegrass	5
				Sedge	5
				Other perennial forbs	5
				Other shrubs	3
				Sandberg bluegrass	2
87:					
Kerrdam	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,500	Bluebunch wheatgrass	65
		Normal	1,200	Needleandthread	10
		Unfavorable	900	Western wheatgrass	5
				Prairie junegrass	5
				Sedge	5
				Other perennial forbs	5
				Other shrubs	3
				Sandberg bluegrass	2

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
88:					
Kerrdam	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,600	Bluebunch wheatgrass	65
		Normal	1,300	Needleandthread	10
		Unfavorable	1,000	Western wheatgrass	5
				Prairie junegrass	5
				Sedge	5
				Other perennial forbs	5
				Other shrubs	3
				Sandberg bluegrass	2
Vincom	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,300	Bluebunch wheatgrass	80
		Normal	1,000	Needleandthread	5
		Unfavorable	800	Other perennial forbs	5
				Sedge	2
				Western wheatgrass	2
				Lomatium	1
				Milkvetch	1
89:					
Kerrdam	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,600	Bluebunch wheatgrass	65
		Normal	1,300	Needleandthread	10
		Unfavorable	1,000	Western wheatgrass	5
				Prairie junegrass	5
				Sedge	5
				Other perennial forbs	5
				Other shrubs	3
				Sandberg bluegrass	2
Vincom	Thin silty, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,200	Bluebunch wheatgrass	80
		Normal	900	Needleandthread	5
		Unfavorable	600	Other perennial forbs	5
				Sedge	2
				Western wheatgrass	2
				Lomatium	1
				Milkvetch	1
94:					
Lonepine	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,500	Bluebunch wheatgrass	85
		Normal	1,200	Other perennial forbs	4
		Unfavorable	900	Needleandthread	2
				Other perennial grasses	2
				Prairie junegrass	2
				Sandberg bluegrass	1
				Milkvetch	1
				Other shrubs	1
95:					
Lonepine	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,500	Bluebunch wheatgrass	85
		Normal	1,200	Other perennial forbs	4
		Unfavorable	900	Needleandthread	2
				Other perennial grasses	2
				Prairie junegrass	2
				Sandberg bluegrass	1
				Milkvetch	1
				Other shrubs	1
96:					
Lonepine	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,500	Bluebunch wheatgrass	85
		Normal	1,200	Other perennial forbs	4
		Unfavorable	900	Needleandthread	2
				Other perennial grasses	2
				Prairie junegrass	2
				Sandberg bluegrass	1
				Milkvetch	1
				Other shrubs	1
97:					
Lonepine	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,500	Bluebunch wheatgrass	85
		Normal	1,200	Other perennial forbs	4
		Unfavorable	900	Needleandthread	2
				Other perennial grasses	2
				Prairie junegrass	2
				Sandberg bluegrass	1
				Milkvetch	1
				Other shrubs	1

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
97 (con.):					
Vincom	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,300	Bluebunch wheatgrass	80
		Normal	1,000	Needleandthread	5
		Unfavorable	800	Other perennial forbs	5
				Sedge	2
				Western wheatgrass	2
				Lomatium	1
				Milkvetch	1
98:					
Lonepine	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,500	Bluebunch wheatgrass	85
		Normal	1,200	Other perennial forbs	4
		Unfavorable	900	Needleandthread	2
				Other perennial grasses	2
				Prairie junegrass	2
				Sandberg bluegrass	1
				Milkvetch	1
				Other shrubs	1
Vincom	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,300	Bluebunch wheatgrass	80
		Normal	1,000	Needleandthread	5
		Unfavorable	800	Other perennial forbs	5
				Sedge	2
				Western wheatgrass	2
				Lomatium	1
				Milkvetch	1
99:					
Marklepass	Saline lowland, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	2,000	Basin wildrye	55
		Normal	1,500	Nuttall alkaligrass	15
		Unfavorable	1,100	Alkali bluegrass	10
				Inland saltgrass	5
				Other perennial forbs	5
				Alkali sacaton	5
				Western wheatgrass	5
100:					
Marklepass	Saline lowland, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,700	Basin wildrye	55
		Normal	1,500	Nuttall alkaligrass	15
		Unfavorable	1,100	Alkali bluegrass	10
				Inland saltgrass	5
				Other perennial forbs	5
				Alkali sacaton	5
				Western wheatgrass	5
106:					
McDonald	Silty, cool, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	2,400	Rough fescue	70
		Normal	1,900	Idaho fescue	10
		Unfavorable	1,500	Bluebunch wheatgrass	10
				Other perennial forbs	10
				Other perennial grasses	5
				Other shrubs	5
				Columbia needlegrass	5
107:					
McDonald	Silty, cool, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	2,400	Rough fescue	70
		Normal	1,900	Idaho fescue	10
		Unfavorable	1,500	Bluebunch wheatgrass	10
				Other perennial forbs	10
				Other perennial grasses	5
				Other shrubs	5
				Columbia needlegrass	5
109:					
Minesinger	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,800	Bluebunch wheatgrass	50
		Normal	1,400	Rough fescue	30
		Unfavorable	1,000	Idaho fescue	7
				Other shrubs	4
				Other perennial forbs	4
				Prairie junegrass	3
				Prairiesmoke	2
				Lupine	2
				Sandberg bluegrass	1

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
110:					
Minesinger------	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,800	Bluebunch wheatgrass----------	50
		Normal	1,400	Rough fescue----------	30
		Unfavorable	1,000	Idaho fescue----------	7
				Other shrubs----------	4
				Other perennial forbs----------	4
				Prairie junegrass----------	3
				Prairiesmoke----------	2
				Lupine----------	2
				Sandberg bluegrass----------	1
Walstead--------	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	2,000	Rough fescue----------	55
		Normal	1,500	Other perennial forbs----------	10
		Unfavorable	1,000	Bluebunch wheatgrass----------	10
				Other perennial grasses---------	5
				Idaho fescue----------	5
				Other shrubs----------	5
				Richardson needlegrass----------	5
				Columbia needlegrass----------	5
115:					
Moiese----------	Shallow to gravel, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,200	Bluebunch wheatgrass----------	75
		Normal	900	Other perennial forbs----------	7
		Unfavorable	500	Other perennial grasses---------	5
				Threadleaf sedge----------	3
				Needleandthread----------	3
				Western wheatgrass----------	2
				Prairie junegrass----------	2
				Other shrubs----------	2
				Sandberg bluegrass----------	1
120:					
Niarada---------	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,700	Bluebunch wheatgrass----------	45
		Normal	1,400	Rough fescue----------	25
		Unfavorable	1,000	Other perennial forbs----------	8
				Other perennial grasses---------	5
				Idaho fescue----------	5
				Sedge----------	2
				Other shrubs----------	2
121:					
Niarada---------	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,700	Bluebunch wheatgrass----------	45
		Normal	1,400	Rough fescue----------	25
		Unfavorable	1,000	Other perennial forbs----------	8
				Other perennial grasses---------	5
				Idaho fescue----------	5
				Sedge----------	2
				Other shrubs----------	2
122:					
Niarada---------	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,700	Bluebunch wheatgrass----------	45
		Normal	1,400	Rough fescue----------	25
		Unfavorable	1,000	Other perennial forbs----------	8
				Other perennial grasses---------	5
				Idaho fescue----------	5
				Sedge----------	2
				Other shrubs----------	2
123:					
Niarada---------	Silty, cool, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,800	Rough fescue----------	50
		Normal	1,500	Bluebunch wheatgrass----------	15
		Unfavorable	1,100	Other perennial forbs----------	10
				Other perennial grasses---------	10
				Idaho fescue----------	8
				Other shrubs----------	3
				Sedge----------	1
124:					
Niarada---------	Silty, cool, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,800	Rough fescue----------	50
		Normal	1,500	Bluebunch wheatgrass----------	15
		Unfavorable	1,100	Other perennial forbs----------	10
				Other perennial grasses---------	10
				Idaho fescue----------	8
				Other shrubs----------	3
				Sedge----------	1

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
125:					
Niarada	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,700	Bluebunch wheatgrass	45
		Normal	1,400	Rough fescue	25
		Unfavorable	1,000	Other perennial forbs	8
				Other perennial grasses	5
				Idaho fescue	5
				Sedge	2
				Other shrubs	2
Kerl	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,900	Rough fescue	44
		Normal	1,500	Bluebunch wheatgrass	30
		Unfavorable	1,000	Other perennial forbs	10
				Idaho fescue	7
				Other perennial grasses	3
				Prairie junegrass	2
				Columbia needlegrass	2
				Other shrubs	2
136:					
Post	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,900	Rough fescue	45
		Normal	1,500	Bluebunch wheatgrass	20
		Unfavorable	1,000	Idaho fescue	8
				Other perennial forbs	5
				Western wheatgrass	5
				Other perennial grasses	5
				Columbia needlegrass	3
				Prairie junegrass	3
				Sedge	2
				Other shrubs	2
				Sandberg bluegrass	2
Ronan	Clay pan, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,300	Bluebunch wheatgrass	75
		Normal	1,100	Rough fescue	5
		Unfavorable	800	Western wheatgrass	5
				Idaho fescue	5
				Columbia needlegrass	5
				Prairie junegrass	2
				Other shrubs	2
				Fourwing saltbush	1
137:					
Post	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,900	Rough fescue	45
		Normal	1,500	Bluebunch wheatgrass	20
		Unfavorable	1,000	Idaho fescue	8
				Other perennial forbs	5
				Western wheatgrass	5
				Other perennial grasses	5
				Columbia needlegrass	3
				Prairie junegrass	3
				Sedge	2
				Other shrubs	2
				Sandberg bluegrass	2
Ronan	Clay pan, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,300	Bluebunch wheatgrass	75
		Normal	1,100	Prairie junegrass	5
		Unfavorable	800	Western wheatgrass	5
				Idaho fescue	5
				Columbia needlegrass	5
				Rough fescue	5
				Fourwing saltbush	1
				Other shrubs	1
144:					
Round Butte	Silty, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,200	Bluebunch wheatgrass	85
		Normal	1,000	Other perennial forbs	5
		Unfavorable	700	Western wheatgrass	3
				Prairie junegrass	2
				Green needlegrass	2
				Milkvetch	2
				Sandberg bluegrass	1

RANGELAND PRODUCTIVITY AND CHARACTERISTIC PLANT COMMUNITIES--Continued

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
145:					
Round Butte-----	Silty, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,200	Bluebunch wheatgrass----------	85
		Normal	1,000	Other perennial forbs----------	5
		Unfavorable	700	Western wheatgrass----------	3
				Prairie junegrass----------	2
				Green needlegrass----------	2
				Milkvetch----------	2
				Sandberg bluegrass----------	1
146:					
Round Butte-----	Silty, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,200	Bluebunch wheatgrass----------	85
		Normal	1,000	Other perennial forbs----------	5
		Unfavorable	700	Western wheatgrass----------	3
				Prairie junegrass----------	2
				Green needlegrass----------	2
				Milkvetch----------	2
				Sandberg bluegrass----------	1
147:					
Round Butte-----	Silty, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,200	Bluebunch wheatgrass----------	85
		Normal	1,000	Other perennial forbs----------	5
		Unfavorable	700	Western wheatgrass----------	3
				Prairie junegrass----------	2
				Green needlegrass----------	2
				Milkvetch----------	2
				Sandberg bluegrass----------	1
148:					
Round Butte-----	Silty, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,200	Bluebunch wheatgrass----------	85
		Normal	1,000	Other perennial forbs----------	5
		Unfavorable	700	Western wheatgrass----------	3
				Prairie junegrass----------	2
				Green needlegrass----------	2
				Milkvetch----------	2
				Sandberg bluegrass----------	1
Irvine----------	Silty, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,200	Bluebunch wheatgrass----------	90
		Normal	1,000	Other perennial forbs----------	4
		Unfavorable	600	Prairie junegrass----------	2
				Other perennial grasses---------	2
				Milkvetch----------	1
				Lomatium----------	1
149:					
Round Butte-----	Silty, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,200	Bluebunch wheatgrass----------	85
		Normal	1,000	Other perennial forbs----------	5
		Unfavorable	700	Western wheatgrass----------	3
				Prairie junegrass----------	2
				Green needlegrass----------	2
				Milkvetch----------	2
				Sandberg bluegrass----------	1
Irvine----------	Silty, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,200	Bluebunch wheatgrass----------	90
		Normal	1,000	Other perennial forbs----------	4
		Unfavorable	600	Prairie junegrass----------	2
				Other perennial grasses---------	2
				Milkvetch----------	1
				Lomatium----------	1
170:					
Vincom----------	Thin silty, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,200	Bluebunch wheatgrass----------	80
		Normal	1,000	Needleandthread----------	5
		Unfavorable	600	Other perennial forbs----------	5
				Sedge----------	2
				Western wheatgrass----------	2
				Lomatium----------	1
				Milkvetch----------	1

Map symbol and soil name	Range site	Total production		Characteristic vegetation	Composition
		Kind of year	Dry weight		
			Lb/acre		Pct
171:					
Vincom----------	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,300	Bluebunch wheatgrass----------	80
		Normal	1,000	Needleandthread----------	5
		Unfavorable	800	Other perennial forbs----------	5
				Sedge----------	2
				Western wheatgrass----------	2
				Lomatium----------	1
				Milkvetch----------	1
Lonepine--------	Clayey, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	1,500	Bluebunch wheatgrass----------	85
		Normal	1,200	Other perennial forbs----------	4
		Unfavorable	900	Needleandthread----------	2
				Other perennial grasses---------	2
				Prairie junegrass----------	2
				Sandberg bluegrass----------	1
				Milkvetch----------	1
				Other shrubs----------	1
177:					
Walstead--------	Silty, 15 to 19 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	2,000	Rough fescue----------	55
		Normal	1,500	Other perennial forbs----------	10
		Unfavorable	1,000	Bluebunch wheatgrass----------	10
				Other perennial grasses---------	5
				Idaho fescue----------	5
				Other shrubs----------	5
				Richardson needlegrass----------	5
				Columbia needlegrass----------	5
178:					
Whitearth-------	Saline lowland, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	2,000	Basin wildrye----------	60
		Normal	1,300	Nuttall alkaligrass----------	15
		Unfavorable	1,000	Inland saltgrass----------	5
				Other perennial forbs----------	5
				Western wheatgrass----------	5
				Other perennial grasses---------	5
Esteslake-------	Saline lowland, 10 to 14 inch Ppt zone, Northern Rocky Mountain Valleys, west	Favorable	2,000	Basin wildrye----------	55
		Normal	1,500	Nuttall alkaligrass----------	15
		Unfavorable	1,000	Alkali bluegrass----------	10
				Western wheatgrass----------	5
				Other perennial forbs----------	5
				Inland saltgrass----------	5
				Slender wheatgrass----------	2

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES

(Absence of an entry indicates that data were not available)

Map symbol and soil name	Total production		Characteristic vegetation	Composition	Representative habitat type or phase
	Kind of year	Dry weight			
		Lb/acre		Pct	
1: Aeric Haplaquepts.					
3: Bata	Favorable	800	Pinegrass	25	Subalpine fir/queencup beadlily, subalpine fir/blue huckleberry
	Normal	600	Blue huckleberry	20	
	Unfavorable	400	Common beargrass	20	
			Arnica	10	
			Grouse whortleberry	10	
			Myrtle pachistima	5	
			Rusty menziesia	5	
			Twinflower	2	
			Queencup beadlily	1	
			Scouler willow	1	
4: Bata	Favorable	800	Pinegrass	25	Subalpine fir/queencup beadlily, subalpine fir/blue huckleberry
	Normal	600	Blue huckleberry	20	
	Unfavorable	400	Common beargrass	20	
			Arnica	10	
			Grouse whortleberry	10	
			Myrtle pachistima	5	
			Rusty menziesia	5	
			Twinflower	2	
			Queencup beadlily	1	
			Scouler willow	1	
25: Connah	Favorable	600	Common snowberry	30	Douglas-fir/snowberry, Douglas-fir/pinegrass
	Normal	550	Pinegrass	10	
	Unfavorable	500	Unnamed perennial forbs	10	
			Elk sedge	5	
			Heartleaf arnica	5	
			Saskatoon serviceberry	5	
			Unnamed perennial grasses	5	
			Unnamed shrubs	5	
			White spirea	5	
			Common juniper	2	
			Feather Solomons seal	2	
			Kinnikinnick	2	
			Oregongrape	2	
			western meadowrue	2	
26: Connah	Favorable	600	Common snowberry	30	Douglas-fir/snowberry, Douglas-fir/pinegrass
	Normal	550	Pinegrass	10	
	Unfavorable	500	Unnamed perennial forbs	10	
			Elk sedge	5	
			Heartleaf arnica	5	
			Saskatoon serviceberry	5	
			Unnamed perennial grasses	5	
			Unnamed shrubs	5	
			White spirea	5	
			Common juniper	2	
			Feather Solomons seal	2	
			Kinnikinnick	2	
			Oregongrape	2	
			western meadowrue	2	
27: Connah	Favorable	600	Common snowberry	30	Douglas-fir/snowberry, Douglas-fir/pinegrass
	Normal	550	Pinegrass	10	
	Unfavorable	500	Unnamed perennial forbs	10	
			Elk sedge	5	
			Heartleaf arnica	5	
			Saskatoon serviceberry	5	
			Unnamed perennial grasses	5	
			Unnamed shrubs	5	
			White spirea	5	
			Common juniper	2	
			Feather Solomons seal	2	
			Kinnikinnick	2	
			Oregongrape	2	
			western meadowrue	2	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition	Representative habitat type or phase
	Kind of year	Dry weight			
		Lb/acre		Pct	
28:					
Courville--------	Favorable	800	Pinegrass----------	35	Grand fir/queencup beadlily, grand fir/twinflower
	Normal	650	Twinflower----------	15	
	Unfavorable	500	Arnica----------	10	
			Blue huckleberry----------	10	
			Common beargrass----------	5	
			Common snowberry----------	5	
			Dwarf huckleberry----------	5	
			Mallow ninebark----------	5	
			Myrtle pachistima----------	5	
			Russet buffaloberry----------	5	
			White spirea----------	5	
			Saskatoon serviceberry-------	1	
			western meadowrue----------	1	
29:					
Courville--------	Favorable	800	Pinegrass----------	35	Grand fir/queencup beadlily, grand fir/twinflower
	Normal	650	Twinflower----------	15	
	Unfavorable	500	Arnica----------	10	
			Blue huckleberry----------	10	
			Common beargrass----------	5	
			Common snowberry----------	5	
			Dwarf huckleberry----------	5	
			Mallow ninebark----------	5	
			Myrtle pachistima----------	5	
			Russet buffaloberry----------	5	
			White spirea----------	5	
			Saskatoon serviceberry-------	1	
			western meadowrue----------	1	
30:					
Courville--------	Favorable	800	Pinegrass----------	35	Grand fir/queencup beadlily, grand fir/twinflower
	Normal	650	Twinflower----------	15	
	Unfavorable	500	Arnica----------	10	
			Blue huckleberry----------	10	
			Common beargrass----------	5	
			Common snowberry----------	5	
			Dwarf huckleberry----------	5	
			Mallow ninebark----------	5	
			Myrtle pachistima----------	5	
			Russet buffaloberry----------	5	
			White spirea----------	5	
			Saskatoon serviceberry-------	1	
			western meadowrue----------	1	
31:					
Courville--------	Favorable	1,200	Pinegrass----------	25	Douglas-fir/twinflower, Douglas-fir/ninebark
	Normal	1,000	Common snowberry----------	20	
	Unfavorable	800	Elk sedge----------	10	
			Arnica----------	5	
			Dwarf huckleberry----------	5	
			Mallow ninebark----------	5	
			Saskatoon serviceberry-------	5	
			western meadowrue----------	5	
			White spirea----------	5	
			Common beargrass----------	2	
			Twinflower----------	1	
32:					
Courville--------	Favorable	1,200	Pinegrass----------	25	Douglas-fir/twinflower, Douglas-fir/ninebark
	Normal	1,000	Common snowberry----------	20	
	Unfavorable	800	Elk sedge----------	10	
			Arnica----------	5	
			Dwarf huckleberry----------	5	
			Mallow ninebark----------	5	
			Saskatoon serviceberry-------	5	
			western meadowrue----------	5	
			White spirea----------	5	
			Common beargrass----------	2	
			Twinflower----------	1	
33:					
Courville--------	Favorable	1,200	Pinegrass----------	25	Douglas-fir/twinflower, Douglas-fir/ninebark
	Normal	1,000	Common snowberry----------	20	
	Unfavorable	800	Elk sedge----------	10	
			Arnica----------	5	
			Dwarf huckleberry----------	5	
			Mallow ninebark----------	5	
			Saskatoon serviceberry-------	5	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition	Representative habitat type or phase
	Kind of year	Dry weight			
		Lb/acre		Pct	
33 (con.):					
Courville--------			western meadowrue----------	5	
			White spirea----------	5	
			Common beargrass----------	2	
			Twinflower----------	1	
34:					
Courville--------	Favorable	800	Pinegrass----------	35	Grand fir/twinflower, grand fir/queencup beadlily
	Normal	650	Twinflower----------	15	
	Unfavorable	500	Arnica----------	10	
			Blue huckleberry----------	10	
			Common beargrass----------	5	
			Common snowberry----------	5	
			Dwarf huckleberry----------	5	
			Mallow ninebark----------	5	
			Myrtle pachistima----------	5	
			Russet buffaloberry----------	5	
			White spirea----------	5	
			Saskatoon serviceberry-------	1	
			western meadowrue----------	1	
Rumblecreek------	Favorable	700	Pinegrass----------	20	Grand fir/twinflower, grand fir/queencup beadlily
	Normal	500	Blue huckleberry----------	15	
	Unfavorable	300	Common beargrass----------	15	
			Arnica----------	5	
			Common snowberry----------	5	
			Queencup beadlily----------	5	
			Twinflower----------	5	
			White spirea----------	5	
			Myrtle pachistima----------	2	
			Saskatoon serviceberry-------	2	
			Oceanspray----------	1	
			Oregongrape----------	1	
35:					
Craddock---------	Favorable	300	Grouse whortleberry----------	40	Subalpine fir/menziesia
	Normal	250	Arnica----------	10	
	Unfavorable	200	Common beargrass----------	10	
			Elk sedge----------	10	
			Pinegrass----------	10	
			Blue huckleberry----------	5	
			Rusty menziesia----------	5	
			Smooth woodrush----------	5	
			Common juniper----------	1	
			White spirea----------	1	
36:					
Craddock---------	Favorable	300	Grouse whortleberry----------	40	Subalpine fir/menziesia
	Normal	250	Arnica----------	10	
	Unfavorable	200	Common beargrass----------	10	
			Elk sedge----------	10	
			Pinegrass----------	10	
			Blue huckleberry----------	5	
			Rusty menziesia----------	5	
			Smooth woodrush----------	5	
			Common juniper----------	1	
			White spirea----------	1	
37:					
Craddock---------	Favorable	300	Grouse whortleberry----------	40	Subalpine fir/menziesia
	Normal	250	Arnica----------	10	
	Unfavorable	200	Common beargrass----------	10	
			Elk sedge----------	10	
			Pinegrass----------	10	
			Blue huckleberry----------	5	
			Rusty menziesia----------	5	
			Smooth woodrush----------	5	
			Common juniper----------	1	
			White spirea----------	1	
42:					
Dubay----------	Favorable	500	Pinegrass----------	30	Ponderosa pine/Idaho fescue, ponderosa pine/bluebunch wheatgrass, Douglas-fir/snowberry
	Normal	400	Common snowberry----------	15	
	Unfavorable	300	Elk sedge----------	10	
			Rough fescue----------	10	
			Bluebunch wheatgrass---------	5	
			Heartleaf arnica----------	5	
			Idaho fescue----------	5	
			White spirea----------	5	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition	Representative habitat type or phase
	Kind of year	Dry weight			
		Lb/acre		Pct	
43:					
Dubay	Favorable	500	Pinegrass	30	Ponderosa pine/Idaho fescue, ponderosa pine/bluebunch wheatgrass, Douglas-fir/snowberry
	Normal	400	Common snowberry	15	
	Unfavorable	300	Elk sedge	10	
			Rough fescue	10	
			Bluebunch wheatgrass	5	
			Heartleaf arnica	5	
			Idaho fescue	5	
			White spirea	5	
44:					
Eaglewing	Favorable	600	Pinegrass	20	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	550	Common snowberry	15	
	Unfavorable	500	Mallow ninebark	10	
			Elk sedge	5	
			Heartleaf arnica	5	
			Idaho fescue	5	
			Kinnikinnick	5	
			Oregongrape	5	
			White spirea	5	
			Bluebunch wheatgrass	2	
			Twinflower	1	
45:					
Eaglewing	Favorable	600	Pinegrass	20	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	550	Common snowberry	15	
	Unfavorable	500	Mallow ninebark	10	
			Elk sedge	5	
			Heartleaf arnica	5	
			Idaho fescue	5	
			Kinnikinnick	5	
			Oregongrape	5	
			White spirea	5	
			Bluebunch wheatgrass	2	
			Twinflower	1	
46:					
Eaglewing	Favorable	600	Pinegrass	20	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	550	Common snowberry	15	
	Unfavorable	500	Mallow ninebark	10	
			Elk sedge	5	
			Heartleaf arnica	5	
			Idaho fescue	5	
			Kinnikinnick	5	
			Oregongrape	5	
			White spirea	5	
			Bluebunch wheatgrass	2	
			Twinflower	1	
48:					
Felan	Favorable	800	Blue huckleberry	30	Subalpine fir/queencup beadlily, subalpine fir/menziesia
	Normal	600	Common beargrass	30	
	Unfavorable	400	Arnica	10	
			Grouse whortleberry	5	
			Pinegrass	5	
			Dwarf huckleberry	2	
			Myrtle pachistima	2	
			Rusty menziesia	2	
			Twinflower	2	
			White spirea	2	
			Lupine	1	
49:					
Felan	Favorable	800	Blue huckleberry	30	Subalpine fir/queencup beadlily, subalpine fir/menziesia
	Normal	600	Common beargrass	30	
	Unfavorable	400	Arnica	10	
			Grouse whortleberry	5	
			Pinegrass	5	
			Dwarf huckleberry	2	
			Myrtle pachistima	2	
			Rusty menziesia	2	
			Twinflower	2	
			White spirea	2	
			Lupine	1	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition	Representative habitat type or phase
	Kind of year	Dry weight			
		Lb/acre		Pct	
50:					
Finleypoint------	Favorable	700	Common snowberry----------	25	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	600	Mallow ninebark----------	15	
	Unfavorable	500	Pinegrass----------	15	
			Heartleaf arnica----------	10	
			Rough fescue----------	10	
			Idaho fescue----------	5	
			White spirea----------	5	
			Oceanspray----------	2	
			Oregongrape----------	2	
			Saskatoon serviceberry-------	2	
51:					
Finleypoint------	Favorable	700	Common snowberry----------	25	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	600	Mallow ninebark----------	15	
	Unfavorable	500	Pinegrass----------	15	
			Heartleaf arnica----------	10	
			Rough fescue----------	10	
			Idaho fescue----------	5	
			White spirea----------	5	
			Oceanspray----------	2	
			Oregongrape----------	2	
			Saskatoon serviceberry-------	2	
52:					
Finleypoint------	Favorable	700	Common snowberry----------	25	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	600	Mallow ninebark----------	15	
	Unfavorable	500	Pinegrass----------	15	
			Heartleaf arnica----------	10	
			Rough fescue----------	10	
			Idaho fescue----------	5	
			White spirea----------	5	
			Oceanspray----------	2	
			Oregongrape----------	2	
			Saskatoon serviceberry-------	2	
53:					
Finleypoint------	Favorable	700	Common snowberry----------	25	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	600	Mallow ninebark----------	15	
	Unfavorable	500	Pinegrass----------	15	
			Heartleaf arnica----------	10	
			Rough fescue----------	10	
			Idaho fescue----------	5	
			White spirea----------	5	
			Oceanspray----------	2	
			Oregongrape----------	2	
			Saskatoon serviceberry-------	2	
54:					
Finleypoint------	Favorable	800	Bluebunch wheatgrass---------	30	Douglas-fir/Idaho fescue, Douglas-fir/rough fescue
	Normal	700	Idaho fescue----------	15	
	Unfavorable	600	Arrowleaf balsamroot---------	10	
			Pinegrass----------	10	
			Rough fescue----------	10	
			Heartleaf arnica----------	2	
			Common snowberry----------	1	
			White spirea----------	1	
55:					
Finleypoint------	Favorable	800	Bluebunch wheatgrass---------	30	Douglas-fir/Idaho fescue, Douglas-fir/rough fescue
	Normal	700	Idaho fescue----------	15	
	Unfavorable	600	Arrowleaf balsamroot---------	10	
			Pinegrass----------	10	
			Rough fescue----------	10	
			Heartleaf arnica----------	2	
			Common snowberry----------	1	
			White spirea----------	1	
56:					
Finleypoint------	Favorable	700	Common snowberry----------	25	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	600	Mallow ninebark----------	15	
	Unfavorable	500	Pinegrass----------	15	
			Heartleaf arnica----------	10	
			Rough fescue----------	10	
			Idaho fescue----------	5	
			White spirea----------	5	
			Oceanspray----------	2	
			Oregongrape----------	2	
			Saskatoon serviceberry-------	2	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition	Representative habitat type or phase
	Kind of year	Dry weight			
		Lb/acre		Pct	
56 (con.):					
Wildgen	Favorable	500	Pinegrass	20	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	400	Elk sedge	10	
	Unfavorable	300	Common snowberry	5	
			Heartleaf arnica	5	
			Mallow ninebark	5	
			White spirea	5	
			Bluebunch wheatgrass	2	
			Dwarf huckleberry	2	
			Kinnikinnick	2	
			Raceme pussytoes	2	
			Rough fescue	2	
			Oregongrape	1	
57:					
Flott	Favorable	700	Common snowberry	25	Douglas-fir/snowberry, Douglas-fir/pinegrass
	Normal	600	Mallow ninebark	15	
	Unfavorable	500	Pinegrass	15	
			Heartleaf arnica	10	
			Rough fescue	10	
			Idaho fescue	5	
			White spirea	5	
			Oceanspray	2	
			Oregongrape	2	
			Saskatoon serviceberry	2	
58:					
Flott	Favorable	700	Common snowberry	25	Douglas-fir/snowberry, Douglas-fir/pinegrass
	Normal	600	Mallow ninebark	15	
	Unfavorable	500	Pinegrass	15	
			Heartleaf arnica	10	
			Rough fescue	10	
			Idaho fescue	5	
			White spirea	5	
			Oceanspray	2	
			Oregongrape	2	
			Saskatoon serviceberry	2	
59:					
Flott	Favorable	700	Common snowberry	25	Douglas-fir/snowberry, Douglas-fir/pinegrass
	Normal	600	Mallow ninebark	15	
	Unfavorable	500	Pinegrass	15	
			Heartleaf arnica	10	
			Rough fescue	10	
			Idaho fescue	5	
			White spirea	5	
			Oceanspray	2	
			Oregongrape	2	
			Saskatoon serviceberry	2	
60:					
Flott	Favorable	700	Common snowberry	25	Douglas-fir/snowberry, Douglas-fir/pinegrass
	Normal	600	Mallow ninebark	15	
	Unfavorable	500	Pinegrass	15	
			Heartleaf arnica	10	
			Rough fescue	10	
			Idaho fescue	5	
			White spirea	5	
			Oceanspray	2	
			Oregongrape	2	
			Saskatoon serviceberry	2	
61:					
Flott	Favorable	800	Bluebunch wheatgrass	30	Ponderosa pine/Idaho fescue, Douglas-fir/rough fescue
	Normal	700	Idaho fescue	15	
	Unfavorable	600	Pinegrass	10	
			Rough fescue	10	
			Arrowleaf balsamroot	5	
			Common snowberry	5	
			White spirea	5	
68:					
Glaciercreek	Favorable	300	Queencup beadlily	20	Grand fir/queencup beadlily
	Normal	200	Threeleaf foamflower	10	
	Unfavorable	100	Twinflower	10	
			Blue huckleberry	5	
			Myrtle pachistima	5	
			Pinegrass	5	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition	Representative habitat type or phase
	Kind of year	Dry weight			
		Lb/acre		Pct	
68 (con.):					
Glaciercreek-----			Roughleaf ricegrass----------	5	
			White spirea----------	5	
			Saskatoon serviceberry-------	2	
69:					
Half moon--------	Favorable	600	Unnamed perennial forbs------	15	Grand fir/queencup beadlily, grand fir/twinflower
	Normal	400	Wild sarsaparilla----------	15	
	Unfavorable	300	Heartleaf arnica----------	12	
			Queencup beadlily----------	11	
			western goldthread----------	10	
			Common snowberry----------	9	
			Ladyfern----------	5	
			Pinegrass----------	5	
			Blue huckleberry----------	2	
			Saskatoon serviceberry-------	2	
			western meadowrue----------	2	
			Elk sedge----------	1	
			Kinnikinnick----------	1	
			White spirea----------	1	
70:					
Half moon--------	Favorable	600	Unnamed perennial forbs------	15	Grand fir/queencup beadlily, grand fir/twinflower
	Normal	400	Wild sarsaparilla----------	15	
	Unfavorable	300	Heartleaf arnica----------	12	
			Queencup beadlily----------	11	
			western goldthread----------	10	
			Common snowberry----------	9	
			Ladyfern----------	5	
			Pinegrass----------	5	
			Blue huckleberry----------	2	
			Saskatoon serviceberry-------	2	
			western meadowrue----------	2	
			Elk sedge----------	1	
			Kinnikinnick----------	1	
			White spirea----------	1	
Courville--------	Favorable	800	Pinegrass----------	35	Grand fir/queencup beadlily, grand fir/twinflower
	Normal	650	Twinflower----------	15	
	Unfavorable	500	Arnica----------	10	
			Blue huckleberry----------	10	
			Common beargrass----------	5	
			Common snowberry----------	5	
			Dwarf huckleberry----------	5	
			Mallow ninebark----------	5	
			Myrtle pachistima----------	5	
			Russet buffaloberry----------	5	
			White spirea----------	5	
			Saskatoon serviceberry-------	1	
			western meadowrue----------	1	
71:					
Finleypoint------	Favorable	700	Common snowberry----------	25	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	600	Mallow ninebark----------	15	
	Unfavorable	500	Pinegrass----------	15	
			Heartleaf arnica----------	10	
			Rough fescue----------	10	
			Idaho fescue----------	5	
			White spirea----------	5	
			Oceanspray----------	2	
			Oregongrape----------	2	
			Saskatoon serviceberry-------	2	
73:					
Holloway---------	Favorable	800	Blue huckleberry----------	30	Subalpine fir/beargrass, subalpine fir/menziesia
	Normal	600	Common beargrass----------	30	
	Unfavorable	400	Arnica----------	10	
			Grouse whortleberry----------	5	
			Pinegrass----------	5	
			Dwarf huckleberry----------	2	
			Myrtle pachistima----------	2	
			Rusty menziesia----------	2	
			White spirea----------	2	
74:					
Holloway---------	Favorable	800	Blue huckleberry----------	30	Subalpine fir/beargrass, subalpine fir/menziesia
	Normal	600	Common beargrass----------	30	
	Unfavorable	400	Arnica----------	10	
			Grouse whortleberry----------	5	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition	Representative habitat type or phase
	Kind of year	Dry weight			
		Lb/acre		Pct	
74 (con.):					
Holloway			Pinegrass	5	
			Dwarf huckleberry	2	
			Myrtle pachistima	2	
			Rusty menziesia	2	
			White spirea	2	
75:					
Holloway	Favorable	300	Grouse whortleberry	40	Subalpine fir/grouse whortleberry, subalpine fir/menziesia
	Normal	250	Arnica	10	
	Unfavorable	200	Common beargrass	10	
			Elk sedge	10	
			Pinegrass	10	
			Blue huckleberry	5	
			Rusty menziesia	5	
			Smooth woodrush	5	
			Common juniper	1	
			White spirea	1	
76:					
Holloway	Favorable	300	Grouse whortleberry	40	Subalpine fir/grouse whortleberry, subalpine fir/menziesia
	Normal	250	Arnica	10	
	Unfavorable	200	Common beargrass	10	
			Elk sedge	10	
			Pinegrass	10	
			Blue huckleberry	5	
			Rusty menziesia	5	
			Smooth woodrush	5	
			Common juniper	1	
			White spirea	1	
78:					
Holloway	Favorable	800	Blue huckleberry	30	Subalpine fir/beargrass, subalpine fir/menziesia
	Normal	600	Common beargrass	30	
	Unfavorable	400	Arnica	10	
			Grouse whortleberry	5	
			Pinegrass	5	
			Dwarf huckleberry	2	
			Myrtle pachistima	2	
			Rusty menziesia	2	
			White spirea	2	
90:					
Kingspoint	Favorable	400	Pinegrass	30	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	300	Common snowberry	15	
	Unfavorable	200	Mallow ninebark	15	
			Elk sedge	10	
			Heartleaf arnica	5	
			Saskatoon serviceberry	5	
			White spirea	5	
			Oregongrape	2	
			western meadowrue	2	
91:					
Kingspoint	Favorable	400	Pinegrass	30	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	300	Common snowberry	15	
	Unfavorable	200	Mallow ninebark	15	
			Elk sedge	10	
			Heartleaf arnica	5	
			Saskatoon serviceberry	5	
			White spirea	5	
			Oregongrape	2	
			western meadowrue	2	
92:					
Kingspoint	Favorable	400	Pinegrass	30	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	300	Common snowberry	15	
	Unfavorable	200	Mallow ninebark	15	
			Elk sedge	10	
			Heartleaf arnica	5	
			Saskatoon serviceberry	5	
			White spirea	5	
			Oregongrape	2	
			western meadowrue	2	
105:					
McDonald	Favorable	2,000	Bluebunch wheatgrass	35	Douglas-fir/rough fescue, Douglas-fir/snowberry
	Normal	1,700	Rough fescue	30	
	Unfavorable	1,400	Idaho fescue	10	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition	Representative habitat type or phase
	Kind of year	Dry weight			
		Lb/acre		Pct	
105 (con.):					
McDonald---------			Unnamed perennial forbs------	10	
			Columbia needlegrass---------	5	
			Unnamed perennial grasses----	5	
			Unnamed shrubs----------	5	
106:					
McDonald---------	Favorable	2,400	Bluebunch wheatgrass---------	35	Douglas-fir/rough fescue, Douglas-fir/snowberry
	Normal	1,900	Rough fescue----------	30	
	Unfavorable	1,500	Idaho fescue----------	10	
			Unnamed perennial forbs------	10	
			Columbia needlegrass---------	5	
			Unnamed perennial grasses----	5	
			Unnamed shrubs----------	5	
107:					
McDonald---------	Favorable	2,400	Bluebunch wheatgrass---------	35	Douglas-fir/rough fescue, Douglas-fir/snowberry
	Normal	1,900	Rough fescue----------	30	
	Unfavorable	1,500	Idaho fescue----------	10	
			Unnamed perennial forbs------	10	
			Columbia needlegrass---------	5	
			Unnamed perennial grasses----	5	
			Unnamed shrubs----------	5	
108:					
McDonald---------	Favorable	2,400	Rough fescue----------	65	Douglas-fir/rough fescue, Douglas-fir/snowberry
	Normal	2,200	Unnamed perennial forbs------	10	
	Unfavorable	1,500	Bluebunch wheatgrass---------	5	
			Columbia needlegrass---------	5	
			Idaho fescue----------	5	
			Unnamed perennial grasses----	5	
			Unnamed shrubs----------	2	
111:					
Mitten----------	Favorable	400	Blue huckleberry----------	30	Grand fir/queencup beadlily, grand fir/beargrass
	Normal	300	Pinegrass----------	30	
	Unfavorable	200	Common beargrass----------	20	
			Myrtle pachistima----------	2	
			Oregongrape----------	2	
			Saskatoon serviceberry-------	2	
			Twinflower----------	2	
			White spirea----------	2	
112:					
Mitten----------	Favorable	400	Blue huckleberry----------	30	Grand fir/queencup beadlily, grand fir/beargrass
	Normal	300	Pinegrass----------	30	
	Unfavorable	200	Common beargrass----------	20	
			Myrtle pachistima----------	2	
			Oregongrape----------	2	
			Saskatoon serviceberry-------	2	
			Twinflower----------	2	
			White spirea----------	2	
113:					
Mitten----------	Favorable	600	Pinegrass----------	30	Douglas-fir/snowberry, Douglas-fir/pinegrass
	Normal	500	White spirea----------	20	
	Unfavorable	400	Heartleaf arnica----------	15	
			Rough fescue----------	10	
			Kinnikinnick----------	5	
			Saskatoon serviceberry-------	5	
			Common snowberry----------	1	
			Mallow ninebark----------	1	
114:					
Mitten----------	Favorable	600	Pinegrass----------	30	Douglas-fir/ninebark, Douglas-fir/snowberry
	Normal	500	White spirea----------	20	
	Unfavorable	400	Heartleaf arnica----------	15	
			Rough fescue----------	10	
			Kinnikinnick----------	5	
			Saskatoon serviceberry-------	5	
			Common snowberry----------	1	
			Mallow ninebark----------	1	
116:					
Mollman----------	Favorable	900	Pinegrass----------	25	Grand fir/queencup beadlily, grand fir/twinflower
	Normal	800	Common snowberry----------	15	
	Unfavorable	700	Mallow ninebark----------	15	
			Blue huckleberry----------	10	
			Common beargrass----------	5	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition	Representative habitat type or phase
	Kind of year	Dry weight			
		Lb/acre		Pct	
116 (con.):					
Mollman			Rocky Mountain maple	5	
			Oregongrape	2	
			White spirea	2	
			Woods rose	2	
			Oceanspray	1	
			Twinflower	1	
117:					
Mollman	Favorable	900	Pinegrass	25	Grand fir/queencup beadlily, grand fir/twinflower
	Normal	800	Common snowberry	15	
	Unfavorable	700	Mallow ninebark	15	
			Blue huckleberry	10	
			Common beargrass	5	
			Rocky Mountain maple	5	
			Oregongrape	2	
			White spirea	2	
			Woods rose	2	
			Oceanspray	1	
			Twinflower	1	
118:					
Mollman	Favorable	900	Pinegrass	25	Grand fir/queencup beadlily, grand fir/twinflower
	Normal	800	Common snowberry	15	
	Unfavorable	700	Mallow ninebark	15	
			Blue huckleberry	10	
			Common beargrass	5	
			Rocky Mountain maple	5	
			Oregongrape	2	
			White spirea	2	
			Woods rose	2	
			Oceanspray	1	
			Twinflower	1	
119:					
Mollman	Favorable	900	Pinegrass	25	Grand fir/queencup beadlily, grand fir/twinflower
	Normal	800	Common snowberry	15	
	Unfavorable	700	Mallow ninebark	15	
			Blue huckleberry	10	
			Common beargrass	5	
			Rocky Mountain maple	5	
			Oregongrape	2	
			White spirea	2	
			Woods rose	2	
			Oceanspray	1	
			Twinflower	1	
127:					
Phillcher	Favorable	250	Grouse whortleberry	35	Whitebark pine-subalpine fir, whitebark pine
	Normal	200	Arnica	10	
	Unfavorable	150	Sedge	10	
			Smooth woodrush	10	
			Blue huckleberry	5	
			Common beargrass	5	
			Lupine	5	
			Red mountainheath	5	
			Rusty menziesia	5	
128:					
Phillcher	Favorable	250	Grouse whortleberry	35	Whitebark pine-subalpine fir, whitebark pine
	Normal	200	Arnica	10	
	Unfavorable	150	Sedge	10	
			Smooth woodrush	10	
			Blue huckleberry	5	
			Common beargrass	5	
			Lupine	5	
			Red mountainheath	5	
			Rusty menziesia	5	
138:					
Repp	Favorable	600	Bluebunch wheatgrass	30	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	450	Common snowberry	15	
	Unfavorable	300	Pinegrass	15	
			Arrowleaf balsamroot	10	
			Rough fescue	10	
			Heartleaf arnica	5	
			Idaho fescue	5	
			Mallow ninebark	2	
			Oregongrape	1	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production: Kind of year	Total production: Dry weight	Characteristic vegetation	Composition	Representative habitat type or phase
		Lb/acre		Pct	
139:					
Repp	Favorable	800	Common snowberry	25	Douglas-fir/snowberry, Douglas-fir/pinegrass
	Normal	600	Pinegrass	20	
	Unfavorable	400	Mallow ninebark	15	
			Elk sedge	10	
			Heartleaf arnica	5	
			Idaho fescue	5	
			White spirea	5	
			Arrowleaf balsamroot	1	
			Bluebunch wheatgrass	1	
			Oregongrape	1	
			Rough fescue	1	
			Saskatoon serviceberry	1	
150:					
Rumblecreek	Favorable	700	Pinegrass	20	Grand fir/twinflower, grand fir/beargrass
	Normal	500	Blue huckleberry	15	
	Unfavorable	300	Common beargrass	15	
			Arnica	5	
			Common snowberry	5	
			Queencup beadlily	5	
			Twinflower	5	
			White spirea	5	
			Myrtle pachistima	2	
			Saskatoon serviceberry	2	
			Oceanspray	1	
			Oregongrape	1	
151:					
Rumblecreek	Favorable	700	Pinegrass	20	Grand fir/twinflower, grand fir/beargrass
	Normal	500	Blue huckleberry	15	
	Unfavorable	300	Common beargrass	15	
			Arnica	5	
			Common snowberry	5	
			Queencup beadlily	5	
			Twinflower	5	
			White spirea	5	
			Myrtle pachistima	2	
			Saskatoon serviceberry	2	
			Oceanspray	1	
			Oregongrape	1	
152:					
Rumblecreek	Favorable	700	Pinegrass	20	Grand fir/twinflower, grand fir/beargrass
	Normal	500	Blue huckleberry	15	
	Unfavorable	300	Common beargrass	15	
			Arnica	5	
			Common snowberry	5	
			Queencup beadlily	5	
			Twinflower	5	
			White spirea	5	
			Myrtle pachistima	2	
			Saskatoon serviceberry	2	
			Oceanspray	1	
			Oregongrape	1	
153:					
Rumblecreek	Favorable	700	Pinegrass	20	Grand fir/twinflower, grand fir/beargrass
	Normal	500	Blue huckleberry	15	
	Unfavorable	300	Common beargrass	15	
			Arnica	5	
			Common snowberry	5	
			Queencup beadlily	5	
			Twinflower	5	
			White spirea	5	
			Myrtle pachistima	2	
			Saskatoon serviceberry	2	
			Oceanspray	1	
			Oregongrape	1	
154:					
Sacheen	Favorable	1,700	Bluebunch wheatgrass	30	Ponderosa pine/Idaho fescue
	Normal	1,200	Rough fescue	25	
	Unfavorable	800	Unnamed perennial grasses	7	
			Common snowberry	5	
			Idaho fescue	5	
			Indian ricegrass	5	
			Rose	5	
			Unnamed perennial forbs	5	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition	Representative habitat type or phase
	Kind of year	Dry weight			
		Lb/acre		Pct	
154:					
Sacheen			Columbia needlegrass	3	
			Timber danthonia	3	
			Needleandthread	2	
			Threadleaf sedge	2	
			Prairie junegrass	1	
155:					
Sacheen	Favorable	1,700	Bluebunch wheatgrass	30	Ponderosa pine/Idaho fescue
	Normal	1,200	Rough fescue	25	
	Unfavorable	800	Unnamed perennial grasses	7	
			Common snowberry	5	
			Idaho fescue	5	
			Indian ricegrass	5	
			Rose	5	
			Unnamed perennial forbs	5	
			Columbia needlegrass	3	
			Timber danthonia	3	
			Needleandthread	2	
			Threadleaf sedge	2	
			Prairie junegrass	1	
156:					
Selon	Favorable	500	Common snowberry	30	Douglas-fir/snowberry, ponderosa pine/snowberry
	Normal	400	Pinegrass	20	
	Unfavorable	300	White spirea	15	
			Elk sedge	10	
			Heartleaf arnica	5	
			Saskatoon serviceberry	2	
			western meadowrue	2	
			Common chokecherry	1	
			Common juniper	1	
			Oregongrape	1	
157:					
Selon	Favorable	500	Common snowberry	30	Douglas-fir/snowberry, ponderosa pine/snowberry
	Normal	400	Pinegrass	20	
	Unfavorable	300	White spirea	15	
			Elk sedge	10	
			Heartleaf arnica	5	
			Saskatoon serviceberry	2	
			western meadowrue	2	
			Common chokecherry	1	
			Common juniper	1	
			Oregongrape	1	
158:					
Selon	Favorable	500	Common snowberry	30	Douglas-fir/snowberry, ponderosa pine/snowberry
	Normal	400	Pinegrass	20	
	Unfavorable	300	White spirea	15	
			Elk sedge	10	
			Heartleaf arnica	5	
			Saskatoon serviceberry	2	
			western meadowrue	2	
			Common chokecherry	1	
			Common juniper	1	
			Oregongrape	1	
159:					
Selon	Favorable	500	Common snowberry	30	Douglas-fir/snowberry, ponderosa pine/snowberry
	Normal	400	Pinegrass	20	
	Unfavorable	300	White spirea	15	
			Elk sedge	10	
			Heartleaf arnica	5	
			Saskatoon serviceberry	2	
			western meadowrue	2	
			Common chokecherry	1	
			Common juniper	1	
			Oregongrape	1	
162:					
Tevis	Favorable	800	Pinegrass	35	Grand fir/twinflower, grand fir/beargrass
	Normal	650	Heartleaf arnica	20	
	Unfavorable	500	Common snowberry	10	
			Queencup beadlily	5	
			Starry false Solomons seal	5	
			White spirea	5	
			Blue huckleberry	3	
			Twinflower	3	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition	Representative habitat type or phase
	Kind of year	Dry weight			
		Lb/acre		Pct	
162 (con.):					
Tevis			Common beargrass	1	
			Elk sedge	1	
			Kinnikinnick	1	
			Saskatoon serviceberry	1	
163:					
Trapps	Favorable	500	Pinegrass	25	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	400	Common snowberry	20	
	Unfavorable	300	Elk sedge	10	
			Heartleaf arnica	5	
			White spirea	5	
			Oregongrape	2	
			Common pipsissewa	1	
			Kinnikinnick	1	
			Russet buffaloberry	1	
164:					
Trapps	Favorable	500	Pinegrass	25	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	400	Common snowberry	20	
	Unfavorable	300	Elk sedge	10	
			Heartleaf arnica	5	
			White spirea	5	
			Oregongrape	2	
			Common pipsissewa	1	
			Kinnikinnick	1	
			Russet buffaloberry	1	
172:					
Waldbillig	Favorable	800	Blue huckleberry	25	Subalpine fir/beargrass, subalpine fir/menziesia, subalpine fir/twinflower
	Normal	600	Common beargrass	25	
	Unfavorable	400	Arnica	10	
			Pinegrass	10	
			Grouse whortleberry	5	
			Rusty menziesia	5	
			Dwarf huckleberry	2	
			Elk sedge	2	
			Myrtle pachistima	2	
			Queencup beadlily	2	
			western meadowrue	2	
			White spirea	2	
			Twinflower	1	
173:					
Waldbillig	Favorable	800	Blue huckleberry	25	Subalpine fir/beargrass, subalpine fir/menziesia, subalpine fir/twinflower
	Normal	600	Common beargrass	25	
	Unfavorable	400	Arnica	10	
			Pinegrass	10	
			Grouse whortleberry	5	
			Rusty menziesia	5	
			Dwarf huckleberry	2	
			Elk sedge	2	
			Myrtle pachistima	2	
			Queencup beadlily	2	
			western meadowrue	2	
			White spirea	2	
			Twinflower	1	
179:					
Wildgen	Favorable	500	Pinegrass	20	Douglas-fir/snowberry, Douglas-fir/pinegrass
	Normal	400	Elk sedge	10	
	Unfavorable	300	Common snowberry	5	
			Heartleaf arnica	5	
			Mallow ninebark	5	
			White spirea	5	
			Bluebunch wheatgrass	2	
			Dwarf huckleberry	2	
			Kinnikinnick	2	
			Raceme pussytoes	2	
			Rough fescue	2	
			Oregongrape	1	
180:					
Wildgen	Favorable	500	Pinegrass	20	Douglas-fir/snowberry, Douglas-fir/pinegrass
	Normal	400	Elk sedge	10	
	Unfavorable	300	Common snowberry	5	
			Heartleaf arnica	5	
			Mallow ninebark	5	
			White spirea	5	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production: Kind of year	Total production: Dry weight	Characteristic vegetation	Composition	Representative habitat type or phase
		Lb/acre		Pct	
180 (con.):					
Wildgen			Bluebunch wheatgrass	2	
			Dwarf huckleberry	2	
			Kinnikinnick	2	
			Raceme pussytoes	2	
			Rough fescue	2	
			Oregongrape	1	
181:					
Wildgen	Favorable	500	Pinegrass	20	Douglas-fir/snowberry, Douglas-fir/pinegrass
	Normal	400	Elk sedge	10	
	Unfavorable	300	Common snowberry	5	
			Heartleaf arnica	5	
			Mallow ninebark	5	
			White spirea	5	
			Bluebunch wheatgrass	2	
			Dwarf huckleberry	2	
			Kinnikinnick	2	
			Raceme pussytoes	2	
			Rough fescue	2	
			Oregongrape	1	
Finleypoint	Favorable	700	Common snowberry	25	Douglas-fir/snowberry, Douglas-fir/pinegrass
	Normal	600	Mallow ninebark	15	
	Unfavorable	500	Pinegrass	15	
			Heartleaf arnica	10	
			Rough fescue	10	
			Idaho fescue	5	
			White spirea	5	
			Oceanspray	2	
			Oregongrape	2	
			Saskatoon serviceberry	2	
182:					
Winfall	Favorable	800	Pinegrass	35	Grand fir/queencup beadlily, grand fir/twinflower
	Normal	650	Heartleaf arnica	20	
	Unfavorable	500	Common snowberry	10	
			Queencup beadlily	5	
			Starry false Solomons seal	5	
			White spirea	5	
			Blue huckleberry	3	
			Mallow ninebark	3	
			Twinflower	3	
			Common beargrass	1	
			Elk sedge	1	
			Kinnikinnick	1	
			Oregongrape	1	
			Saskatoon serviceberry	1	
183:					
Winfall	Favorable	800	Pinegrass	35	Grand fir/queencup beadlily, grand fir/twinflower
	Normal	650	Heartleaf arnica	20	
	Unfavorable	500	Common snowberry	10	
			Queencup beadlily	5	
			Starry false Solomons seal	5	
			White spirea	5	
			Blue huckleberry	3	
			Mallow ninebark	3	
			Twinflower	3	
			Common beargrass	1	
			Elk sedge	1	
			Kinnikinnick	1	
			Oregongrape	1	
			Saskatoon serviceberry	1	
184:					
Winfall	Favorable	800	Pinegrass	35	Grand fir/queencup beadlily, grand fir/twinflower
	Normal	650	Heartleaf arnica	20	
	Unfavorable	500	Common snowberry	10	
			Queencup beadlily	5	
			Starry false Solomons seal	5	
			White spirea	5	
			Blue huckleberry	3	
			Mallow ninebark	3	
			Twinflower	3	
			Common beargrass	1	
			Elk sedge	1	

FOREST LAND UNDERSTORY VEGETATION AND HABITAT TYPES--Continued

Map symbol and soil name	Total production		Characteristic vegetation	Composition	Representative habitat type or phase
	Kind of year	Dry weight			
		Lb/acre		Pct	
184 (con.):					
Winfall			Kinnikinnick	1	
			Oregongrape	1	
			Saskatoon serviceberry	1	
185:					
Winkler	Favorable	600	Pinegrass	25	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	450	Arrowleaf balsamroot	20	
	Unfavorable	300	Elk sedge	20	
			Common snowberry	10	
			White spirea	10	
			Heartleaf arnica	5	
			Kinnikinnick	5	
			Mallow ninebark	5	
			Saskatoon serviceberry	2	
			Idaho fescue	1	
186:					
Winkler	Favorable	600	Pinegrass	25	Douglas-fir/snowberry, Douglas-fir/ninebark
	Normal	450	Arrowleaf balsamroot	20	
	Unfavorable	300	Elk sedge	20	
			Common snowberry	10	
			White spirea	10	
			Heartleaf arnica	5	
			Kinnikinnick	5	
			Mallow ninebark	5	
			Saskatoon serviceberry	2	
			Idaho fescue	1	
187:					
Winkler	Favorable	400	Bluebunch wheatgrass	25	Douglas-fir/rough fescue, Douglas-fir/pinegrass-bluebunch wheatgrass phase
	Normal	300	Arrowleaf balsamroot	15	
	Unfavorable	200	Elk sedge	15	
			White spirea	15	
			Mallow ninebark	10	
			Rough fescue	10	
			Common snowberry	5	
			Idaho fescue	5	
			Pinegrass	5	
			Roughleaf ricegrass	5	
			Heartleaf arnica	2	
			Kinnikinnick	2	
			Saskatoon serviceberry	2	
Sharrott	Favorable	400	Pinegrass	35	Douglas-fir/rough fescue, Douglas-fir/pinegrass-bluebunch wheatgrass phase
	Normal	300	Elk sedge	20	
	Unfavorable	200	Mallow ninebark	20	
			Arrowleaf balsamroot	5	
			Common snowberry	5	
			Oregongrape	5	
190:					
Yellowbay	Favorable	400	Common snowberry	25	Douglas-fir/snowberry, Douglas-fir/dwarf huckleberry
	Normal	300	Pinegrass	25	
	Unfavorable	200	Elk sedge	10	
			Heartleaf arnica	10	
			White spirea	10	
			Saskatoon serviceberry	2	
			Oregongrape	1	
191:					
Yellowbay	Favorable	400	Common snowberry	25	Douglas-fir/snowberry, Douglas-fir/dwarf huckleberry
	Normal	300	Pinegrass	25	
	Unfavorable	200	Elk sedge	10	
			Heartleaf arnica	10	
			White spirea	10	
			Saskatoon serviceberry	2	
			Oregongrape	1	
192:					
Yellowbay	Favorable	400	Common snowberry	25	Douglas-fir/snowberry, Douglas-fir/dwarf huckleberry
	Normal	300	Pinegrass	25	
	Unfavorable	200	Elk sedge	10	
			Heartleaf arnica	10	
			White spirea	10	
			Saskatoon serviceberry	2	
			Oregongrape	1	

Forest Land

The tables "Forest Land Productivity" and "Forest Land Management" can be used by forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed.

Woodland Ordination System

The table "Forest Land Management" lists the ordination (woodland suitability) symbol for each soil. The ordination system is a nationwide uniform system of labeling soils or groups of soils that are similar in use and management. The primary factors evaluated in the woodland ordination system are productivity of the forest overstory tree species and the principal soil properties resulting in hazards and limitations that affect forest management. There are three parts of the ordination system--class, subclass, and group. The class and subclass are referred to as the ordination symbol.

Ordination Class Symbol

The first element of the ordination symbol is a number that denotes potential productivity in terms of cubic meters of wood per hectare per year for the indicator tree species. The larger the number, the greater the potential productivity. Potential productivity is based on site index and the corresponding culmination of mean annual increment. For example, the number 1 indicates a potential production of 1 cubic meter of wood per hectare per year (14.3 cubic feet per acre per year) and 10 indicates a potential production of 10 cubic meters of wood per hectare per year (143 cubic feet per acre per year).

Indicator species is a species that is common in the area and is generally, but not necessarily, the most productive on the soil. It is the species that determines the ordination class. The table "Forest Land Productivity" shows the productivity for all species where data have been collected.

Site index is determined by taking height measurements and determining the age of selected trees within stands of a given species *(2)*. This index is the average height, in feet, that the trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands. The site indexes shown in the table "Forest Land Productivity" are averages based on measurements made at sites that are representative of the soil series. When the site index and forest land productivity of different soils are compared, the values for the same tree species should be compared *(6)*. The higher the site index number, the more productive the soil for that species. Site index values are used in conjunction with yield tables *(7)* to determine average annual yields. Indirectly, they are used to determine the productivity class in the ordination class symbol.

Ordination Subclass Symbol

The second element of the ordination symbol, or subclass, is a capital letter that indicates certain soil or physiographic characteristics that contribute to important hazards or limitations to be considered in management. The subclasses are defined as follows:

Subclass X indicates that forest land use and management are limited by stones or rocks.

Subclass W indicates that forest land use and management are significantly limited by excess water, either seasonally or throughout the year. Restricted drainage, a high water table, or flooding can adversely affect either stand development or management.

Subclass T indicates that the root zone has toxic substances. Excessive alkalinity, acidity, sodium salts, or other toxic substances impede the development of desirable species.

Subclass D indicates that forest land use and management are limited by a restricted rooting depth. The rooting depth is restricted by hard bedrock, a hardpan, or other restrictive layers in the soil.

Subclass C indicates that forest land use and management are limited by the kind or amount of clay in the upper part of the soil.

Subclass S indicates that the soil is sandy, has a low available water capacity, and normally has a low content of available plant nutrients. The use of equipment is limited during dry periods.

Subclass F indicates that forest land use and management are limited by a high content of rock fragments that are larger than 2 millimeters and smaller than 10 inches. This subclass includes flaggy soils.

Subclass R indicates that forest land use and management are limited by excessive slope.

Subclass A indicates that no significant limitations affect forest land use and management.

Forest Land Management and Productivity

Information about the productivity and management of the forested map units in the survey area is given in the tables "Forest Land Management" and "Forest Land Productivity."

Management Concerns

In the table "Forest Land Management," the soils are rated for the erosion hazard, the equipment limitation, seedling mortality, the windthrow hazard, and plant competition.

The *erosion hazard* is *slight* if the expected soil loss is small; *moderate* if some measures are needed to control erosion during logging and road construction; and *severe* if intensive management or special equipment and methods are needed to prevent excessive soil loss.

The *equipment limitation* is *slight* if the use of equipment is not limited to a particular kind of equipment or time of year; *moderate* if there is a short seasonal limitation or a need for some modification in the management of equipment; and *severe* if there is a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

Seedling mortality ratings are for seedlings that are from a good planting stock and that are properly planted during a period of average rainfall. A rating of *slight* indicates that the expected mortality of the planted seedlings is less than 25 percent; *moderate*, 25 to 50 percent; and *severe*, more than 50 percent.

The*windthrow hazard* is *slight* if trees in wooded areas are not expected to be blown down by commonly occurring winds; *moderate* if some trees are blown down during periods of excessive soil wetness and strong winds; and *severe* if many trees are blown down during periods of excessive soil wetness and moderate or strong winds.

Plant competition is *slight* if there is little or no competition from other plants; *moderate* if plant competition is expected to hinder the development of a fully stocked stand of desirable trees; and *severe* if plant competition is expected to prevent the establishment of a desirable stand unless the site is intensively prepared, weeded, or otherwise managed for the control of undesirable plants.

Potential Productivity

The potential productivity of merchantable or *common trees* is expressed as a site index, which is described under the heading "Ordination Class Symbol." Commonly grown trees are those that forest land managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

The column *trees that stands are commonly managed for* in the table "Forest Land Productivity" lists trees that are suitable for commercial wood production and that are suited to the soils.

Forest Land of Lake County Area

The potential productivity of merchantable or common trees on a soil is expressed as a site index. This index is the average height in feet, that the dominant and codominant trees of a given species attain in a specified number of years. This number of years is called the base age. Base age varies by the publication used to determine the site index of a species. The specified base age is 100 years for Douglas-fir, grand fir, and western larch. Site index values were computed from the following references: J. E. Brickell, for Douglas-fir (6); R. R. Alexander, for Engelmann spruce (3); I. T. Haigh, for grand fir (10); R. R. Alexander, for lodgepole pine (2); W. H. Meyer, for ponderosa pine (12); and L. J. Cummings, for western larch (7). The site index applies to fully stocked, even-aged, unmanaged stands.

Site index can be used in conjunction with yield tables to develop estimates of potential growth of adapted tree species on different soils. Yield estimates in the "Forest Land Productivity" table

are expressed as average annual board-feet (Scribner rule) per acre, and total average annual cubic feet per acre.

Yield estimates for Douglas-fir, ponderosa pine, and western larch were made using W.H. Meyer (12). Board foot yield estimates are based on all trees greater than 11.6 inches in diameter breast height (DBH). Total cubic foot volume estimates are based on trees 0.6 inches and more DBH, including stump and tip, but not the barkof the tree. Yield estimates for Engelmann spruce were based on managed stand yield tables developed for SCS by Carlton B. Edminster, U.S. Forest Service, Rock Mountain Forest and Range Experiment Station. The tables developed by Edminster represent an initial stand basal area of 120 square feet per acre and a 20 year thinning interval. Board foot values in the table are based on trees 8 inches DBH and larger, to a 6-inch top. Cubic foot volumes are based for all trees, from ground to tip. "Yield Tables for Managed Stands of Lodgepole Pine in Colorado and Wyoming," (11) was used to estimate board foot yields of lodgepole pine. Board foot volume estimates in the reference include all trees larger than 10 inches DBH to an 8-inch top diameter, inside bark. Total cubic foot volumes were estimated from "Gross and Net Yield Tables for Lodgepole Pine." (9) Included in the cubic foot volume estimated for lodgepole pine are all trees 1 inch DBH and larger with tops and stumps included.

Forest Access Road Limitations and Hazards

The major management concerns affecting the use of the detailed soil map units in the survey area for forest access roads are listed in the table "Main Forest Access Road Limitations and Hazards." The significance of each limitation or hazard and the criteria used to determine the limitation or hazard are described in this section.

Areas of rock outcrop and *depth to bedrock* can increase the cost of road construction and influence route planning. Constructing the roads is difficult because of the need for rock removal and for additional soil material to provide a suitable road surface.

Boulders increase the cost of road construction and influence route planning. Construction is difficult mainly because of the need for extraction and disposal of the boulders.

Dustiness of the road surface material may cause safety problems and accelerate equipment wear. Dust-abatement measures are needed during dry periods.

Flooding in the area where a road is constructed may restrict use, result in damage to the roadway, and result in the sedimentation of waterways. The hazard of flooding can be reduced by installing a drainage system, elevating the roadbed, and using riprap and diversions.

Low soil strength of the soil material used to construct the road surface can result in rutting, in drainage problems, and in poor trafficability during wet periods. The road should be used only during dry periods or when the surface is frozen. Surfacing with material of suitable strength and installing a drainage system can help to overcome this limitation.

Roadbed material that has a high *shrink-swell potential* shrinks and swells markedly during dry and wet periods. Excessive shrinking and swelling can damage the road surface or other features, such as bridge abutments, culverts, and erosion-control structures.

A steep *slope* results in increased construction and maintenance costs and increased sedimentation because of the large cuts necessary to create an adequate roadbed. Seeding the cut slope to suitable vegetation minimizes sedimentation. Large cuts can increase instability of the slope. Where slumping is a hazard, slope failure can become a significant maintenance and environmental problem. Areas where the slope is steep should not be used as sites for roads.

Slumping causes safety problems and increases maintenance costs. Frequent clearing of slumped soil in the roadbed or rebuilding of the roadway may be needed to keep the road serviceable and drainage systems functioning.

Stones cause problems in maintaining a smooth road surface that has good trafficability. Unless the stones are removed, additions of suitable stone-free material may be needed when the road is surfaced.

The erodibility of the soil material in the roadbed influences the probability of *water erosion* resulting from the channeling of runoff in the roadway. Erosion can result in the sedimentation of streams. It can be controlled by reducing road grades and controlling runoff onto and off of the road surface through the installation of drainage measures.

Roads built across soils that have a *water table* may require substantial ballast, fabric, internal drainage systems, and other measures that maintain a road surface that has good trafficability. Construction and use of the road only during periods when the water table is not near the surface or when the road is frozen help

to maintain trafficability and reduce the potential for site damage.

Following is an explanation of the criteria used to determine the limitations or hazards.

Areas of rock outcrop.--Rock outcrop is a named component of the map unit.

Areas of rubble land.--Rubble land is a named component of the map unit.

Boulders.--The terms describing the texture within a depth of 24 inches include a bouldery modifier, or the soil is a bouldery phase.

Depth to rock.--Hard bedrock is within a depth of 60 inches.

Dustiness.--The surface layer is silt, silt loam, loam, or very fine sandy loam.

Flooding.--The component of the map unit is occasionally flooded or frequently flooded.

Low soil strength.--The component of the map unit has one of the following Unified classifications within the 60-inch profile: ML, CL, MH, CH, OL, PT, or GC.

Shrink-swell potential.--The component of the map unit has a high shrink-swell potential in a layer that is at least 10 inches thick and is within 40 inches of the surface.

Slope.--The upper slope limit is more than 35 percent.

Slumping.--The component of the map unit meets the requirements for low soil strength and has slopes of more than 35 percent.

Stones.--The terms describing the texture within a depth of 24 inches include a very stony or extremely stony modifier, or the soil is a very stony or extremely stony phase.

Water erosion.--The surface K factor multiplied by the upper slope limit is more than 10.

Water table.--The component of the map unit has a water table within a depth of 60 inches.

FOREST LAND MANAGEMENT

(Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that data were not available)

Map symbol and soil name	Ordination symbol	Management concerns				
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition
1:						
Aeric Haplaquepts-----	6W	Slight	Severe	Moderate	Severe	Moderate
3:						
Bata----------	5A	Moderate	Slight	Slight	Moderate	Moderate
4:						
Bata----------	5R	Severe	Severe	Slight	Moderate	Moderate
25:						
Connah----------	6A	Slight	Moderate	Slight	Slight	Moderate
26:						
Connah----------	6A	Slight	Moderate	Slight	Slight	Moderate
27:						
Connah----------	6A	Slight	Moderate	Slight	Slight	Moderate
28:						
Courville----------	6A	Slight	Slight	Slight	Moderate	Moderate
29:						
Courville----------	6A	Moderate	Slight	Slight	Moderate	Moderate
30:						
Courville----------	6R	Severe	Severe	Slight	Moderate	Moderate
31:						
Courville----------	6A	Slight	Slight	Moderate	Slight	Severe
32:						
Courville----------	6A	Moderate	Slight	Moderate	Slight	Severe
33:						
Courville----------	6R	Severe	Severe	Moderate	Slight	Severe
34:						
Courville----------	6A	Moderate	Slight	Slight	Moderate	Moderate
Rumblecreek----------	7A	Slight	Slight	Slight	Moderate	Moderate
35:						
Craddock----------	5R	Severe	Severe	Slight	Moderate	Moderate
36:						
Craddock----------	5A	Slight	Slight	Slight	Moderate	Moderate
37:						
Craddock----------	5A	Moderate	Slight	Slight	Moderate	Moderate
42:						
Dubay----------	8A	Slight	Slight	Slight	Slight	Severe
43:						
Dubay----------	8A	Slight	Slight	Slight	Slight	Severe
44:						
Eaglewing----------	6A	Slight	Moderate	Severe	Slight	Severe
45:						
Eaglewing----------	6A	Moderate	Moderate	Severe	Slight	Severe
46:						
Eaglewing----------	6A	Slight	Moderate	Severe	Slight	Severe
48:						
Felan----------	7A	Moderate	Slight	Slight	Moderate	Moderate
49:						
Felan----------	7R	Severe	Severe	Slight	Moderate	Moderate
50:						
Finleypoint----------	6A	Slight	Slight	Moderate	Slight	Severe
51:						
Finleypoint----------	6A	Slight	Slight	Moderate	Slight	Severe

FOREST LAND MANAGEMENT--Continued

Map symbol and soil name	Ordination symbol	Management concerns				
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition
52:						
Finleypoint	6A	Moderate	Slight	Moderate	Slight	Severe
53:						
Finleypoint	6R	Severe	Severe	Moderate	Slight	Severe
54:						
Finleypoint	6A	Moderate	Slight	Severe	Slight	Severe
55:						
Finleypoint	6R	Severe	Severe	Severe	Slight	Severe
56:						
Finleypoint	6R	Severe	Severe	Moderate	Slight	Severe
Wildgen	6R	Severe	Severe	Moderate	Slight	Severe
57:						
Flott	7A	Slight	Slight	Moderate	Slight	Severe
58:						
Flott	7A	Slight	Slight	Moderate	Slight	Severe
59:						
Flott	7A	Moderate	Slight	Moderate	Slight	Severe
60:						
Flott	7A	Severe	Severe	Moderate	Slight	Severe
61:						
Flott	5R	Severe	Severe	Severe	Slight	Severe
68:						
Glaciercreek	7F	Slight	Moderate	Moderate	Moderate	Moderate
69:						
Half Moon	7C	Slight	Moderate	Slight	Moderate	Moderate
70:						
Half Moon	7C	Moderate	Moderate	Slight	Moderate	Moderate
Courville	6A	Slight	Slight	Slight	Moderate	Moderate
71:						
Finleypoint	6R	Severe	Severe	Moderate	Slight	Severe
73:						
Holloway	5A	Moderate	Slight	Slight	Moderate	Moderate
74:						
Holloway	5R	Severe	Severe	Slight	Moderate	Moderate
75:						
Holloway	4A	Moderate	Slight	Slight	Moderate	Moderate
76:						
Holloway	4R	Severe	Severe	Slight	Moderate	Moderate
77:						
Holloway	4A	Moderate	Slight	Moderate	Slight	Moderate
78:						
Holloway	5R	Severe	Severe	Slight	Moderate	Moderate
90:						
Kingspoint	7A	Slight	Slight	Severe	Slight	Severe
91:						
Kingspoint	7A	Moderate	Slight	Severe	Slight	Severe
92:						
Kingspoint	7R	Severe	Severe	Severe	Slight	Severe
105:						
McDonald	7C	Slight	Slight	Slight	Moderate	Moderate
106:						
McDonald	7C	Slight	Slight	Slight	Moderate	Moderate

Map symbol and soil name	Ordination symbol	Management concerns				
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition
107:						
McDonald	7C	Slight	Slight	Slight	Moderate	Moderate
108:						
McDonald	7C	Slight	Slight	Slight	Moderate	Moderate
111:						
Mitten	6A	Moderate	Slight	Slight	Moderate	Severe
112:						
Mitten	6R	Severe	Severe	Slight	Moderate	Severe
113:						
Mitten	4R	Severe	Severe	Severe	Moderate	Severe
114:						
Mitten	4R	Severe	Severe	Severe	Moderate	Severe
116:						
Mollman	6A	Slight	Slight	Slight	Slight	Severe
117:						
Mollman	6A	Slight	Slight	Slight	Slight	Severe
118:						
Mollman	6A	Moderate	Slight	Slight	Slight	Severe
119:						
Mollman	6R	Severe	Severe	Slight	Slight	Severe
127:						
Phillcher	2R	Severe	Moderate	Slight	Moderate	Moderate
128:						
Phillcher	2R	Severe	Severe	Slight	Moderate	Moderate
138:						
Repp	5R	Severe	Severe	Severe	Slight	Severe
139:						
Repp	6R	Severe	Severe	Severe	Slight	Severe
150:						
Rumblecreek	7A	Slight	Slight	Slight	Moderate	Moderate
151:						
Rumblecreek	7A	Slight	Slight	Slight	Moderate	Moderate
152:						
Rumblecreek	7A	Slight	Slight	Slight	Moderate	Moderate
153:						
Rumblecreek	7R	Severe	Severe	Slight	Moderate	Moderate
154:						
Sacheen	5S	Slight	Slight	Severe	Slight	Severe
155:						
Sacheen	5S	Slight	Slight	Severe	Slight	Severe
156:						
Selon	8A	Slight	Slight	Moderate	Slight	Severe
157:						
Selon	8A	Slight	Slight	Moderate	Slight	Severe
158:						
Selon	8A	Slight	Slight	Moderate	Slight	Severe
159:						
Selon	8A	Slight	Slight	Moderate	Slight	Severe
162:						
Tevis	6R	Severe	Severe	Moderate	Slight	Severe
163:						
Trapps	5A	Slight	Slight	Moderate	Slight	Severe

FOREST LAND MANAGEMENT--Continued

Map symbol and soil name	Ordination symbol	Management concerns				
		Erosion hazard	Equipment limitation	Seedling mortality	Windthrow hazard	Plant competition
164:						
Trapps	5A	Moderate	Slight	Moderate	Slight	Severe
172:						
Waldbillig	5A	Moderate	Slight	Slight	Moderate	Moderate
173:						
Waldbillig	5R	Severe	Severe	Slight	Moderate	Moderate
179:						
Wildgen	6A	Slight	Slight	Moderate	Slight	Severe
180:						
Wildgen	6R	Severe	Severe	Moderate	Slight	Severe
181:						
Wildgen	6A	Slight	Slight	Moderate	Slight	Severe
Finleypoint	6A	Moderate	Slight	Moderate	Slight	Severe
182:						
Winfall	6A	Slight	Slight	Moderate	Slight	Severe
183:						
Winfall	6A	Slight	Slight	Moderate	Slight	Severe
184:						
Winfall	6R	Severe	Severe	Moderate	Slight	Severe
185:						
Winkler	6R	Severe	Severe	Moderate	Slight	Severe
186:						
Winkler	6R	Severe	Severe	Moderate	Slight	Severe
187:						
Winkler	4R	Severe	Severe	Severe	Slight	Moderate
Sharrott	4R	Severe	Severe	Severe	Slight	Severe
190:						
Yellowbay	6F	Slight	Moderate	Moderate	Slight	Severe
191:						
Yellowbay	6F	Slight	Moderate	Moderate	Slight	Severe
192:						
Yellowbay	6F	Slight	Moderate	Moderate	Slight	Severe

FOREST LAND PRODUCTIVITY

(Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that data were not available)

Map symbol and soil name	Common trees	Site index	Productivity class	Board feet	Cubic feet	Trees that stands are commonly managed for--
1:						
Aeric Haplaquepts	Western larch	60	6	306	90	Western larch, Douglas-fir
	Douglas-fir	50	5	230	69	
	Engelmann spruce	60	3	214	50	
3:						
Bata	Lodgepole pine	85	5	344	74	Western larch, lodgepole pine, Douglas-fir
	Western larch	49	4	212	65	
	Douglas-fir	46	4	203	62	
	Subalpine fir	---	---	---	---	
4:						
Bata	Lodgepole pine	85	5	344	74	Western larch, lodgepole pine, Douglas-fir
	Western larch	49	4	212	65	
	Douglas-fir	46	4	203	62	
	Subalpine fir	---	---	---	---	
25:						
Connah	Douglas-fir	61	6	331	94	Ponderosa pine, Douglas-fir
	Ponderosa pine	92	6	322	88	
26:						
Connah	Douglas-fir	61	6	331	94	Ponderosa pine, Douglas-fir
	Ponderosa pine	92	6	322	88	
27:						
Connah	Douglas-fir	61	6	331	94	Ponderosa pine, Douglas-fir
	Ponderosa pine	92	6	322	88	
28:						
Courville	Douglas-fir	58	6	298	88	Lodgepole pine, ponderosa pine, Douglas-fir
	Ponderosa pine	91	6	315	87	
	Western larch	57	6	278	82	
	Lodgepole pine	86	5	351	75	
	Grand fir	---	---	---	---	
29:						
Courville	Douglas-fir	58	6	298	88	Lodgepole pine, ponderosa pine, Douglas-fir
	Ponderosa pine	91	6	315	87	
	Western larch	57	6	278	82	
	Lodgepole pine	86	5	351	75	
	Grand fir	---	---	---	---	
30:						
Courville	Douglas-fir	58	6	298	88	Lodgepole pine, ponderosa pine, Douglas-fir
	Ponderosa pine	91	6	315	87	
	Western larch	57	6	278	82	
	Lodgepole pine	86	5	351	75	
	Grand fir	---	---	---	---	
31:						
Courville	Douglas-fir	58	6	298	88	Ponderosa pine, Douglas-fir
	Ponderosa pine	88	6	291	82	
	Western larch	---	---	---	---	
32:						
Courville	Douglas-fir	58	6	298	88	Ponderosa pine, Douglas-fir
	Ponderosa pine	88	6	291	82	
	Western larch	---	---	---	---	
33:						
Courville	Douglas-fir	58	6	298	88	Ponderosa pine, Douglas-fir
	Ponderosa pine	88	6	291	82	
	Western larch	---	---	---	---	
34:						
Courville	Douglas-fir	58	6	298	88	Lodgepole pine, ponderosa pine, Douglas-fir
	Ponderosa pine	91	6	315	87	
	Western larch	57	6	278	82	
	Lodgepole pine	86	5	351	75	
	Grand fir	---	---	---	---	
Rumblecreek	Douglas-fir	62	7	343	96	Lodgepole pine, ponderosa pine, Douglas-fir
	Ponderosa pine	93	6	330	90	
	Lodgepole pine	83	5	326	72	
	Western larch	48	4	204	63	
	Grand fir	---	---	---	---	

Map symbol and soil name	Common trees	Site index	Productivity class	Board feet	Cubic feet	Trees that stands are commonly managed for--
35:						
Craddock	Engelmann spruce	76	5	308	70	Subalpine fir,
	Lodgepole pine	60	3	156	50	lodgepole pine,
	Subalpine fir	57	3	199	46	Engelmann spruce
36:						
Craddock	Engelmann spruce	76	5	308	70	Subalpine fir,
	Lodgepole pine	60	3	156	50	lodgepole pine,
	Subalpine fir	57	3	199	46	Engelmann spruce
37:						
Craddock	Engelmann spruce	76	5	308	70	Subalpine fir,
	Lodgepole pine	60	3	156	50	lodgepole pine,
	Subalpine fir	57	3	199	46	Engelmann spruce
42:						
Dubay	Douglas-fir	71	8	459	119	Ponderosa pine,
	Ponderosa pine	102	7	402	106	Douglas-fir
43:						
Dubay	Douglas-fir	71	8	459	119	Ponderosa pine,
	Ponderosa pine	102	7	402	106	Douglas-fir
44:						
Eaglewing	Ponderosa pine	92	6	322	88	Ponderosa pine,
	Douglas-fir	57	6	288	85	Douglas-fir
45:						
Eaglewing	Ponderosa pine	92	6	322	88	Ponderosa pine,
	Douglas-fir	57	6	288	85	Douglas-fir
46:						
Eaglewing	Ponderosa pine	92	6	322	88	Ponderosa pine,
	Douglas-fir	57	6	288	85	Douglas-fir
48:						
Felan	Douglas-fir	66	7	390	104	Western larch,
	Engelmann spruce	88	6	389	88	Engelmann spruce,
	Western larch	55	5	260	78	Douglas-fir
	Lodgepole pine	80	5	300	69	
	Subalpine fir	---	---	---	---	
49:						
Felan	Douglas-fir	66	7	390	104	Western larch,
	Engelmann spruce	88	6	389	88	Engelmann spruce,
	Western larch	55	5	260	78	Douglas-fir
	Lodgepole pine	80	5	300	69	
	Subalpine fir	---	---	---	---	
50:						
Finleypoint	Douglas-fir	58	6	298	88	Ponderosa pine,
	Ponderosa pine	87	6	284	80	Douglas-fir
51:						
Finleypoint	Douglas-fir	58	6	298	88	Ponderosa pine,
	Ponderosa pine	87	6	284	80	Douglas-fir
52:						
Finleypoint	Douglas-fir	58	6	298	88	Ponderosa pine,
	Ponderosa pine	87	6	284	80	Douglas-fir
53:						
Finleypoint	Douglas-fir	58	6	298	88	Ponderosa pine,
	Ponderosa pine	87	6	284	80	Douglas-fir
54:						
Finleypoint	Douglas-fir	57	6	288	85	Ponderosa pine,
	Ponderosa pine	67	4	162	52	Douglas-fir
55:						
Finleypoint	Douglas-fir	57	6	288	85	Ponderosa pine,
	Ponderosa pine	67	4	162	52	Douglas-fir
56:						
Finleypoint	Douglas-fir	58	6	298	88	Ponderosa pine,
	Ponderosa pine	87	6	284	80	Douglas-fir
Wildgen	Ponderosa pine	87	6	284	80	Ponderosa pine,
	Douglas-fir	55	5	266	81	Douglas-fir

Map symbol and soil name	Common trees	Site index	Productivity class	Board feet	Cubic feet	Trees that stands are commonly managed for--
57:						
Flott	Ponderosa pine	100	7	382	102	Ponderosa pine, Douglas-fir
	Douglas-fir	52	5	244	74	
58:						
Flott	Ponderosa pine	100	7	382	102	Ponderosa pine, Douglas-fir
	Douglas-fir	52	5	244	74	
59:						
Flott	Ponderosa pine	100	7	382	102	Ponderosa pine, Douglas-fir
	Douglas-fir	52	5	244	74	
60:						
Flott	Ponderosa pine	100	7	382	102	Ponderosa pine, Douglas-fir
	Douglas-fir	52	5	244	74	
61:						
Flott	Ponderosa pine	80	5	232	69	Ponderosa pine
68:						
Glaciercreek	Western white pine	65	9	689	126	Western larch, western white pine, ponderosa pine
	Ponderosa pine	102	7	402	106	
	Douglas-fir	61	6	331	94	
	Lodgepole pine	100	6	428	89	
	Western larch	55	5	260	78	
	Grand fir	47	---	---	---	
	Western hemlock	---	---	---	---	
	Western redcedar	---	---	---	---	
69:						
Half Moon	Douglas-fir	64	7	366	99	Western larch, Douglas-fir
	Western larch	60	6	306	90	
	Grand fir	45	---	---	---	
	Western redcedar	---	---	---	---	
	Western white pine	---	---	---	---	
	White spruce	---	---	---	---	
	White spruce	---	---	---	---	
70:						
Half Moon	Douglas-fir	64	7	366	99	Western larch, Douglas-fir
	Western larch	60	6	306	90	
	Grand fir	45	---	---	---	
	Western redcedar	---	---	---	---	
	Western white pine	---	---	---	---	
	White spruce	---	---	---	---	
	White spruce	---	---	---	---	
Courville	Douglas-fir	58	6	298	88	Lodgepole pine, ponderosa pine, Douglas-fir
	Ponderosa pine	91	6	315	87	
	Western larch	57	6	278	82	
	Lodgepole pine	86	5	351	75	
	Grand fir	45	---	---	---	
71:						
Finleypoint	Douglas-fir	58	6	298	88	Ponderosa pine, Douglas-fir
	Ponderosa pine	87	6	284	80	
73:						
Holloway	Douglas-fir	52	5	244	74	Western larch, Douglas-fir
	Lodgepole pine	75	4	259	64	
	Western larch	47	4	197	61	
	Engelmann spruce	---	---	---	---	
	Subalpine fir	---	---	---	---	
74:						
Holloway	Douglas-fir	52	5	244	74	Western larch, Douglas-fir
	Lodgepole pine	75	4	259	64	
	Western larch	47	4	197	61	
	Engelmann spruce	---	---	---	---	
	Subalpine fir	---	---	---	---	
75:						
Holloway	Engelmann spruce	65	4	245	56	Lodgepole pine, Engelmann spruce
	Lodgepole pine	60	3	156	50	
	Subalpine fir	---	---	---	---	
76:						
Holloway	Engelmann spruce	65	4	245	56	Lodgepole pine, Engelmann spruce
	Lodgepole pine	60	3	156	50	
	Subalpine fir	---	---	---	---	

Map symbol and soil name	Common trees	Site index	Productivity class	Board feet	Cubic feet	Trees that stands are commonly managed for--
77:						
Holloway	Lodgepole pine	63	4	173	52	Western larch, Douglas-fir
	Western larch	34	3	126	45	
	Douglas-fir	32	3	115	41	
	Subalpine fir	---	---	---	---	
78:						
Holloway	Douglas-fir	52	5	244	74	Western larch, Douglas-fir
	Lodgepole pine	75	4	259	64	
	Western larch	47	4	197	61	
90:						
Kingspoint	Ponderosa pine	95	7	345	94	Ponderosa pine, Douglas-fir
	Douglas-fir	61	6	331	94	
91:						
Kingspoint	Ponderosa pine	95	7	345	94	Ponderosa pine, Douglas-fir
	Douglas-fir	61	6	331	94	
92:						
Kingspoint	Ponderosa pine	95	7	345	94	Ponderosa pine, Douglas-fir
	Douglas-fir	61	6	331	94	
105:						
McDonald	Ponderosa pine	100	7	382	102	Ponderosa pine, Douglas-fir
	Douglas-fir	65	7	377	101	
106:						
McDonald	Ponderosa pine	100	7	382	102	Ponderosa pine, Douglas-fir
	Douglas-fir	65	7	377	101	
107:						
McDonald	Ponderosa pine	100	7	382	102	Ponderosa pine, Douglas-fir
	Douglas-fir	65	7	377	101	
108:						
McDonald	Ponderosa pine	100	7	382	102	Ponderosa pine, Douglas-fir
	Douglas-fir	65	7	377	101	
111:						
Mitten	Douglas-fir	57	6	288	85	Western larch, Douglas-fir
	Western larch	47	4	197	61	
	Ponderosa pine	72	4	188	58	
	Lodgepole pine	57	3	140	47	
	Grand fir	37	---	---	---	
112:						
Mitten	Douglas-fir	57	6	288	85	Western larch, Douglas-fir
	Western larch	47	4	197	61	
	Ponderosa pine	72	4	188	58	
	Lodgepole pine	57	3	140	47	
	Grand fir	37	---	---	---	
113:						
Mitten	Ponderosa pine	76	4	209	63	Ponderosa pine, Douglas-fir
	Douglas-fir	43	4	182	57	
	Western larch	34	3	126	45	
114:						
Mitten	Ponderosa pine	76	4	209	63	Ponderosa pine, Douglas-fir
	Douglas-fir	43	4	182	57	
	Western larch	34	3	126	45	
116:						
Mollman	Douglas-fir	57	6	288	85	Douglas-fir
	Western larch	50	5	219	67	
	Grand fir	44	---	---	---	
	Ponderosa pine	---	---	---	---	
117:						
Mollman	Douglas-fir	57	6	288	85	Douglas-fir
	Western larch	50	5	219	67	
	Grand fir	44	---	---	---	
	Ponderosa pine	---	---	---	---	
118:						
Mollman	Douglas-fir	57	6	288	85	Douglas-fir
	Western larch	50	5	219	67	
	Grand fir	44	---	---	---	
	Ponderosa pine	---	---	---	---	

Map symbol and soil name	Common trees	Site index	Productivity class	Board feet	Cubic feet	Trees that stands are commonly managed for--
119:						
Mollman	Douglas-fir	57	6	288	85	Douglas-fir
	Western larch	50	5	219	67	
	Grand fir	44	---	---	---	
127:						
Phillcher	Engelmann spruce	45	2	132	33	Engelmann spruce
	Lodgepole pine	---	---	---	---	
	Subalpine fir	---	---	---	---	
	Whitebark pine	---	---	---	---	
128:						
Phillcher	Engelmann spruce	45	2	132	33	Engelmann spruce
	Lodgepole pine	---	---	---	---	
	Subalpine fir	---	---	---	---	
	Whitebark pine	---	---	---	---	
138:						
Repp	Douglas-fir	51	5	237	71	Douglas-fir
	Ponderosa pine	68	4	167	53	
139:						
Repp	Douglas-fir	58	6	298	88	Ponderosa pine, Douglas-fir
	Ponderosa pine	86	5	276	78	
150:						
Rumblecreek	Douglas-fir	62	7	343	96	Lodgepole pine, ponderosa pine, Douglas-fir
	Ponderosa pine	93	6	330	90	
	Lodgepole pine	83	5	326	72	
	Western larch	48	4	204	63	
	Grand fir	---	---	---	---	
151:						
Rumblecreek	Douglas-fir	62	7	343	96	Lodgepole pine, ponderosa pine, Douglas-fir
	Ponderosa pine	93	6	330	90	
	Lodgepole pine	83	5	326	72	
	Western larch	48	4	204	63	
	Grand fir	---	---	---	---	
152:						
Rumblecreek	Douglas-fir	62	7	343	96	Lodgepole pine, ponderosa pine, Douglas-fir
	Ponderosa pine	93	6	330	90	
	Lodgepole pine	83	5	326	72	
	Western larch	48	4	204	63	
	Grand fir	---	---	---	---	
153:						
Rumblecreek	Douglas-fir	62	7	343	96	Lodgepole pine, ponderosa pine, Douglas-fir
	Ponderosa pine	93	6	330	90	
	Lodgepole pine	83	5	326	72	
	Western larch	48	4	204	63	
	Grand fir	---	---	---	---	
154:						
Sacheen	Ponderosa pine	82	5	246	72	Ponderosa pine
155:						
Sacheen	Ponderosa pine	82	5	246	72	Ponderosa pine
156:						
Selon	Ponderosa pine	110	8	488	122	Ponderosa pine
	Douglas-fir	---	---	---	---	
157:						
Selon	Ponderosa pine	110	8	488	122	Ponderosa pine
	Douglas-fir	---	---	---	---	
158:						
Selon	Ponderosa pine	110	8	488	122	Ponderosa pine
	Douglas-fir	---	---	---	---	
159:						
Selon	Ponderosa pine	110	8	488	122	Ponderosa pine
	Douglas-fir	---	---	---	---	
162:						
Tevis	Douglas-fir	56	6	277	83	Ponderosa pine, Douglas-fir
	Ponderosa pine	87	6	284	80	
	Western larch	52	5	235	71	
	Grand fir	---	---	---	---	

Map symbol and soil name	Common trees	Site index	Productivity class	Board feet	Cubic feet	Trees that stands are commonly managed for--
163:						
Trapps	Douglas-fir	50	5	230	69	Douglas-fir
	Ponderosa pine	75	4	203	62	
164:						
Trapps	Douglas-fir	50	5	230	69	Douglas-fir
	Ponderosa pine	75	4	203	62	
172:						
Waldbillig	Douglas-fir	53	5	252	76	Western larch, lodgepole pine, Douglas-fir
	Lodgepole pine	86	5	351	75	
	Western larch	46	4	189	60	
	Engelmann spruce	---	---	---	---	
	Subalpine fir	---	---	---	---	
173:						
Waldbillig	Douglas-fir	53	5	252	76	Western larch, lodgepole pine, Douglas-fir
	Lodgepole pine	86	5	351	75	
	Western larch	46	4	189	60	
	Engelmann spruce	---	---	---	---	
	Subalpine fir	---	---	---	---	
179:						
Wildgen	Ponderosa pine	87	6	284	80	Ponderosa pine, Douglas-fir
	Douglas-fir	55	5	266	81	
180:						
Wildgen	Ponderosa pine	87	6	284	80	Ponderosa pine, Douglas-fir
	Douglas-fir	55	5	266	81	
181:						
Wildgen	Ponderosa pine	87	6	284	80	Ponderosa pine, Douglas-fir
	Douglas-fir	55	5	266	81	
Finleypoint	Douglas-fir	58	6	298	88	Ponderosa pine, Douglas-fir
	Ponderosa pine	87	6	284	80	
182:						
Winfall	Douglas-fir	56	6	277	83	Ponderosa pine, Douglas-fir
	Ponderosa pine	87	6	284	80	
	Western larch	52	5	235	71	
	Grand fir	---	---	---	---	
183:						
Winfall	Douglas-fir	56	6	277	83	Ponderosa pine, Douglas-fir
	Ponderosa pine	87	6	284	80	
	Western larch	52	5	235	71	
	Grand fir	---	---	---	---	
184:						
Winfall	Douglas-fir	56	6	277	83	Ponderosa pine, Douglas-fir
	Ponderosa pine	87	6	284	80	
	Western larch	52	5	235	71	
	Grand fir	---	---	---	---	
185:						
Winkler	Douglas-fir	57	6	288	85	Ponderosa pine, Douglas-fir
	Ponderosa pine	79	5	226	67	
186:						
Winkler	Douglas-fir	57	6	288	85	Ponderosa pine, Douglas-fir
	Ponderosa pine	79	5	226	67	
187:						
Winkler	Douglas-fir	45	4	196	60	Ponderosa pine, Douglas-fir
	Ponderosa pine	64	3	147	50	
Sharrott	Douglas-fir	45	4	196	60	Douglas-fir
	Ponderosa pine	63	3	142	49	
190:						
Yellowbay	Ponderosa pine	90	6	307	85	Ponderosa pine
	Douglas-fir	55	5	266	81	
191:						
Yellowbay	Ponderosa pine	90	6	307	85	Ponderosa pine
	Douglas-fir	55	5	266	81	
192:						
Yellowbay	Ponderosa pine	90	6	307	85	Ponderosa pine
	Douglas-fir	55	5	266	81	

MAIN FOREST ACCESS ROAD LIMITATIONS AND HAZARDS

(See text for a description of the limitations and hazards listed in this table)

Soil name and map symbol	Forest access road limitations or hazards
1:	
Aeric Haplaquepts	Onsite required
3:	
Bata	Dustiness Low soil strength
4:	
Bata	Dustiness Water erosion Low soil strength Slope
25:	
Connah	Dustiness Low soil strength
26:	
Connah	Dustiness Low soil strength
27:	
Connah	Low soil strength
Water	Nonsoil material
28:	
Courville	Dustiness Low soil strength
29:	
Courville	Dustiness Low soil strength
30:	
Courville	Dustiness Water erosion Low soil strength Slope
31:	
Courville	Dustiness Low soil strength
32:	
Courville	Dustiness Low soil strength
33:	
Courville	Dustiness Water erosion Low soil strength Slope
34:	
Courville	Dustiness Low soil strength
Rumblecreek	Low soil strength
35:	
Craddock	Dustiness Low soil strength Slope
36:	
Craddock	Dustiness Low soil strength
37:	
Craddock	Dustiness Low soil strength
42:	
Dubay	Dustiness Low soil strength

MAIN FOREST ACCESS ROAD LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Forest access road limitations or hazards
43:	
Dubay	Dustiness Low soil strength
44:	
Eaglewing	Dustiness Low soil strength
45:	
Eaglewing	Dustiness Low soil strength
46:	
Eaglewing	Dustiness Low soil strength
48:	
Felan	Dustiness Low soil strength
49:	
Felan	Dustiness Water erosion Low soil strength Slope
50:	
Finleypoint	Low soil strength
51:	
Finleypoint	Low soil strength
52:	
Finleypoint	Low soil strength
53:	
Finleypoint	Water erosion Low soil strength Slope
54:	
Finleypoint	Low soil strength
55:	
Finleypoint	Low soil strength Slope
56:	
Finleypoint	Water erosion Low soil strength Slope
Wildgen	Low soil strength Slope
57:	
Flott	Low soil strength
58:	
Flott	Low soil strength
59:	
Flott	Low soil strength
60:	
Flott	Low soil strength Slope
61:	
Flott	Low soil strength Slope
68:	
Glaciercreek	Dustiness
69:	
Half Moon	Dustiness Low soil strength

MAIN FOREST ACCESS ROAD LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Forest access road limitations or hazards
70:	
Half Moon	Dustiness Low soil strength
Courville	Dustiness Low soil strength
71:	
Hogsby	Depth to rock Water erosion Low soil strength Slope
Finleypoint	Low soil strength Slope
73:	
Holloway	Dustiness
74:	
Holloway	Dustiness Slope
75:	
Holloway	Dustiness
76:	
Holloway	Dustiness Slope
77:	
Holloway	Areas of rock outcrop Dustiness
Rock outcrop	Nonsoil material
78:	
Holloway	Areas of rubble land Dustiness Water erosion Slope
Rubble land	Nonsoil material
90:	
Kingspoint	Low soil strength
91:	
Kingspoint	Low soil strength
92:	
Kingspoint	Low soil strength Slope
105:	
McDonald	Low soil strength Shrink swell potential
106:	
McDonald	Low soil strength Shrink swell potential
107:	
McDonald	Low soil strength Shrink swell potential
108:	
McDonald	Low soil strength Shrink swell potential
111:	
Mitten	Dustiness
112:	
Mitten	Dustiness Slope
113:	
Mitten	Dustiness Slope

MAIN FOREST ACCESS ROAD LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Forest access road limitations or hazards
114:	
Mitten	Areas of rock outcrop Dustiness Slope
Rock outcrop	Nonsoil material
116:	
Mollman	Low soil strength
117:	
Mollman	Low soil strength
118:	
Mollman	Low soil strength
119:	
Mollman	Low soil strength Slope
127:	
Phillcher	Dustiness Slope
128:	
Phillcher	Areas of rock outcrop Dustiness Water erosion Slope
Rock outcrop	Nonsoil material
138:	
Repp	Water erosion Low soil strength Slope
139:	
Repp	Areas of rock outcrop Water erosion Low soil strength Slope
Rock outcrop	Nonsoil material
150:	
Rumblecreek	Low soil strength
151:	
Rumblecreek	Low soil strength
152:	
Rumblecreek	Low soil strength
153:	
Rumblecreek	Water erosion Low soil strength Slope
154:	
Sacheen	None
155:	
Sacheen	None
156:	
Selon	Low soil strength
157:	
Selon	Low soil strength
158:	
Selon	Low soil strength
159:	
Selon	Low soil strength
162:	
Tevis	Slope

MAIN FOREST ACCESS ROAD LIMITATIONS AND HAZARDS--Continued

Soil name and map symbol	Forest access road limitations or hazards
163:	
Trapps	Low soil strength
164:	
Trapps	Low soil strength
172:	
Waldbillig	Dustiness Low soil strength
173:	
Waldbillig	Dustiness Water erosion Low soil strength Slope
179:	
Wildgen	Low soil strength
180:	
Wildgen	Low soil strength Slope
181:	
Wildgen	Low soil strength
Finleypoint	Low soil strength
182:	
Winfall	Low soil strength
183:	
Winfall	Low soil strength
184:	
Winfall	Low soil strength Slope
185:	
Winkler	Areas of rock outcrop Slope
Rock outcrop	Nonsoil material
186:	
Winkler	Slope
187:	
Winkler	Areas of rock outcrop Slope
Sharrott	Areas of rock outcrop Depth to rock Low soil strength Slope
Rock outcrop	Nonsoil material
190:	
Yellowbay	None
191:	
Yellowbay	None
192:	
Yellowbay	None

Recreation

The soils of the survey area are rated in the table "Recreational Development" according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, the ability of the soil to support vegetation, access to water, potential water impoundment sites, and either access to public sewer lines or the capacity of the soil to absorb septic tank effluent. Soils subject to flooding are limited, in varying degrees, for recreational uses by the duration of flooding and the season when it occurs. Onsite assessment of the height, duration, intensity, and frequency of flooding is essential in planning recreational facilities.

Camp areas are tracts of land used intensively as sites for tents, trailers, and campers and for outdoor activities that accompany such sites. These areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The soils are rated on the basis of soil properties that influence the ease of developing camp areas and performance of the areas after development. Also considered are the soil properties that influence trafficability and promote the growth of vegetation after heavy use.

Picnic areas are natural or landscaped tracts of land that are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The soils are rated on the basis of soil properties that influence the cost of shaping the site, trafficability, and the growth of vegetation after development. The surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry.

Playgrounds are areas used intensively for baseball, football, or similar activities. These areas require a nearly level soil that is free of stones and that can withstand heavy foot traffic and maintain an adequate cover of vegetation. The soils are rated on the basis of soil properties that influence the cost of shaping the site, trafficability, and the growth of vegetation. Slope and stoniness are the main concerns in developing playgrounds. The surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry.

Paths and trails are areas used for hiking and horseback riding. The areas should require little or no cutting and filling during site preparation. The soils are rated on the basis of soil properties that influence trafficability and erodibility. Paths and trails should remain firm under foot traffic and not be dusty when dry.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

The interpretive ratings in this table help engineers, planners, and others to understand how soil properties influence recreational uses. Ratings for proposed uses are given in terms of limitations. Only the most restrictive features are listed. Other features may limit a specific recreational use.

The degree of soil limitation is expressed as slight, moderate, or severe.

Slight means that soil properties are favorable for the rated use. The limitations are minor and can be easily overcome. Good performance and low maintenance are expected.

Moderate means that soil properties are moderately favorable for the rated use. The limitations can be overcome or modified by special planning, design, or maintenance. During some

part of the year, the expected performance may be less desirable than that of soils rated *slight*.

Severe means that soil properties are unfavorable for the rated use. Examples of limitations are slope, bedrock near the surface, flooding, and a seasonal high water table. These limitations generally require major soil reclamation, special design, or intensive maintenance. Overcoming the limitations generally is difficult and costly.

The information in the table "Recreational Development" can be supplemented by other information in this survey, for example, interpretations for dwellings without basements and for local roads and streets in the table "Building Site Development" and interpretations for septic tank absorption fields in the table "Sanitary Facilities."

RECREATIONAL DEVELOPMENT

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1: Aeric Haplaquepts.					
2: Badland.					
3: Bata----------	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
4: Bata----------	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
5: Belton----------	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
6: Belton----------	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Severe: erodes easily	Severe: excess sodium
7: Belton----------	Severe: slope, excess sodium	Severe: slope, excess sodium	Severe: slope, excess sodium	Severe: slope, erodes easily	Severe: excess sodium, slope
8: Belton----------	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
Kerl----------	Moderate: dusty	Moderate: dusty	Moderate: slope, small stones, dusty	Moderate: dusty	Moderate: large stones
9: Belton----------	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Moderate: dusty	Severe: excess sodium
Kerl----------	Moderate: dusty	Moderate: dusty	Severe: slope	Moderate: dusty	Moderate: large stones
10: Bigarm----------	Severe: slope	Severe: slope	Severe: large stones, slope, small stones	Moderate: large stones, slope, dusty	Severe: slope
11: Bigarm----------	Severe: slope	Severe: slope	Severe: large stones, slope, small stones	Moderate: large stones, slope, dusty	Severe: slope
12: Bigarm----------	Moderate: slope, small stones, dusty	Moderate: slope, small stones, dusty	Severe: slope, small stones	Moderate: dusty	Moderate: small stones, large stones, droughty
13: Bigarm----------	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
Hogsby----------	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: slope, depth to rock
Rock outcrop.					

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
14:					
Bigarm----------	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
Rubble land.					
15:					
Bigarm----------	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: small stones, slope
Hogsby----------	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: slope, depth to rock
Rock outcrop.					
16:					
Bigarm----------	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
Rock outcrop.					
Rubble land.					
17:					
Bohnly----------	Severe: flooding, wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
18:					
Bolack----------	Severe: flooding, wetness	Moderate: wetness, percs slowly	Severe: wetness	Moderate: wetness	Moderate: wetness, flooding
19:					
Borohemists.					
20:					
Bowlake---------	Moderate: small stones, dusty	Moderate: small stones, dusty	Severe: slope, small stones	Moderate: dusty	Moderate: small stones, large stones
21:					
Bowlake---------	Moderate: slope, small stones, dusty	Moderate: slope, small stones, dusty	Severe: slope, small stones	Moderate: dusty	Moderate: small stones, large stones, slope
Minesinger------	Moderate: slope, small stones, dusty	Moderate: slope, small stones, dusty	Severe: slope, small stones	Moderate: dusty	Moderate: small stones, large stones, droughty
22:					
Colake----------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
23:					
Colake----------	Moderate: wetness	Moderate: wetness	Moderate: wetness	Slight	Slight
24:					
Colake----------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: wetness
Sacheen---------	Moderate: too sandy	Moderate: too sandy	Moderate: slope, too sandy	Moderate: too sandy	Moderate: droughty
25:					
Connah----------	Moderate: large stones, dusty	Moderate: large stones, dusty	Severe: large stones, slope	Moderate: dusty	Moderate: large stones

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
26:					
Connah	Moderate: dusty	Moderate: dusty	Moderate: small stones, dusty	Moderate: dusty	Moderate: large stones
27:					
Connah	Slight	Slight	Moderate: slope, small stones	Slight	Moderate: large stones
Water.					
28:					
Courville	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Moderate: small stones, large stones, slope
29:					
Courville	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
30:					
Courville	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
31:					
Courville	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Moderate: small stones, large stones, droughty
32:					
Courville	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
33:					
Courville	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
34:					
Courville	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
Rumblecreek	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
35:					
Craddock	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
36:					
Craddock	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
37:					
Craddock	Severe: slope	Severe: slope	Severe: slope	Moderate: slope	Severe: slope
38:					
Doker	Severe: flooding, wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
39:					
Dryfork	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
40:					
Dryfork---------	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
Selow----------	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
41:					
Dryfork---------	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
Selow----------	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Severe: erodes easily	Severe: excess sodium
42:					
Dubay----------	Moderate: dusty	Moderate: dusty	Moderate: small stones, dusty	Moderate: dusty	Slight
43:					
Dubay----------	Moderate: dusty	Moderate: dusty	Moderate: slope, small stones, dusty	Moderate: dusty	Slight
44:					
Eaglewing-------	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Moderate: small stones, large stones, slope
45:					
Eaglewing-------	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
46:					
Eaglewing-------	Slight	Slight	Moderate: slope, small stones	Slight	Slight
47:					
Esteslake-------	Moderate: percs slowly	Moderate: percs slowly	Moderate: slope, percs slowly	Slight	Moderate: droughty
Slickspots.					
48:					
Felan----------	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
49:					
Felan----------	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
50:					
Finleypoint-----	Moderate: large stones	Moderate: large stones	Severe: large stones	Moderate: large stones	Moderate: large stones, droughty
51:					
Finleypoint-----	Moderate: slope, large stones	Moderate: slope, large stones	Severe: large stones, slope	Moderate: large stones	Moderate: large stones, droughty, slope
52:					
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
53:					
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
54:					
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
55:					
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
56:					
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
Wildgen---------	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
57:					
Flott----------	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, large stones, droughty
58:					
Flott----------	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Moderate: small stones, large stones, droughty
59:					
Flott----------	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
60:					
Flott----------	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
61:					
Flott----------	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
62:					
Gardencreek-----	Severe: flooding	Slight	Slight	Slight	Slight
63:					
Gird----------	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
64:					
Gird----------	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
65:					
Gird----------	Severe: flooding	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
Dryfork---------	Severe: flooding	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
66:					
Gird----------	Moderate: dusty	Moderate: dusty	Severe: slope	Moderate: dusty	Slight
Vincom----------	Moderate: dusty	Moderate: dusty	Severe: slope	Moderate: dusty	Slight
67:					
Gird----------	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Moderate: dusty	Moderate: slope
Vincom----------	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
68:					
Glaciercreek----	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Severe: droughty
69:					
Half Moon-------	Slight	Slight	Moderate: slope	Slight	Moderate: large stones
70:					
Half Moon-------	Moderate: slope	Moderate: slope	Severe: slope	Severe: erodes easily	Moderate: large stones, slope
Courville-------	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Moderate: small stones, large stones, slope
71:					
Hogsby----------	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: slope, depth to rock
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
72:					
Hogsby----------	Severe: slope, depth to rock	Severe: slope, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope	Severe: slope, depth to rock
Rock outcrop.					
73:					
Holloway--------	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
74:					
Holloway--------	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
75:					
Holloway--------	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
76:					
Holloway--------	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
77:					
Holloway--------	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
Rock outcrop.					
78:					
Holloway--------	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
Rubble land.					
79:					
Irvine----------	Moderate: slope, percs slowly, too clayey	Moderate: slope, too clayey, percs slowly	Severe: slope	Severe: erodes easily	Severe: too clayey
80:					
Irvine----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope, erodes easily	Severe: slope, too clayey

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
81:					
Jocko	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, large stones, droughty
82:					
Jocko	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Moderate: small stones, large stones, droughty
83:					
Jocko	Moderate: large stones, small stones	Moderate: large stones, small stones	Severe: large stones, small stones	Moderate: large stones	Severe: droughty
84:					
Kerl	Moderate: dusty	Moderate: dusty	Moderate: slope, small stones, dusty	Moderate: dusty	Moderate: large stones
85:					
Kerl	Moderate: dusty	Moderate: dusty	Severe: slope	Moderate: dusty	Moderate: large stones
86:					
Kerrdam	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
87:					
Kerrdam	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
88:					
Kerrdam	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
Vincom	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
89:					
Kerrdam	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
Vincom	Severe: slope	Severe: slope	Severe: slope	Severe: erodes easily	Severe: slope
90:					
Kingspoint	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Moderate: small stones, large stones, slope
91:					
Kingspoint	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Moderate: slope	Severe: small stones, slope
92:					
Kingspoint	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
93:					
Lamoose	Severe: flooding, wetness	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness
94:					
Lonepine	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
95:					
Lonepine	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
96:					
Lonepine--------	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
97:					
Lonepine--------	Moderate: dusty	Moderate: dusty	Severe: slope	Moderate: dusty	Slight
Vincom----------	Moderate: dusty	Moderate: dusty	Severe: slope	Moderate: dusty	Slight
98:					
Lonepine--------	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
Vincom----------	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
99:					
Marklepass------	Moderate: percs slowly	Moderate: percs slowly	Moderate: percs slowly	Slight	Moderate: droughty
100:					
Marklepass------	Moderate: percs slowly	Moderate: percs slowly	Moderate: percs slowly	Slight	Moderate: droughty
Slickspots.					
101:					
McCollum--------	Slight	Slight	Slight	Slight	Slight
102:					
McCollum--------	Slight	Slight	Moderate: slope	Slight	Slight
103:					
McCollum--------	Slight	Slight	Severe: slope	Slight	Slight
104:					
McCollum--------	Slight	Slight	Slight	Slight	Slight
105:					
McDonald--------	Moderate: large stones, small stones	Moderate: large stones, small stones	Severe: large stones, small stones	Moderate: large stones	Moderate: small stones, large stones
106:					
McDonald--------	Moderate: large stones, small stones	Moderate: large stones, small stones	Severe: large stones, slope, small stones	Moderate: large stones	Moderate: small stones, large stones
107:					
McDonald--------	Moderate: slope, large stones, small stones	Moderate: slope, large stones, small stones	Severe: large stones, slope, small stones	Moderate: large stones	Moderate: small stones, large stones, slope
108:					
McDonald--------	Slight	Slight	Moderate: small stones	Slight	Moderate: large stones
109:					
Minesinger------	Moderate: slope, small stones, dusty	Moderate: slope, small stones, dusty	Severe: slope, small stones	Moderate: dusty	Moderate: small stones, large stones, droughty
110:					
Minesinger------	Severe: slope	Severe: slope	Severe: large stones, slope, small stones	Severe: slope	Severe: large stones, slope

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
110 (con.):					
Walstead	Severe: slope	Severe: slope	Severe: large stones, slope, small stones	Severe: slope	Severe: large stones, slope
111:					
Mitten	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
112:					
Mitten	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
113:					
Mitten	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
114:					
Mitten	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
Rock outcrop.					
115:					
Moiese	Moderate: dusty	Moderate: dusty	Moderate: small stones, dusty	Moderate: dusty	Moderate: droughty
116:					
Mollman	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, large stones
117:					
Mollman	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Moderate: small stones, large stones, slope
118:					
Mollman	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
119:					
Mollman	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
120:					
Niarada	Moderate: small stones, dusty	Moderate: small stones, dusty	Severe: small stones	Moderate: dusty	Moderate: small stones, large stones, droughty
121:					
Niarada	Moderate: small stones, dusty	Moderate: small stones, dusty	Severe: slope, small stones	Moderate: dusty	Moderate: small stones, large stones, droughty
122:					
Niarada	Moderate: slope, small stones, dusty	Moderate: slope, small stones, dusty	Severe: slope, small stones	Moderate: dusty	Moderate: small stones, large stones, droughty
123:					
Niarada	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope, dusty	Severe: slope
124:					
Niarada	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
125:					
Niarada	Moderate: slope, small stones, dusty	Moderate: slope, small stones, dusty	Severe: slope, small stones	Moderate: dusty	Moderate: small stones, large stones, droughty
Kerl	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Moderate: dusty	Moderate: large stones, slope
126:					
Ninepipe	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
127:					
Phillcher	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
128:					
Phillcher	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
Rock outcrop.					
129:					
Pits.					
130:					
Polson	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
131:					
Polson	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
132:					
Polson	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Moderate: dusty	Severe: excess sodium
Vincom	Moderate: dusty	Moderate: dusty	Severe: slope	Moderate: dusty	Slight
133:					
Post	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
134:					
Post	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
135:					
Post	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Slight	Severe: excess sodium
136:					
Post	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
Ronan	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
Water.					
137:					
Post	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Severe: erodes easily	Severe: excess sodium
Ronan	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Severe: erodes easily	Severe: excess sodium
Water.					

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
138:					
Repp	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
139:					
Repp	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
Rock outcrop.					
140:					
Rock outcrop.					
Rubble land.					
141:					
Ronan	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
142:					
Ronan	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
143:					
Ronan	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Slight	Severe: excess sodium
144:					
Round Butte	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
145:					
Round Butte	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
146:					
Round Butte	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Slight	Severe: excess sodium
147:					
Round Butte	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
148:					
Round Butte	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
Irvine	Moderate: percs slowly	Moderate: percs slowly	Severe: slope	Slight	Moderate: large stones, droughty
149:					
Round Butte	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Severe: erodes easily	Severe: excess sodium
Irvine	Moderate: slope, percs slowly	Moderate: slope, percs slowly	Severe: slope	Severe: erodes easily	Moderate: large stones, droughty, slope
150:					
Rumblecreek	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, droughty
151:					
Rumblecreek	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Moderate: small stones, droughty, slope
152:					
Rumblecreek	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
153:					
Rumblecreek-----	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
154:					
Sacheen---------	Severe: too sandy	Severe: too sandy	Severe: slope, too sandy	Severe: too sandy	Moderate: droughty
155:					
Sacheen---------	Moderate: too sandy	Moderate: too sandy	Moderate: slope, too sandy	Moderate: too sandy	Moderate: droughty
156:					
Selon----------	Slight	Slight	Moderate: small stones	Slight	Slight
157:					
Selon----------	Slight	Slight	Moderate: slope, small stones	Slight	Slight
158:					
Selon----------	Slight	Slight	Severe: slope	Slight	Slight
159:					
Selon----------	Moderate: slope	Moderate: slope	Severe: slope	Slight	Moderate: slope
160:					
Selow----------	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
161:					
Selow----------	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Slight	Severe: excess sodium
162:					
Tevis----------	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: small stones, droughty, slope
163:					
Trapps----------	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Moderate: small stones, droughty, slope
164:					
Trapps----------	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
165:					
Truscreek-------	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
166:					
Truscreek-------	Moderate: dusty	Moderate: dusty	Moderate: dusty	Moderate: dusty	Slight
Polson----------	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
167:					
Truscreek-------	Moderate: dusty	Moderate: dusty	Moderate: slope, dusty	Moderate: dusty	Slight
Polson----------	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
168:					
Truscreek-------	Moderate: dusty	Moderate: dusty	Severe: slope	Moderate: dusty	Slight

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
168 (con.):					
Polson----------	Severe: excess sodium	Severe: excess sodium	Severe: slope, excess sodium	Moderate: dusty	Severe: excess sodium
169:					
Typic Haplaquepts.					
170:					
Vincom----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope, erodes easily	Severe: slope
171:					
Vincom----------	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
Lonepine--------	Moderate: slope, dusty	Moderate: slope, dusty	Severe: slope	Severe: erodes easily	Moderate: slope
172:					
Waldbillig------	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
173:					
Waldbillig------	Severe: slope	Severe: slope	Severe: slope, small stones	Severe: slope	Severe: slope
174:					
Walstead--------	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, large stones, droughty
175:					
Walstead--------	Moderate: small stones	Moderate: small stones	Severe: small stones	Slight	Moderate: small stones, large stones, droughty
176:					
Walstead--------	Moderate: slope, small stones	Moderate: slope, small stones	Severe: slope, small stones	Slight	Moderate: small stones, large stones, droughty
177:					
Walstead--------	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: large stones, slope	Severe: slope
Rock outcrop.					
178:					
Whitearth-------	Severe: excess sodium	Severe: excess sodium	Severe: excess sodium	Moderate: dusty	Severe: excess sodium
Esteslake-------	Moderate: percs slowly	Moderate: percs slowly	Moderate: slope, percs slowly	Slight	Moderate: droughty
179:					
Wildgen---------	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
180:					
Wildgen---------	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope	Severe: small stones, slope
181:					
Wildgen---------	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
181 (con.):					
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope, small stones	Moderate: slope	Severe: slope
182:					
Winfall---------	Severe: small stones	Severe: small stones	Severe: slope, small stones	Severe: small stones	Severe: small stones
183:					
Winfall---------	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: small stones	Severe: small stones, slope
184:					
Winfall---------	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: small stones, slope
185:					
Winkler---------	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: small stones, droughty, slope
Rock outcrop.					
186:					
Winkler---------	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: small stones, droughty, slope
187:					
Winkler---------	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Severe: small stones, droughty, slope
Sharrott--------	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones, depth to rock	Severe: slope, small stones	Severe: small stones, slope, depth to rock
Rock outcrop.					
188:					
Xerofluvents.					
189:					
Xerofluvents.					
190:					
Yellowbay-------	Severe: small stones	Severe: small stones	Severe: small stones	Moderate: dusty	Severe: small stones, droughty
191:					
Yellowbay-------	Severe: small stones	Severe: small stones	Severe: slope, small stones	Moderate: dusty	Severe: small stones, droughty
192:					
Yellowbay-------	Severe: slope, small stones	Severe: slope, small stones	Severe: slope, small stones	Moderate: slope, dusty	Severe: small stones, droughty, slope

Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. If food, cover, or water is missing, inadequate, or inaccessible, wildlife will be scarce or will not inhabit the area.

If the soils have potential for habitat development, wildlife habitat can be created or improved by planting appropriate vegetation, properly managing the existing plant cover, and fostering the natural establishment of desirable plants.

Elements of Wildlife Habitat

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants used by wildlife. Examples are wheat, rye, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes planted for wildlife food and cover. Examples are fescue, bromegrass, timothy, orchardgrass, clover, alfalfa, trefoil, reed canarygrass, and crownvetch.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds, that provide food and cover for wildlife. Examples are bluestem, indiangrass, blueberry, goldenrod, lambsquarters, dandelions, blackberry, ragweed, wheatgrass, fescue, and nightshade.

The major soil properties affecting the growth of grain and forage crops and wild herbaceous plants are depth of the root zone, texture of the surface layer, the amount of water available to plants, wetness, salinity or sodicity, and flooding. The length of the growing season also is important.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage that wildlife eat. Examples are oak, poplar, boxelder, birch, maple, green ash, willow, and American elm. Examples of fruit-producing shrubs that are suitable for planting on soils that have good potential for these plants are hawthorn, honeysuckle, American plum, redosier dogwood, chokecherry, serviceberry, silver buffaloberry, and crabapple.

Coniferous plants are cone-bearing trees, shrubs, or ground cover that provides habitat or supplies food in the form of browse, seed, or fruitlike cones. Examples are pine, spruce, hemlock, fir, yew, cedar, larch, and juniper.

The major soil properties affecting the growth of hardwood and coniferous trees and shrubs are depth of the root zone, the amount of water available to plants, and wetness.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Wetland plants produce food or cover for wetland wildlife. Examples of these plants are smartweed, wild millet, rushes, sedges, bulrushes, wild rice, arrowhead, waterplantain, pickerelweed, and cattail.

The major soil properties affecting wetland plants are texture of the surface layer, wetness, acidity or alkalinity, and slope.

Shallow water areas have an average depth of less than 5 feet. They are useful as habitat for some wildlife species. They are naturally wet areas or are created by dams, levees, or water-control measures in marshes or streams. Examples are muskrat marshes, waterfowl feeding areas, wildlife watering developments, beaver ponds, and other wildlife ponds.

The major soil properties affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability.

Kinds of Wildlife Habitat

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, and shrubs. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The wildlife attracted to these areas include Hungarian

partridge, pheasant, sharp-tailed grouse, sage grouse, meadowlark, field sparrow, killdeer, cottontail rabbit, and red fox.

Habitat for woodland wildlife consists of areas of hardwoods or conifers or a mixture of these and associated grasses, legumes, and wild herbaceous plants. The wildlife attracted to this habitat include wild turkey, ruffed grouse, thrushes, woodpeckers, owls, tree squirrels, porcupine, raccoon, deer, elk, and black bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas that support water-tolerant plants. The wildlife attracted to this habitat include ducks, geese, herons, bitterns, rails, kingfishers, muskrat, otter, mink, and beaver.

Habitat for rangeland wildlife consists of areas of shrubs and wild herbaceous plants. The wildlife attracted to rangeland include antelope, deer, sage grouse, meadowlark, and lark bunting.

Wildlife of Lake County Area

This survey area provides a diversity of habitats for wildlife, such as, coniferous forests, mountains (from rolling uplands to glaciated peaks), grasslands, riparian woodlands, irrigated and nonirrigated cropland, streams, rivers, ponds, marshes, and reservoirs.

Moose are in the extreme northwestern corner of the survey area. In the summer and fall they use the spruce, fir, and larch forests extensively. Moose winter ranges are along drainages at lower elevations where they utilize a variety of willows and other deciduous shrubs and trees. Important components of their spring and summer diet are forbs and often aquatic plants.

Rocky Mountain elk occur in mountain ranges in the northwest part of the county and along the southern and eastern boundaries. Elk habitats are classed as either grass or browse ranges on the basis of winter food availability. Browse ranges are predominate in the mountains of the area. Elk spend their summers and falls at relatively high elevations where moist lush forest growth intersperses with grassy mountain meadows. In forested environments, elk thrive best during the shrub stage of plant succession. As trees replace the shrubs of old burns and clear-cut areas, the elk numbers decline.

Both white-tailed and mule deer are located throughout the Lake County area. Whitetails generally inhabit the lowlands and valleys, stream bottoms, and foothills. Whitetail winter ranges are along foot slopes of the Mission Mountains on the east side of the survey area. Mule deer occur throughout the area, especially at the mid to high elevations, and along foothills of major mountain ranges.

Populations of Rocky Mountain bighorn sheep reside on Wildhorse Island in Flathead Lake, and on the National Bison Range in the southwestern corner of the county.

Pronghorn antelope inhabit open, rolling grassland prairies in the extreme southwestern part of the survey area.

The Bison Range is habitat to a herd of about 300 bison. Populations of Rocky Mountain goats are also on the range, as well as in the Mission Mountains along the east edge of the area. Black bear are common in forests of the northwest. They are also in, and near the Mission Range. Additionally, the Mission Range is inhabited by the grizzly bear, who are a threatened species.

Ring-necked pheasant and gray partridge are on farmlands of the southern half of the survey area. These introduced birds are supported by a varied land use pattern that includes small grain, irrigated and dry cropland, annual weeds, brushy cover, and cattail marshes.

Land management practices beneficial to pheasants and gray partridge include proper grazing use, protection of woody cover from burning or eradication, and the retention of stubble and waste grain during winter, through elimination of fall tillage. Field hedgerows and shelterbelts are beneficial to pheasant and partridge. They provide woody cover for shelter and winter food supply. Bottomlands that support habitat for ringnecks include irrigated and dry cropland, brushy ditchbanks, cattail marshes, and brushy drainageways.

Three species of forest grouse (blue, spruce, and ruffed) are in the coniferous forests and riparian woodlands of the survey area. A variety of habitat is important to forest grouse throughout the seasons of the year. Blue grouse winter at high elevations. They descend to semi-open timber early in the spring for breeding, nesting, and rearing of chick. Ruffed grouse inhabit dense cover of conifers and deciduous trees and shrubs and are most often found along stream courses.

Blue grouse are closely associated with the distribution patterns of Douglas-fir and true firs, and the soil associations that support forests with these species as components. Mixed forests, brushy draws, stream bottoms, and grazeable woodlands provide habitat for forest grouse within the Lake County area.

The many marshes, sloughs, ponds, potholes, and reservoirs in the survey area provide an array of habitats for waterfowl during both spring and

fall migration, and during the summer production period. Ducks, geese, and a wide variety of shore and marsh birds use these water bodies for resting, nesting, and brood rearing. Two national wildlife refuges and a state wildlife management area are managed to attract waterfowl throughout the year.

Beaver, mink, and muskrat are throughout the principal watercourses. Badgers, ground squirrels, coyotes, bobcats, and a variety of small mammals are located throughout the entire survey area.

Populations of game and nongame species can be enhanced through application of conservation practices that improve habitat. Among these are development of odd or irregularly shaped areas in, and adjacent to, farmland, protection of such areas from fire or grazing, and the establishment of woody vegetation that provides winter shelter. Wildlife may also be enhanced through increased application of commonly employed conservation practices such as proper grazing, planned grazing systems, minimum tillage, field windbreaks, and the construction of ponds.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the "Soil Properties" section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 or 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

The table "Building Site Development" shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features generally are favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging, filling, and compacting is affected by the depth to bedrock, a cemented pan, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and depth to the water table.

Dwellings and *small commercial buildings* are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrinking and swelling, and organic layers can cause the movement of footings. A high water table, depth to bedrock or to a cemented pan, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 or 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or stabilized soil material; and a flexible or rigid surface. Cuts and fills generally are limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock or to a cemented pan, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, potential for frost action, and depth to a high water table affect the traffic-supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

The table "Sanitary Facilities" shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. It also shows the suitability of the soils for use as a daily cover for landfill.

Soil properties are important in selecting sites for sanitary facilities and in identifying limiting soil properties and site features to be considered in planning, design, and installation. Soil limitation ratings of *slight, moderate,* or *severe* are given for septic tank absorption fields, sewage lagoons, and trench and area sanitary landfills. Soil suitability ratings of *good, fair,* and *poor* are given for daily cover for landfill.

A rating of *slight* or *good* indicates that the soils have no limitations or that the limitations can be easily overcome. Good performance and low maintenance can be expected. A rating of *moderate* or *fair* indicates that the limitations should be recognized but generally can be overcome by good management or special design. A rating of *severe* or *poor* indicates that overcoming the limitations is difficult or impractical. Increased maintenance may be required.

Septic tank absorption fields are areas in which subsurface systems of tile or perforated pipe distribute effluent from a septic tank into the natural soil. The centerline of the tile is assumed to be at a depth of 24 inches. Only the part of the soil between depths of 24 and 60 inches is considered in making the ratings. The soil properties and site features considered are those that affect the absorption of the effluent, those that affect the construction and maintenance of the system, and those that may affect public health.

The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock or to a cemented pan, and flooding affect absorption of the effluent. Large stones and bedrock or a cemented pan interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand

and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted, relatively impervious soil material. Aerobic lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Relatively impervious soil material for the lagoon floor and sides is desirable to minimize seepage and contamination of local ground water.

The table "Sanitary Facilities" gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock or to a cemented pan, flooding, large stones, and content of organic matter.

Excessive seepage resulting from rapid permeability in the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and cemented pans can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Trench sanitary landfill is an area where solid waste is disposed of by placing refuse in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil that is excavated from the trench. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. Soil properties that influence the risk of pollution, the ease of excavation, trafficability, and revegetation are the major considerations in rating the soils.

Area sanitary landfill is an area where solid waste is disposed of by placing refuse in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil that is imported from a source away from the site. A final cover of soil at least 2 feet thick is placed over the completed landfill. Soil properties that influence trafficability, revegetation, and the risk of pollution are the main considerations in rating the soils for area sanitary landfills.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground-water pollution. The ratings in the table "Sanitary Facilities" are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock or to a cemented pan, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The suitability of a soil for use as cover is based on properties that affect workability and the ease of digging, moving, and spreading the material over the refuse daily during both wet and dry periods.

Soil texture, wetness, rock fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, a cemented pan, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Waste Management

Soil properties are important when organic waste is applied as fertilizer and wastewater is applied in irrigated areas. They also are important when the soil is used as a medium for the

treatment and disposal of the organic waste and wastewater. Unfavorable soil properties can result in environmental damage.

The use of organic waste and wastewater as production resources results in energy and resource conservation and minimizes the problems associated with waste disposal. If disposal is the goal, applying a maximum amount of the organic waste or the wastewater to a minimal area holds costs to a minimum and environmental damage is the main hazard. If reuse is the goal, a minimum amount should be applied to a maximum area and environmental damage is unlikely.

Interpretations developed for waste management may include ratings for manure- and food-processing waste, municipal sewage sludge, use of wastewater for irrigation, and treatment of wastewater by slow rate, overland flow, and rapid infiltration processes.

Specific information regarding waste management is available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Construction Materials

The table "Construction Materials" gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good, fair,* or *poor* as a source of roadfill and topsoil. They are rated as a *probable* or *improbable* source of sand and gravel.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In the table "Construction Materials," the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help to determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, a low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have a moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have one or more of the following characteristics: a plasticity index of more than 10, a high shrink-swell potential, many stones, slopes of more than 25 percent, or a water table at a depth of less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and *gravel* are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In the table "Construction Materials," only the probability of finding material in suitable quantity in or below the soil is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock

fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal high water table at or near the surface.

The surface layer of most soils generally is preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

The table "Water Management" gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The limitations are considered *slight* if soil properties and site features generally are favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In the table "Water Management," the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even more than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock, to a cemented pan, or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and the potential for frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock or to a cemented pan, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, and sulfur.

Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock or to a cemented pan. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to control erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock or to a cemented pan affect the construction of terraces and diversions. A restricted rooting depth, a severe hazard of soil blowing or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock or to a cemented pan affect the construction of grassed waterways. A hazard of soil blowing, low available water capacity, restricted rooting depth, toxic substances such as salts and sodium, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

BUILDING SITE DEVELOPMENT

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1: Aeric Haplaquepts.						
2: Badland.						
3: Bata----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
4: Bata----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
5: Belton----------	Moderate: too clayey	Slight	Slight	Slight	Moderate: low strength, frost action	Severe: excess sodium
6: Belton----------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: low strength, slope, frost action	Severe: excess sodium
7: Belton----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: excess sodium, slope
8: Belton----------	Moderate: too clayey	Slight	Slight	Slight	Moderate: low strength, frost action	Severe: excess sodium
Kerl----------	Slight	Slight	Slight	Slight	Moderate: frost action	Moderate: large stones
9: Belton----------	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium
Kerl----------	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: large stones
10: Bigarm----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
11: Bigarm----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
12: Bigarm----------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, large stones, droughty
13: Bigarm----------	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Hogsby----------	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Rock outcrop.						
14: Bigarm----------	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rubble land.						

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
15:						
Bigarm----------	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
Hogsby----------	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Rock outcrop.						
16:						
Bigarm----------	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock outcrop.						
Rubble land.						
17:						
Bohnly----------	Severe: cutbanks cave, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: wetness, flooding, frost action	Severe: wetness
18:						
Bolack----------	Severe: wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: low strength, flooding, frost action	Moderate: wetness, flooding
19:						
Borohemists.						
20:						
Bowlake---------	Moderate: too clayey	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, large stones
21:						
Bowlake---------	Moderate: too clayey, slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Moderate: small stones, large stones, slope
Minesinger------	Moderate: too clayey, large stones, slope	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, frost action, large stones	Moderate: small stones, large stones, droughty
22:						
Colake----------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Moderate: low strength, wetness, frost action	Moderate: wetness
23:						
Colake----------	Severe: wetness	Moderate: wetness	Severe: wetness	Moderate: wetness	Moderate: low strength, wetness, frost action	Slight
24:						
Colake----------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Moderate: low strength, wetness, frost action	Moderate: wetness
Sacheen---------	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
25:						
Connah----------	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Moderate: large stones
26:						
Connah----------	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Moderate: large stones

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
27:						
Connah	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Moderate: large stones
Water.						
28:						
Courville	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, large stones, slope
29:						
Courville	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
30:						
Courville	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
31:						
Courville	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, large stones, droughty
32:						
Courville	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
33:						
Courville	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
34:						
Courville	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rumblecreek	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
35:						
Craddock	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
36:						
Craddock	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
37:						
Craddock	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
38:						
Doker	Severe: wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: wetness, flooding	Severe: wetness
39:						
Dryfork	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
40:						
Dryfork	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
Selow	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Severe: excess sodium
41:						
Dryfork	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
Selow	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Severe: excess sodium

BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
42:						
Dubay----------	Slight	Slight	Slight	Slight	Severe: frost action	Slight
43:						
Dubay----------	Slight	Slight	Slight	Moderate: slope	Severe: frost action	Slight
44:						
Eaglewing-------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, large stones, slope
45:						
Eaglewing-------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
46:						
Eaglewing-------	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
47:						
Esteslake-------	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Moderate: droughty
Slickspots.						
48:						
Felan----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
49:						
Felan----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
50:						
Finleypoint-----	Moderate: large stones	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: frost action, large stones	Moderate: large stones, droughty
51:						
Finleypoint-----	Moderate: large stones, slope	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, frost action, large stones	Moderate: large stones, droughty, slope
52:						
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
53:						
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
54:						
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
55:						
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
56:						
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Wildgen---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
57:						
Flott----------	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, large stones, droughty
58:						
Flott----------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, large stones, droughty

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
59:						
Flott----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
60:						
Flott----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
61:						
Flott----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
62:						
Gardencreek-----	Moderate: too clayey, wetness	Severe: flooding	Severe: flooding	Severe: flooding	Severe: low strength	Slight
63:						
Gird----------	Slight	Slight	Slight	Slight	Severe: frost action	Slight
64:						
Gird----------	Slight	Slight	Slight	Slight	Severe: frost action	Slight
65:						
Gird----------	Moderate: wetness	Severe: flooding	Severe: flooding	Severe: flooding	Severe: frost action	Slight
Dryfork---------	Moderate: wetness	Severe: flooding	Severe: flooding	Severe: flooding	Severe: frost action	Slight
66:						
Gird----------	Slight	Slight	Slight	Moderate: slope	Severe: frost action	Slight
Vincom----------	Slight	Slight	Slight	Moderate: slope	Moderate: low strength, frost action	Slight
67:						
Gird----------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: frost action	Moderate: slope
Vincom----------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: low strength, slope, frost action	Moderate: slope
68:						
Glaciercreek----	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: large stones	Moderate: large stones	Severe: droughty
69:						
Half Moon-------	Moderate: too clayey	Slight	Slight	Slight	Moderate: frost action	Moderate: large stones
70:						
Half Moon-------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Moderate: large stones, slope
Courville-------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, large stones, slope
71:						
Hogsby----------	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
72:						
Hogsby----------	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock
Rock outcrop.						
73:						
Holloway--------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
74:						
Holloway--------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
75:						
Holloway--------	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
76:						
Holloway--------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
77:						
Holloway--------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock outcrop.						
78:						
Holloway--------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rubble land.						
79:						
Irvine----------	Moderate: too clayey, slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Severe: too clayey
80:						
Irvine----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: low strength, slope	Severe: slope, too clayey
81:						
Jocko----------	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: large stones	Moderate: large stones	Moderate: small stones, large stones, droughty
82:						
Jocko----------	Severe: cutbanks cave	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, large stones	Moderate: small stones, large stones, droughty
83:						
Jocko----------	Severe: cutbanks cave	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Moderate: large stones	Severe: droughty
84:						
Kerl----------	Slight	Slight	Slight	Slight	Moderate: frost action	Moderate: large stones
85:						
Kerl----------	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: large stones
86:						
Kerrdam---------	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Slight
87:						
Kerrdam---------	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
88:						
Kerrdam	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
Vincom	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: low strength, slope, frost action	Moderate: slope
89:						
Kerrdam	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Vincom	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
90:						
Kingspoint	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, large stones, slope
91:						
Kingspoint	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
92:						
Kingspoint	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
93:						
Lamoose	Severe: cutbanks cave, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: wetness, flooding, frost action	Severe: wetness
94:						
Lonepine	Slight	Slight	Slight	Slight	Severe: low strength	Slight
95:						
Lonepine	Slight	Slight	Slight	Slight	Severe: low strength	Slight
96:						
Lonepine	Slight	Slight	Slight	Moderate: slope	Severe: low strength	Slight
97:						
Lonepine	Slight	Slight	Slight	Moderate: slope	Severe: low strength	Slight
Vincom	Slight	Slight	Slight	Moderate: slope	Moderate: low strength, frost action	Slight
98:						
Lonepine	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Moderate: slope
Vincom	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: low strength, slope, frost action	Moderate: slope
99:						
Marklepass	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Moderate: droughty
100:						
Marklepass	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Moderate: droughty
Slickspots.						

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
101:						
McCollum--------	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Slight
102:						
McCollum--------	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Slight
103:						
McCollum--------	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
104:						
McCollum--------	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Slight
105:						
McDonald--------	Moderate: too clayey, large stones	Moderate: large stones	Moderate: large stones	Moderate: large stones	Severe: low strength	Moderate: small stones, large stones
106:						
McDonald--------	Moderate: too clayey, large stones	Moderate: large stones	Moderate: large stones	Moderate: slope, large stones	Severe: low strength	Moderate: small stones, large stones
107:						
McDonald--------	Moderate: too clayey, large stones, slope	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Severe: low strength	Moderate: small stones, large stones, slope
108:						
McDonald--------	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Moderate: large stones
109:						
Minesinger------	Moderate: too clayey, large stones, slope	Moderate: slope, large stones	Moderate: slope, large stones	Severe: slope	Moderate: slope, frost action, large stones	Moderate: small stones, large stones, droughty
110:						
Minesinger------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: large stones, slope
Walstead--------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: large stones, slope
111:						
Mitten----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
112:						
Mitten----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
113:						
Mitten----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
114:						
Mitten----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
Rock outcrop.						
115:						
Moiese----------	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Moderate: droughty
116:						
Mollman---------	Slight	Slight	Slight	Slight	Moderate: frost action	Moderate: small stones, large stones

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
117: Mollman---------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, large stones, slope
118: Mollman---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
119: Mollman---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
120: Niarada---------	Slight	Slight	Slight	Slight	Moderate: frost action	Moderate: small stones, large stones, droughty
121: Niarada---------	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, large stones, droughty
122: Niarada---------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, large stones, droughty
123: Niarada---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
124: Niarada---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
125: Niarada---------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, large stones, droughty
Kerl----------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: large stones, slope
126: Ninepipe--------	Moderate: wetness	Slight	Moderate: wetness	Slight	Severe: frost action	Slight
127: Phillcher-------	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
128: Phillcher-------	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock outcrop.						
129: Pits.						
130: Polson----------	Slight	Slight	Slight	Slight	Severe: low strength, frost action	Severe: excess sodium
131: Polson----------	Slight	Slight	Slight	Slight	Severe: low strength, frost action	Severe: excess sodium

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
132:						
Polson----------	Slight	Slight	Slight	Moderate: slope	Severe: low strength, frost action	Severe: excess sodium
Vincom----------	Slight	Slight	Slight	Moderate: slope	Moderate: low strength, frost action	Slight
133:						
Post----------	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Severe: excess sodium
134:						
Post----------	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Severe: excess sodium
135:						
Post----------	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium
136:						
Post----------	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium
Ronan----------	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium
Water.						
137:						
Post----------	Moderate: too clayey, slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Severe: excess sodium
Ronan----------	Moderate: too clayey, slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Severe: excess sodium
Water.						
138:						
Repp----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
139:						
Repp----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock outcrop.						
140:						
Rock outcrop.						
Rubble land.						
141:						
Ronan----------	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Severe: excess sodium
142:						
Ronan----------	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Severe: excess sodium
143:						
Ronan----------	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium
144:						
Round Butte-----	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Severe: excess sodium
145:						
Round Butte-----	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Severe: excess sodium
146:						
Round Butte-----	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
147:						
Round Butte-----	Moderate: too clayey	Slight	Slight	Slight	Severe: low strength	Severe: excess sodium
148:						
Round Butte-----	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium
Irvine----------	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Moderate: large stones, droughty
149:						
Round Butte-----	Moderate: too clayey, slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Severe: excess sodium
Irvine----------	Moderate: too clayey, slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Moderate: large stones, droughty, slope
150:						
Rumblecreek-----	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Moderate: small stones, droughty
151:						
Rumblecreek-----	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, droughty, slope
152:						
Rumblecreek-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
153:						
Rumblecreek-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
154:						
Sacheen---------	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
155:						
Sacheen---------	Severe: cutbanks cave	Slight	Slight	Moderate: slope	Slight	Moderate: droughty
156:						
Selon----------	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
157:						
Selon----------	Slight	Slight	Slight	Slight	Moderate: frost action	Slight
158:						
Selon----------	Slight	Slight	Slight	Moderate: slope	Moderate: frost action	Slight
159:						
Selon----------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: slope
160:						
Selow----------	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Severe: excess sodium
161:						
Selow----------	Severe: cutbanks cave	Slight	Slight	Slight	Moderate: frost action	Severe: excess sodium
162:						
Tevis----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
163:						
Trapps----------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, droughty, slope
164:						
Trapps----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
165:						
Truscreek-------	Slight	Slight	Slight	Slight	Severe: frost action	Slight
166:						
Truscreek-------	Slight	Slight	Slight	Slight	Severe: frost action	Slight
Polson----------	Slight	Slight	Slight	Slight	Severe: low strength, frost action	Severe: excess sodium
167:						
Truscreek-------	Slight	Slight	Slight	Slight	Severe: frost action	Slight
Polson----------	Slight	Slight	Slight	Slight	Severe: low strength, frost action	Severe: excess sodium
168:						
Truscreek-------	Slight	Slight	Slight	Moderate: slope	Severe: frost action	Slight
Polson----------	Slight	Slight	Slight	Moderate: slope	Severe: low strength, frost action	Severe: excess sodium
169:						
Typic Haplaquepts.						
170:						
Vincom----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
171:						
Vincom----------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: low strength, slope, frost action	Moderate: slope
Lonepine--------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Severe: low strength	Moderate: slope
172:						
Waldbillig------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
173:						
Waldbillig------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
174:						
Walstead--------	Slight	Slight	Slight	Slight	Moderate: frost action	Moderate: small stones, large stones, droughty
175:						
Walstead--------	Slight	Slight	Slight	Slight	Moderate: frost action	Moderate: small stones, large stones, droughty
176:						
Walstead--------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Moderate: small stones, large stones, droughty

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
177:						
Walstead--------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Rock outcrop.						
178:						
Whitearth-------	Slight	Slight	Slight	Moderate: slope	Severe: low strength	Severe: excess sodium
Esteslake-------	Moderate: too clayey	Slight	Slight	Moderate: slope	Severe: low strength	Moderate: droughty
179:						
Wildgen---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
180:						
Wildgen---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
181:						
Wildgen---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope
182:						
Winfall---------	Moderate: slope	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope, frost action	Severe: small stones
183:						
Winfall---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
184:						
Winfall---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, slope
185:						
Winkler---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
Rock outcrop.						
186:						
Winkler---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
187:						
Winkler---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope
Sharrott--------	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: slope, depth to rock	Severe: depth to rock, slope	Severe: small stones, slope, depth to rock
Rock outcrop.						
188:						
Xerofluvents.						
189:						
Xerofluvents.						

BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
190:						
Yellowbay-------	Severe: cutbanks cave	Slight	Slight	Slight	Slight	Severe: small stones, droughty
191:						
Yellowbay-------	Severe: cutbanks cave	Moderate: slope	Moderate: slope	Severe: slope	Moderate: slope	Severe: small stones, droughty
192:						
Yellowbay-------	Severe: cutbanks cave, slope	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Severe: small stones, droughty, slope

SANITARY FACILITIES

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1: Aeric Haplaquepts.					
2: Badland.					
3: Bata----------	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
4: Bata----------	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
5: Belton----------	Severe: percs slowly	Slight	Severe: excess sodium	Slight	Poor: excess sodium
6: Belton----------	Severe: percs slowly	Severe: slope	Severe: excess sodium	Moderate: slope	Poor: excess sodium
7: Belton----------	Severe: percs slowly, slope	Severe: slope	Severe: slope, excess sodium	Severe: slope	Poor: slope, excess sodium
8: Belton----------	Severe: percs slowly	Moderate: slope	Severe: excess sodium	Slight	Poor: excess sodium
Kerl----------	Severe: percs slowly	Moderate: slope	Slight	Slight	Fair: small stones
9: Belton----------	Severe: percs slowly	Moderate: slope	Severe: excess sodium	Slight	Poor: excess sodium
Kerl----------	Severe: percs slowly	Moderate: slope	Slight	Slight	Fair: small stones
10: Bigarm----------	Severe: slope	Severe: seepage, slope, large stones	Severe: seepage, slope, large stones	Severe: seepage, slope	Poor: small stones, slope
11: Bigarm----------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: small stones, slope
12: Bigarm----------	Moderate: slope	Severe: seepage, slope	Severe: seepage	Severe: seepage	Poor: small stones
13: Bigarm----------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
Hogsby----------	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, seepage, small stones
Rock outcrop.					

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
14:					
Bigarm----------	Severe: slope	Severe: seepage, slope, large stones	Severe: seepage, slope, large stones	Severe: seepage, slope	Poor: seepage, small stones, slope
Rubble land.					
15:					
Bigarm----------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
Hogsby----------	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, seepage, small stones
Rock outcrop.					
16:					
Bigarm----------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope, large stones	Severe: seepage, slope	Poor: seepage, small stones, slope
Rock outcrop.					
Rubble land.					
17:					
Bohnly----------	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Severe: flooding, wetness	Poor: wetness
18:					
Bolack----------	Severe: flooding, wetness, percs slowly	Severe: flooding	Severe: flooding, wetness, too clayey	Severe: flooding, wetness	Poor: too clayey, hard to pack, wetness
19:					
Borohemists.					
20:					
Bowlake---------	Severe: percs slowly	Moderate: slope	Severe: too clayey	Slight	Poor: too clayey, small stones
21:					
Bowlake---------	Severe: percs slowly	Severe: slope	Severe: too clayey	Moderate: slope	Poor: too clayey, small stones
Minesinger------	Severe: percs slowly	Severe: slope	Moderate: slope, large stones	Moderate: slope	Poor: small stones
22:					
Colake----------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
23:					
Colake----------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: wetness
24:					
Colake----------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Poor: wetness
Sacheen---------	Severe: poor filter	Severe: seepage	Severe: seepage, too sandy	Severe: seepage	Poor: too sandy
25:					
Connah----------	Severe: percs slowly	Moderate: slope	Severe: too clayey	Slight	Poor: too clayey

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
26:					
Connah----------	Severe: percs slowly	Slight	Severe: too clayey	Slight	Poor: too clayey
27:					
Connah----------	Severe: percs slowly	Moderate: slope	Severe: too clayey	Slight	Poor: too clayey
Water.					
28:					
Courville-------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
29:					
Courville-------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
30:					
Courville-------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
31:					
Courville-------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
32:					
Courville-------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
33:					
Courville-------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
34:					
Courville-------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
Rumblecreek-----	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
35:					
Craddock--------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: small stones, slope
36:					
Craddock--------	Moderate: slope	Severe: seepage, slope	Severe: seepage	Severe: seepage	Poor: small stones
37:					
Craddock--------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: small stones, slope
38:					
Doker----------	Severe: flooding, wetness	Severe: seepage, flooding, wetness	Severe: flooding, seepage, wetness	Severe: flooding, seepage, wetness	Poor: wetness
39:					
Dryfork---------	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
40:					
Dryfork---------	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
40:					
Selow----------	Moderate: percs slowly	Moderate: seepage, slope	Moderate: too sandy	Slight	Fair: too sandy
41:					
Dryfork---------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Selow----------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, too sandy	Moderate: slope	Fair: too sandy, slope
42:					
Dubay----------	Severe: percs slowly	Moderate: seepage	Slight	Slight	Good
43:					
Dubay----------	Severe: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
44:					
Eaglewing-------	Severe: percs slowly	Severe: slope	Moderate: slope, large stones	Moderate: slope	Poor: small stones
45:					
Eaglewing-------	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
46:					
Eaglewing-------	Severe: percs slowly	Moderate: slope	Slight	Slight	Poor: small stones
47:					
Esteslake-------	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Slickspots.					
48:					
Felan----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
49:					
Felan----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
50:					
Finleypoint-----	Moderate: percs slowly, large stones	Severe: large stones	Severe: large stones	Slight	Poor: small stones
51:					
Finleypoint-----	Moderate: percs slowly, slope, large stones	Severe: slope, large stones	Severe: large stones	Moderate: slope	Poor: small stones
52:					
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
53:					
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
54:					
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
55:					
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
56:					
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
Wildgen---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
57:					
Flott----------	Moderate: percs slowly	Moderate: seepage, slope	Moderate: too clayey, large stones	Slight	Poor: small stones
58:					
Flott----------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, too clayey, large stones	Moderate: slope	Poor: small stones
59:					
Flott----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
60:					
Flott----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
61:					
Flott----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
62:					
Gardencreek-----	Severe: percs slowly	Slight	Severe: wetness	Moderate: flooding, wetness	Poor: hard to pack
63:					
Gird----------	Moderate: percs slowly	Moderate: seepage	Slight	Slight	Good
64:					
Gird----------	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
65:					
Gird----------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: wetness
Dryfork---------	Severe: wetness	Severe: wetness	Severe: wetness	Severe: wetness	Fair: wetness
66:					
Gird----------	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Vincom----------	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
67:					
Gird----------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Vincom----------	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
68:					
Glaciercreek----	Severe: poor filter	Severe: seepage	Severe: seepage, too sandy, large stones	Severe: seepage	Poor: seepage, too sandy, small stones
69:					
Half Moon-------	Severe: percs slowly	Moderate: slope	Severe: too clayey	Slight	Poor: too clayey
70:					
Half Moon-------	Severe: percs slowly	Severe: slope	Moderate: slope, too clayey	Moderate: slope	Fair: too clayey, slope
Courville-------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
71:					
Hogsby----------	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, seepage, small stones
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
72:					
Hogsby----------	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, seepage, small stones
Rock outcrop.					
73:					
Holloway--------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
74:					
Holloway--------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
75:					
Holloway--------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
76:					
Holloway--------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
77:					
Holloway--------	Severe: slope	Severe: seepage, slope	Severe: slope, seepage	Severe: slope, seepage	Poor: small stones, seepage
Rock outcrop.					
78:					
Holloway--------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
Rubble land.					
79:					
Irvine----------	Severe: percs slowly	Severe: slope	Severe: too clayey	Moderate: slope	Poor: too clayey

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
80:					
Irvine----------	Severe: percs slowly, slope	Severe: slope	Severe: slope, too clayey	Severe: slope	Poor: too clayey, slope
81:					
Jocko----------	Severe: poor filter	Severe: seepage	Severe: seepage, too sandy, large stones	Severe: seepage	Poor: seepage, too sandy, small stones
82:					
Jocko----------	Severe: poor filter	Severe: seepage, slope	Severe: seepage, too sandy, large stones	Severe: seepage	Poor: seepage, too sandy, small stones
83:					
Jocko----------	Severe: poor filter	Severe: seepage, large stones	Severe: seepage, too sandy, large stones	Severe: seepage	Poor: seepage, too sandy, small stones
84:					
Kerl----------	Severe: percs slowly	Moderate: slope	Slight	Slight	Fair: small stones
85:					
Kerl----------	Severe: percs slowly	Moderate: slope	Slight	Slight	Fair: small stones
86:					
Kerrdam---------	Moderate: percs slowly	Moderate: seepage	Moderate: too sandy	Slight	Good
87:					
Kerrdam---------	Moderate: percs slowly	Moderate: seepage, slope	Moderate: too sandy	Slight	Good
88:					
Kerrdam---------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, too sandy	Moderate: slope	Fair: slope
Vincom----------	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
89:					
Kerrdam---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
Vincom----------	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
90:					
Kingspoint------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, large stones	Moderate: slope	Poor: small stones
91:					
Kingspoint------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
92:					
Kingspoint------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
93:					
Lamoose---------	Severe: flooding, wetness, poor filter	Severe: seepage, flooding, wetness	Severe: flooding, seepage, wetness	Severe: flooding, seepage, wetness	Poor: seepage, too sandy, small stones
94:					
Lonepine--------	Severe: percs slowly	Moderate: seepage	Slight	Slight	Good

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
95:					
Lonepine--------	Severe: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
96:					
Lonepine--------	Severe: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
97:					
Lonepine--------	Severe: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Vincom----------	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
98:					
Lonepine--------	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Vincom----------	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
99:					
Marklepass------	Severe: percs slowly	Slight	Slight	Slight	Good
100:					
Marklepass------	Severe: percs slowly	Slight	Slight	Slight	Good
Slickspots.					
101:					
McCollum--------	Slight	Severe: seepage	Severe: seepage	Severe: seepage	Fair: too sandy
102:					
McCollum--------	Slight	Severe: seepage	Severe: seepage	Severe: seepage	Fair: too sandy
103:					
McCollum--------	Slight	Severe: seepage	Severe: seepage	Severe: seepage	Fair: too sandy
104:					
McCollum--------	Slight	Severe: seepage	Severe: seepage	Severe: seepage	Good
105:					
McDonald--------	Severe: percs slowly	Moderate: seepage, slope, large stones	Severe: too clayey	Slight	Poor: too clayey, hard to pack, small stones
106:					
McDonald--------	Severe: percs slowly	Moderate: seepage, slope, large stones	Severe: too clayey	Slight	Poor: too clayey, hard to pack, small stones
107:					
McDonald--------	Severe: percs slowly	Severe: slope	Moderate: slope, too clayey, large stones	Moderate: slope	Poor: small stones
108:					
McDonald--------	Severe: percs slowly	Moderate: seepage	Severe: too clayey	Slight	Poor: too clayey, hard to pack, small stones
109:					
Minesinger------	Severe: percs slowly	Severe: slope	Severe: large stones	Moderate: slope	Poor: small stones

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
110:					
Minesinger------	Severe: percs slowly, slope	Severe: slope, large stones	Severe: slope, large stones	Severe: slope	Poor: small stones, slope
Walstead--------	Severe: slope	Severe: slope, large stones	Severe: slope, large stones	Severe: slope	Poor: small stones, slope
111:					
Mitten----------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
112:					
Mitten----------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
113:					
Mitten----------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
114:					
Mitten----------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
Rock outcrop.					
115:					
Moiese----------	Severe: poor filter	Severe: seepage	Severe: seepage, too sandy	Severe: seepage	Poor: seepage, too sandy, small stones
116:					
Mollman---------	Moderate: percs slowly	Moderate: seepage, slope	Moderate: large stones	Slight	Poor: small stones
117:					
Mollman---------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, large stones	Moderate: slope	Poor: small stones
118:					
Mollman---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
119:					
Mollman---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
120:					
Niarada---------	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Poor: small stones
121:					
Niarada---------	Moderate: percs slowly	Moderate: seepage, slope, large stones	Slight	Slight	Poor: small stones
122:					
Niarada---------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
123:					
Niarada---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
124:					
Niarada---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
125:					
Niarada---------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
Kerl----------	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: small stones, slope
126:					
Ninepipe--------	Moderate: wetness, percs slowly	Moderate: seepage, wetness	Severe: wetness	Moderate: wetness	Fair: too clayey
127:					
Phillcher-------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: small stones, slope
128:					
Phillcher-------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: small stones, slope
Rock outcrop.					
129:					
Pits.					
130:					
Polson----------	Severe: percs slowly	Slight	Severe: excess sodium	Slight	Poor: excess sodium
131:					
Polson----------	Severe: percs slowly	Moderate: slope	Severe: excess sodium	Slight	Poor: excess sodium
132:					
Polson----------	Severe: percs slowly	Moderate: slope	Severe: excess sodium	Slight	Poor: excess sodium
Vincom----------	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
133:					
Post----------	Severe: percs slowly	Slight	Severe: too clayey, excess sodium	Slight	Poor: too clayey, hard to pack, excess sodium
134:					
Post----------	Severe: percs slowly	Moderate: slope	Severe: too clayey, excess sodium	Slight	Poor: too clayey, hard to pack, excess sodium
135:					
Post----------	Severe: percs slowly	Moderate: slope	Severe: too clayey, excess sodium	Slight	Poor: too clayey, hard to pack, excess sodium
136:					
Post----------	Severe: percs slowly	Moderate: slope	Severe: too clayey, excess sodium	Slight	Poor: too clayey, hard to pack, excess sodium

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
136:					
Ronan----------	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Water.					
137:					
Post----------	Severe: percs slowly	Severe: slope	Severe: too clayey, excess sodium	Moderate: slope	Poor: too clayey, hard to pack, excess sodium
Ronan----------	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Water.					
138:					
Repp----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: seepage, small stones, slope
139:					
Repp----------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: seepage, small stones, slope
Rock outcrop.					
140:					
Rock outcrop.					
Rubble land.					
141:					
Ronan----------	Severe: percs slowly	Slight	Slight	Slight	Good
142:					
Ronan----------	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
143:					
Ronan----------	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
144:					
Round Butte-----	Severe: percs slowly	Slight	Slight	Slight	Good
145:					
Round Butte-----	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
146:					
Round Butte-----	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
147:					
Round Butte-----	Severe: percs slowly	Slight	Slight	Slight	Good
148:					
Round Butte-----	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Irvine----------	Severe: percs slowly	Moderate: slope	Severe: too clayey	Slight	Poor: too clayey
149:					
Round Butte-----	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Irvine----------	Severe: percs slowly	Severe: slope	Severe: too clayey	Moderate: slope	Poor: too clayey

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
150:					
Rumblecreek-----	Severe: percs slowly	Moderate: seepage, slope	Moderate: too clayey	Slight	Poor: small stones
151:					
Rumblecreek-----	Severe: percs slowly	Severe: slope	Moderate: slope, too clayey	Moderate: slope	Poor: small stones
152:					
Rumblecreek-----	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
153:					
Rumblecreek-----	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
154:					
Sacheen---------	Severe: poor filter	Severe: seepage	Severe: seepage, too sandy	Severe: seepage	Poor: too sandy
155:					
Sacheen---------	Severe: poor filter	Severe: seepage	Severe: seepage, too sandy	Severe: seepage	Poor: too sandy
156:					
Selon----------	Slight	Severe: seepage	Severe: seepage	Severe: seepage	Good
157:					
Selon----------	Slight	Severe: seepage	Severe: seepage	Severe: seepage	Good
158:					
Selon----------	Slight	Severe: seepage	Severe: seepage	Severe: seepage	Good
159:					
Selon----------	Moderate: slope	Severe: seepage, slope	Severe: seepage	Severe: seepage	Fair: slope
160:					
Selow----------	Moderate: percs slowly	Moderate: seepage	Moderate: too sandy	Slight	Fair: too sandy
161:					
Selow----------	Moderate: percs slowly	Moderate: seepage, slope	Moderate: too sandy	Slight	Fair: too sandy
162:					
Tevis----------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
163:					
Trapps----------	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
164:					
Trapps----------	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
165:					
Truscreek-------	Moderate: percs slowly	Moderate: seepage	Slight	Slight	Good
166:					
Truscreek-------	Moderate: percs slowly	Moderate: seepage	Slight	Slight	Good

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
166:					
Polson----------	Severe: percs slowly	Slight	Severe: excess sodium	Slight	Poor: excess sodium
167:					
Truscreek-------	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Polson----------	Severe: percs slowly	Moderate: slope	Severe: excess sodium	Slight	Poor: excess sodium
168:					
Truscreek-------	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Good
Polson----------	Severe: percs slowly	Moderate: slope	Severe: excess sodium	Slight	Poor: excess sodium
169:					
Typic Haplaquepts.					
170:					
Vincom----------	Severe: percs slowly, slope	Severe: slope	Severe: slope	Severe: slope	Poor: slope
171:					
Vincom----------	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
Lonepine--------	Severe: percs slowly	Severe: slope	Moderate: slope	Moderate: slope	Fair: slope
172:					
Waldbillig------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
173:					
Waldbillig------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
174:					
Walstead--------	Moderate: percs slowly	Moderate: seepage	Slight	Slight	Poor: small stones
175:					
Walstead--------	Moderate: percs slowly	Moderate: seepage, slope	Slight	Slight	Poor: small stones
176:					
Walstead--------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope	Moderate: slope	Poor: small stones
177:					
Walstead--------	Severe: slope	Severe: slope	Severe: slope, large stones	Severe: slope	Poor: small stones, slope
Rock outcrop.					
178:					
Whitearth-------	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
Esteslake-------	Severe: percs slowly	Moderate: slope	Slight	Slight	Good
179:					
Wildgen---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
180:					
Wildgen---------	Severe: slope	Severe: slope	Severe: slope, large stones	Severe: slope	Poor: small stones, slope
181:					
Wildgen---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
Finleypoint-----	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
182:					
Winfall---------	Moderate: percs slowly, slope	Severe: slope	Moderate: slope, large stones	Moderate: slope	Poor: small stones
183:					
Winfall---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
184:					
Winfall---------	Severe: slope	Severe: slope	Severe: slope	Severe: slope	Poor: small stones, slope
185:					
Winkler---------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
Rock outcrop.					
186:					
Winkler---------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
187:					
Winkler---------	Severe: slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope
Sharrott--------	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Severe: depth to rock, slope	Poor: depth to rock, small stones, slope
Rock outcrop.					
188:					
Xerofluvents.					
189:					
Xerofluvents.					
190:					
Yellowbay-------	Severe: poor filter	Severe: seepage	Severe: seepage	Severe: seepage	Poor: seepage, small stones
191:					
Yellowbay-------	Severe: poor filter	Severe: seepage, slope	Severe: seepage	Severe: seepage	Poor: seepage, small stones
192:					
Yellowbay-------	Severe: poor filter, slope	Severe: seepage, slope	Severe: seepage, slope	Severe: seepage, slope	Poor: seepage, small stones, slope

CONSTRUCTION MATERIALS

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
1: Aeric Haplaquepts.				
2: Badland.				
3: Bata----------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
4: Bata----------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
5: Belton----------	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
6: Belton----------	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
7: Belton----------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium, slope
8: Belton----------	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
Kerl----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
9: Belton----------	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
Kerl----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
10: Bigarm----------	Fair: large stones, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
11: Bigarm----------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
12: Bigarm----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
13: Bigarm----------	Poor: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
Hogsby----------	Poor: depth to rock, slope	Improbable: small stones	Improbable: thin layer	Poor: depth to rock, small stones, slope
Rock outcrop.				

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
14:				
Bigarm----------	Poor: slope	Improbable: large stones	Improbable: large stones	Poor: small stones, area reclaim, slope
Rubble land.				
15:				
Bigarm----------	Poor: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
Hogsby----------	Poor: depth to rock, slope	Improbable: small stones	Improbable: thin layer	Poor: depth to rock, small stones, slope
Rock outcrop.				
16:				
Bigarm----------	Poor: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
Rock outcrop.				
Rubble land.				
17:				
Bohnly----------	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
18:				
Bolack----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
19:				
Borohemists.				
20:				
Bowlake---------	Good	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, area reclaim
21:				
Bowlake---------	Good	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, area reclaim
Minesinger------	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
22:				
Colake----------	Fair: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Good
23:				
Colake----------	Fair: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Good
24:				
Colake----------	Fair: low strength, wetness	Improbable: excess fines	Improbable: excess fines	Good
Sacheen---------	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
25:				
Connah----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
26:				
Connah----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
27:				
Connah----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Water.				
28:				
Courville-------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
29:				
Courville-------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
30:				
Courville-------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
31:				
Courville-------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
32:				
Courville-------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
33:				
Courville-------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
34:				
Courville-------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
Rumblecreek-----	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
35:				
Craddock--------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
36:				
Craddock--------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
37:				
Craddock--------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
38:				
Doker----------	Poor: wetness	Improbable: excess fines	Improbable: excess fines	Poor: wetness
39:				
Dryfork---------	Good	Improbable: excess fines	Improbable: excess fines	Good

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
40:				
Dryfork---------	Good	Improbable: excess fines	Improbable: excess fines	Good
Selow----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
41:				
Dryfork---------	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Selow----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
42:				
Dubay----------	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
43:				
Dubay----------	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
44:				
Eaglewing-------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
45:				
Eaglewing-------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, slope
46:				
Eaglewing-------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
47:				
Esteslake-------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Slickspots.				
48:				
Felan----------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
49:				
Felan----------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
50:				
Finleypoint-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
51:				
Finleypoint-----	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
52:				
Finleypoint-----	Fair: large stones, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
53:				
Finleypoint-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
54:				
Finleypoint-----	Fair: large stones, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
55:				
Finleypoint-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
56:				
Finleypoint-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
Wildgen---------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
57:				
Flott----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
58:				
Flott----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
59:				
Flott----------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
60:				
Flott----------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
61:				
Flott----------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
62:				
Gardencreek-----	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, thin layer
63:				
Gird----------	Good	Improbable: excess fines	Improbable: excess fines	Good
64:				
Gird----------	Good	Improbable: excess fines	Improbable: excess fines	Good
65:				
Gird----------	Good	Improbable: excess fines	Improbable: excess fines	Good
Dryfork---------	Good	Improbable: excess fines	Improbable: excess fines	Good
66:				
Gird----------	Good	Improbable: excess fines	Improbable: excess fines	Good
Vincom----------	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
67:				
Gird----------	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Vincom----------	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, slope

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
68:				
Glaciercreek----	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
69:				
Half Moon-------	Good	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
70:				
Half Moon-------	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, large stones, slope
Courville-------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
71:				
Hogsby----------	Poor: depth to rock, slope	Improbable: small stones	Improbable: thin layer	Poor: depth to rock, small stones, slope
Finleypoint-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
72:				
Hogsby----------	Poor: depth to rock, slope	Improbable: small stones	Improbable: thin layer	Poor: depth to rock, small stones, slope
Rock outcrop.				
73:				
Holloway--------	Fair: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
74:				
Holloway--------	Poor: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
75:				
Holloway--------	Fair: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
76:				
Holloway--------	Poor: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
77:				
Holloway--------	Good	Improbable: small stones	Probable	Poor: small stones, area reclaim
Rock outcrop.				
78:				
Holloway--------	Poor: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
Rubble land.				
79:				
Irvine----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
80:				
Irvine	Poor: low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, slope
81:				
Jocko	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
82:				
Jocko	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
83:				
Jocko	Fair: large stones	Probable	Probable	Poor: too sandy, small stones, area reclaim
84:				
Kerl	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
85:				
Kerl	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
86:				
Kerrdam	Good	Improbable: excess fines	Improbable: excess fines	Good
87:				
Kerrdam	Good	Improbable: excess fines	Improbable: excess fines	Good
88:				
Kerrdam	Good	Improbable: excess fines	Improbable: excess fines	Fair: slope
Vincom	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, slope
89:				
Kerrdam	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
Vincom	Fair: low strength, slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
90:				
Kingspoint	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
91:				
Kingspoint	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
92:				
Kingspoint	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
93:				
Lamoose	Poor: wetness	Probable	Probable	Poor: too sandy, small stones, area reclaim
94:				
Lonepine	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
95:				
Lonepine--------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
96:				
Lonepine--------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
97:				
Lonepine--------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
Vincom----------	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
98:				
Lonepine--------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, slope
Vincom----------	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, slope
99:				
Marklepass------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
100:				
Marklepass------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
Slickspots.				
101:				
McCollum--------	Good	Improbable: excess fines	Improbable: excess fines	Good
102:				
McCollum--------	Good	Improbable: excess fines	Improbable: excess fines	Good
103:				
McCollum--------	Good	Improbable: excess fines	Improbable: excess fines	Good
104:				
McCollum--------	Good	Improbable: excess fines	Improbable: excess fines	Poor: area reclaim
105:				
McDonald--------	Fair: low strength, large stones	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, area reclaim
106:				
McDonald--------	Fair: low strength, large stones	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, area reclaim
107:				
McDonald--------	Fair: low strength, large stones	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, area reclaim
108:				
McDonald--------	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, area reclaim
109:				
Minesinger------	Fair: large stones	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, area reclaim

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
110:				
Minesinger------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, small stones, area reclaim
Walstead--------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
111:				
Mitten----------	Fair: slope	Probable	Probable	Poor: small stones, area reclaim, slope
112:				
Mitten----------	Poor: slope	Probable	Probable	Poor: small stones, area reclaim, slope
113:				
Mitten----------	Poor: slope	Probable	Probable	Poor: small stones, area reclaim, slope
114:				
Mitten----------	Poor: slope	Probable	Probable	Poor: small stones, area reclaim, slope
Rock outcrop.				
115:				
Moiese----------	Good	Probable	Probable	Poor: too sandy, small stones, area reclaim
116:				
Mollman---------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
117:				
Mollman---------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
118:				
Mollman---------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
119:				
Mollman---------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
120:				
Niarada---------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
121:				
Niarada---------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
122:				
Niarada---------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
123:				
Niarada---------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
124:				
Niarada---------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
125:				
Niarada---------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
Kerl----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones
126:				
Ninepipe--------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Good
127:				
Phillcher-------	Poor: slope	Probable	Probable	Poor: small stones, area reclaim, slope
128:				
Phillcher-------	Poor: slope	Probable	Probable	Poor: small stones, area reclaim, slope
Rock outcrop.				
129:				
Pits.				
130:				
Polson----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
131:				
Polson----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
132:				
Polson----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
Vincom----------	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey
133:				
Post----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
134:				
Post----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
135:				
Post----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
136:				
Post----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
Ronan----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
Water.				

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
137:				
Post	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
Ronan	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
Water.				
138:				
Repp	Poor: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
139:				
Repp	Poor: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
Rock outcrop.				
140:				
Rock outcrop.				
Rubble land.				
141:				
Ronan	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
142:				
Ronan	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
143:				
Ronan	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
144:				
Round Butte	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
145:				
Round Butte	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
146:				
Round Butte	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
147:				
Round Butte	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
148:				
Round Butte	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
Irvine	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
149:				
Round Butte	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey, excess sodium
Irvine	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
150:				
Rumblecreek-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
151:				
Rumblecreek-----	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
152:				
Rumblecreek-----	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
153:				
Rumblecreek-----	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
154:				
Sacheen---------	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
155:				
Sacheen---------	Good	Improbable: excess fines	Improbable: excess fines	Poor: too sandy
156:				
Selon----------	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
157:				
Selon----------	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
158:				
Selon----------	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones
159:				
Selon----------	Good	Improbable: excess fines	Improbable: excess fines	Fair: small stones, slope
160:				
Selow----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
161:				
Selow----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
162:				
Tevis----------	Poor: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
163:				
Trapps----------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
164:				
Trapps----------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
165:				
Truscreek-------	Good	Improbable: excess fines	Improbable: excess fines	Good
166:				
Truscreek-------	Good	Improbable: excess fines	Improbable: excess fines	Good
Polson----------	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
167:				
Truscreek	Good	Improbable: excess fines	Improbable: excess fines	Good
Polson	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
168:				
Truscreek	Good	Improbable: excess fines	Improbable: excess fines	Good
Polson	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
169:				
Typic Haplaquepts.				
170:				
Vincom	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: slope
171:				
Vincom	Fair: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, slope
Lonepine	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Fair: too clayey, slope
172:				
Waldbillig	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
173:				
Waldbillig	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
174:				
Walstead	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
175:				
Walstead	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
176:				
Walstead	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
177:				
Walstead	Fair: large stones, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
Rock outcrop.				
178:				
Whitearth	Good	Improbable: excess fines	Improbable: excess fines	Poor: excess sodium
Esteslake	Poor: low strength	Improbable: excess fines	Improbable: excess fines	Poor: too clayey
179:				
Wildgen	Fair: large stones, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
180:				
Wildgen---------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
181:				
Wildgen---------	Fair: large stones, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
Finleypoint-----	Fair: large stones, slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
182:				
Winfall---------	Good	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim
183:				
Winfall---------	Fair: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
184:				
Winfall---------	Poor: slope	Improbable: excess fines	Improbable: excess fines	Poor: small stones, area reclaim, slope
185:				
Winkler---------	Poor: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
Rock outcrop.				
186:				
Winkler---------	Poor: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
187:				
Winkler---------	Poor: slope	Improbable: small stones	Probable	Poor: small stones, area reclaim, slope
Sharrott--------	Poor: depth to rock, slope	Improbable: excess fines	Improbable: excess fines	Poor: depth to rock, small stones, slope
Rock outcrop.				
188:				
Xerofluvents.				
189:				
Xerofluvents.				
190:				
Yellowbay-------	Good	Probable	Probable	Poor: small stones, area reclaim
191:				
Yellowbay-------	Good	Probable	Probable	Poor: small stones, area reclaim
192:				
Yellowbay-------	Fair: slope	Probable	Probable	Poor: small stones, area reclaim, slope

WATER MANAGEMENT

(The information in this report indicates the dominant soil condition but does not eliminate the need for onsite investigation)

Map symbol and soil name	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1: Aeric Haplaquepts.							
2: Badland.							
3: Bata----------	Severe: slope	Slight	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
4: Bata----------	Severe: slope	Slight	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
5: Belton--------	Slight	Severe: piping, excess sodium	Severe: no water	Deep to water	Percs slowly, Erodes easily, Excess sodium	Erodes easily, Percs slowly	Excess sodium, Erodes easily, Percs slowly
6: Belton--------	Severe: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Slope, Erodes easily, Percs slowly	Slope, Excess sodium, Erodes easily
7: Belton--------	Severe: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Slope, Erodes easily, Percs slowly	Slope, Excess sodium, Erodes easily
8: Belton--------	Moderate: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Excess sodium, Erodes easily, Percs slowly
Kerl----------	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, Erodes easily	Erodes easily	Erodes easily
9: Belton--------	Moderate: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Excess sodium, Erodes easily, Percs slowly
Kerl----------	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, Erodes easily	Erodes easily	Erodes easily
10: Bigarm--------	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
11: Bigarm--------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
12: Bigarm--------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
13: Bigarm--------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones, Too sandy	Large stones, Slope, Droughty
Hogsby--------	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones, Depth to rock	Large stones, Slope, Droughty
Rock outcrop.							
14: Bigarm--------	Severe: seepage, slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones, Too sandy	Large stones, Slope, Droughty

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
14 (con.):							
Rubble land.							
15:							
Bigarm	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones, Too sandy	Large stones, Slope, Droughty
Hogsby	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones, Depth to rock	Large stones, Slope, Droughty
Rock outcrop.							
16:							
Bigarm	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones, Too sandy	Large stones, Slope, Droughty
Rock outcrop.							
Rubble land.							
17:							
Bohnly	Moderate: seepage	Severe: piping, wetness	Severe: cutbanks cave	Flooding, Frost action	Wetness, Flooding	Wetness	Wetness
18:							
Bolack	Slight	Severe: wetness	Severe: slow refill	Percs slowly, Flooding, Frost action	Wetness, Percs slowly, Flooding	Erodes easily, Wetness, Percs slowly	Wetness, Erodes easily, Percs slowly
19:							
Borohemists.							
20:							
Bowlake	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, Percs slowly	Percs slowly	Percs slowly
21:							
Bowlake	Severe: slope	Severe: thin layer	Severe: no water	Deep to water	Slope, Percs slowly	Slope, Percs slowly	Slope, Percs slowly
Minesinger	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones, Percs slowly	Too arid, Large stones, Slope
22:							
Colake	Moderate: seepage	Severe: piping, wetness	Moderate: slow refill	Favorable	Wetness	Wetness	Wetness
23:							
Colake	Moderate: seepage	Severe: piping	Moderate: deep to water, slow refill	Favorable	Wetness	Wetness	Favorable
24:							
Colake	Moderate: seepage	Severe: piping, wetness	Moderate: slow refill	Favorable	Wetness	Wetness	Wetness
Sacheen	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Droughty, Fast intake, Soil blowing	Too sandy, Soil blowing	Droughty
25:							
Connah	Moderate: slope	Moderate: piping	Severe: no water	Deep to water	Slope, Percs slowly	Erodes easily, Percs slowly	Erodes easily, Percs slowly
26:							
Connah	Slight	Moderate: piping	Severe: no water	Deep to water	Percs slowly, Erodes easily	Erodes easily, Percs slowly	Erodes easily, Percs slowly
27:							
Connah	Moderate: slope	Moderate: piping	Severe: no water	Deep to water	Slope, Percs slowly	Erodes easily, Percs slowly	Erodes easily, Percs slowly

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
27 (con.): Water.							
28: Courville-----	Severe: slope	Slight	Severe: no water	Deep to water	Slope	Slope	Slope
29: Courville-----	Severe: slope	Slight	Severe: no water	Deep to water	Slope	Slope	Slope
30: Courville-----	Severe: slope	Slight	Severe: no water	Deep to water	Slope	Slope	Slope
31: Courville-----	Severe: slope	Slight	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
32: Courville-----	Severe: slope	Slight	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
33: Courville-----	Severe: slope	Slight	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
34: Courville-----	Severe: slope	Slight	Severe: no water	Deep to water	Slope	Slope	Slope
Rumblecreek---	Severe: slope	Slight	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
35: Craddock------	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope	Slope	Slope
36: Craddock------	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope	Slope	Slope
37: Craddock------	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope	Slope	Slope
38: Doker---------	Severe: seepage	Severe: piping, wetness	Moderate: slow refill	Flooding	Wetness, Flooding	Erodes easily, Wetness	Wetness, Erodes easily
39: Dryfork-------	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, Erodes easily
40: Dryfork-------	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, Erodes easily
Selow---------	Moderate: seepage	Severe: piping, excess sodium	Severe: no water	Deep to water	Percs slowly, Erodes easily, Excess sodium	Erodes easily	Too arid, Excess sodium, Erodes easily
41: Dryfork-------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, Erodes easily	Slope, Erodes easily	Too arid, Slope, Erodes easily
Selow---------	Severe: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Slope, Erodes easily	Too arid, Slope, Excess sodium
42: Dubay---------	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Favorable	Erodes easily	Erodes easily

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
43:							
Dubay---------	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope	Erodes easily	Erodes easily
44:							
Eaglewing-----	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope	Slope, Large stones	Large stones, Slope
45:							
Eaglewing-----	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope	Slope, Large stones	Large stones, Slope
46:							
Eaglewing-----	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope	Favorable	Favorable
47:							
Esteslake-----	Slight	Slight	Severe: no water	Deep to water	Droughty, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Too arid, Erodes easily, Droughty
Slickspots.							
48:							
Felan---------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope	Slope	Slope
49:							
Felan---------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope	Slope	Slope
50:							
Finleypoint---	Moderate: seepage, slope	Severe: piping, large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Large stones	Large stones, Droughty
51:							
Finleypoint---	Severe: slope	Severe: piping, large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
52:							
Finleypoint---	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
53:							
Finleypoint---	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
54:							
Finleypoint---	Severe: slope	Severe: piping, large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
55:							
Finleypoint---	Severe: slope	Severe: piping, large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
56:							
Finleypoint---	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
Wildgen-------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
57:							
Flott---------	Moderate: seepage, slope	Moderate: seepage, piping, large stones	Severe: no water	Deep to water	Slope, Droughty	Large stones	Large stones, Droughty

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
58:							
Flott---------	Severe: slope	Moderate: seepage, piping, large stones	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
59:							
Flott---------	Severe: slope	Moderate: seepage, piping, large stones	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
60:							
Flott---------	Severe: slope	Moderate: seepage, piping, large stones	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
61:							
Flott---------	Severe: slope	Moderate: seepage, piping, large stones	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
62:							
Gardencreek---	Slight	Moderate: hard to pack	Severe: slow refill	Deep to water	Percs slowly, Erodes easily	Erodes easily, Percs slowly	Too arid, Erodes easily, Percs slowly
63:							
Gird----------	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Erodes easily
64:							
Gird----------	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope	Erodes easily	Erodes easily
65:							
Gird----------	Moderate: seepage	Severe: piping	Moderate: deep to water, slow refill	Deep to water	Favorable	Erodes easily	Erodes easily
Dryfork-------	Moderate: seepage	Severe: piping	Moderate: deep to water, slow refill	Deep to water	Erodes easily	Erodes easily	Too arid, Erodes easily
66:							
Gird----------	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope	Erodes easily	Erodes easily
Vincom--------	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Too arid, Erodes easily, Percs slowly
67:							
Gird----------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope	Slope, Erodes easily	Slope, Erodes easily
Vincom--------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Slope, Erodes easily, Percs slowly	Too arid, Slope, Erodes easily
68:							
Glaciercreek--	Severe: seepage	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Large stones, Too sandy	Large stones, Droughty
69:							
Half Moon-----	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, Erodes easily	Erodes easily	Erodes easily
70:							
Half Moon-----	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, Erodes easily	Slope, Erodes easily	Slope, Erodes easily
Courville-----	Severe: slope	Slight	Severe: no water	Deep to water	Slope	Slope	Slope

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
71:							
Hogsby--------	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty, Depth to rock	Slope, Large stones, Depth to rock	Large stones, Slope, Droughty
Finleypoint---	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
72:							
Hogsby--------	Severe: depth to rock, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones, Depth to rock	Large stones, Slope, Droughty
Rock outcrop.							
73:							
Holloway------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
74:							
Holloway------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
75:							
Holloway------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
76:							
Holloway------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
77:							
Holloway------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
Rock outcrop.							
78:							
Holloway------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
Rubble land.							
79:							
Irvine--------	Severe: slope	Slight	Severe: no water	Deep to water	Slope, Droughty, Slow intake	Slope, Erodes easily, Percs slowly	Slope, Erodes easily, Droughty
80:							
Irvine--------	Severe: slope	Slight	Severe: no water	Deep to water	Slope, Droughty, Slow intake	Slope, Erodes easily, Percs slowly	Slope, Erodes easily, Droughty
81:							
Jocko---------	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Large stones, Droughty	Large stones, Too sandy	Large stones, Droughty
82:							
Jocko---------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones, Too sandy	Large stones, Slope, Droughty
83:							
Jocko---------	Severe: seepage	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Large stones, Too sandy	Large stones, Droughty
84:							
Kerl----------	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope	Favorable	Favorable

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
85:							
Kerl----------	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope	Favorable	Favorable
86:							
Kerrdam-------	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, Erodes easily
87:							
Kerrdam-------	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, Erodes easily	Erodes easily	Too arid, Erodes easily
88:							
Kerrdam-------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, Erodes easily	Slope, Erodes easily	Too arid, Slope, Erodes easily
Vincom--------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Slope, Erodes easily, Percs slowly	Too arid, Slope, Erodes easily
89:							
Kerrdam-------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, Erodes easily	Slope, Erodes easily	Too arid, Slope, Erodes easily
Vincom--------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Slope, Erodes easily, Percs slowly	Too arid, Slope, Erodes easily
90:							
Kingspoint----	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope	Slope, Large stones	Large stones, Slope
91:							
Kingspoint----	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
92:							
Kingspoint----	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
93:							
Lamoose-------	Severe: seepage	Severe: seepage, wetness	Severe: cutbanks cave	Flooding, Frost action, Cutbanks cave	Wetness, Droughty, Flooding	Wetness, Too sandy	Wetness, Droughty
94:							
Lonepine------	Slight	Moderate: piping	Severe: no water	Deep to water	Erodes easily	Erodes easily	Too arid, Erodes easily
95:							
Lonepine------	Moderate: slope	Moderate: piping	Severe: no water	Deep to water	Slope, Erodes easily	Erodes easily	Too arid, Erodes easily
96:							
Lonepine------	Moderate: slope	Moderate: piping	Severe: no water	Deep to water	Slope, Erodes easily	Erodes easily	Too arid, Erodes easily
97:							
Lonepine------	Moderate: slope	Moderate: piping	Severe: no water	Deep to water	Slope, Erodes easily	Erodes easily	Too arid, Erodes easily
Vincom--------	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Too arid, Erodes easily, Percs slowly
98:							
Lonepine------	Severe: slope	Moderate: piping	Severe: no water	Deep to water	Slope, Erodes easily	Slope, Erodes easily	Too arid, Slope, Erodes easily
Vincom--------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Slope, Erodes easily, Percs slowly	Too arid, Slope, Erodes easily

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
99: Marklepass----	Slight	Slight	Severe: no water	Deep to water	Droughty, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Too arid, Erodes easily, Droughty
100: Marklepass----	Slight	Slight	Severe: no water	Deep to water	Droughty, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Too arid, Erodes easily, Droughty
Slickspots.							
101: McCollum------	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing	Soil blowing	Favorable
102: McCollum------	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, Soil blowing	Soil blowing	Favorable
103: McCollum------	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, Soil blowing	Soil blowing	Favorable
104: McCollum------	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing	Soil blowing	Favorable
105: McDonald------	Moderate: slope	Moderate: hard to pack, large stones	Severe: no water	Deep to water	Slope, Large stones, Percs slowly	Large stones, Percs slowly	Large stones, Percs slowly
106: McDonald------	Moderate: slope	Moderate: hard to pack, large stones	Severe: no water	Deep to water	Slope, Large stones, Percs slowly	Large stones, Percs slowly	Large stones, Percs slowly
107: McDonald------	Severe: slope	Moderate: piping, large stones	Severe: no water	Deep to water	Slope, Large stones, Percs slowly	Slope, Large stones	Large stones, Slope, Percs slowly
108: McDonald------	Slight	Moderate: hard to pack	Severe: no water	Deep to water	Percs slowly	Percs slowly	Percs slowly
109: Minesinger----	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones, Percs slowly	Too arid, Large stones, Slope
110: Minesinger----	Severe: slope	Severe: large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones, Percs slowly	Too arid, Large stones, Slope
Walstead------	Severe: slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
111: Mitten--------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
112: Mitten--------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
113: Mitten--------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
114:							
Mitten--------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
Rock outcrop.							
115:							
Moiese--------	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Large stones, Too sandy	Large stones, Droughty
116:							
Mollman-------	Moderate: seepage	Moderate: seepage, piping, large stones	Severe: no water	Deep to water	Favorable	Large stones	Large stones
117:							
Mollman-------	Severe: slope	Moderate: seepage, piping, large stones	Severe: no water	Deep to water	Slope	Slope, Large stones	Large stones, Slope
118:							
Mollman-------	Severe: slope	Moderate: seepage, piping, large stones	Severe: no water	Deep to water	Slope	Slope, Large stones	Large stones, Slope
119:							
Mollman-------	Severe: slope	Moderate: seepage, piping, large stones	Severe: no water	Deep to water	Slope, Large stones	Slope, Large stones	Large stones, Slope
120:							
Niarada-------	Moderate: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty, Rooting depth	Large stones	Large stones, Droughty, Rooting depth
121:							
Niarada-------	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty, Rooting depth	Large stones	Large stones, Droughty, Rooting depth
122:							
Niarada-------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty, Rooting depth	Slope, Large stones	Large stones, Slope, Droughty
123:							
Niarada-------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty, Rooting depth	Slope, Large stones	Large stones, Slope, Droughty
124:							
Niarada-------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty, Rooting depth	Slope, Large stones	Large stones, Slope, Droughty
125:							
Niarada-------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty, Rooting depth	Slope, Large stones	Large stones, Slope, Droughty
Kerl----------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope	Slope	Slope
126:							
Ninepipe------	Moderate: seepage	Severe: piping	Moderate: deep to water, slow refill	Deep to water	Favorable	Favorable	Favorable
127:							
Phillcher-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
128:							
Phillcher-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
Rock outcrop.							
129:							
Pits.							
130:							
Polson--------	Slight	Severe: piping, excess sodium	Severe: no water	Deep to water	Excess sodium, Excess salt	Erodes easily	Excess sodium, Erodes easily
131:							
Polson--------	Moderate: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, Excess sodium, Excess salt	Erodes easily	Excess sodium, Erodes easily
132:							
Polson--------	Moderate: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, Excess sodium, Excess salt	Erodes easily	Excess sodium, Erodes easily
Vincom--------	Moderate: slope	Severe: piping	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Too arid, Erodes easily, Percs slowly
133:							
Post----------	Slight	Severe: hard to pack, excess sodium	Severe: no water	Deep to water	Percs slowly, Erodes easily, Excess sodium	Erodes easily, Percs slowly	Excess sodium, Erodes easily, Percs slowly
134:							
Post----------	Moderate: slope	Severe: hard to pack, excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Excess sodium, Erodes easily, Percs slowly
135:							
Post----------	Moderate: slope	Severe: hard to pack, excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Excess sodium, Erodes easily, Percs slowly
136:							
Post----------	Moderate: slope	Severe: hard to pack, excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Excess sodium, Erodes easily, Percs slowly
Ronan---------	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Too arid, Excess sodium, Erodes easily
Water.							
137:							
Post----------	Severe: slope	Severe: hard to pack, excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Slope, Erodes easily, Percs slowly	Slope, Excess sodium, Erodes easily
Ronan---------	Severe: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Slope, Erodes easily, Percs slowly	Too arid, Slope, Excess sodium
Water.							
138:							
Repp----------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
139:							
Repp----------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
Rock outcrop.							

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
140:							
Rock outcrop.							
Rubble land.							
141:							
Ronan---------	Slight	Severe: excess sodium	Severe: no water	Deep to water	Percs slowly, Erodes easily, Excess sodium	Erodes easily, Percs slowly	Too arid, Excess sodium, Erodes easily
142:							
Ronan---------	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Too arid, Excess sodium, Erodes easily
143:							
Ronan---------	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Too arid, Excess sodium, Erodes easily
144:							
Round Butte---	Slight	Severe: excess sodium	Severe: no water	Deep to water	Droughty, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Too arid, Excess sodium, Erodes easily
145:							
Round Butte---	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, Droughty, Percs slowly	Erodes easily, Percs slowly	Too arid, Excess sodium, Erodes easily
146:							
Round Butte---	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, Droughty, Percs slowly	Erodes easily, Percs slowly	Too arid, Excess sodium, Erodes easily
147:							
Round Butte---	Slight	Severe: excess sodium	Severe: no water	Deep to water	Droughty, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Too arid, Excess sodium, Erodes easily
148:							
Round Butte---	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, Droughty, Percs slowly	Erodes easily, Percs slowly	Too arid, Excess sodium, Erodes easily
Irvine--------	Moderate: slope	Slight	Severe: no water	Deep to water	Slope, Droughty, Percs slowly	Erodes easily, Percs slowly	Erodes easily, Droughty, Percs slowly
149:							
Round Butte---	Severe: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, Droughty, Percs slowly	Slope, Erodes easily, Percs slowly	Too arid, Slope, Excess sodium
Irvine--------	Severe: slope	Slight	Severe: no water	Deep to water	Slope, Droughty, Percs slowly	Slope, Erodes easily, Percs slowly	Slope, Erodes easily, Droughty
150:							
Rumblecreek---	Moderate: slope	Slight	Severe: no water	Deep to water	Slope, Droughty	Favorable	Droughty
151:							
Rumblecreek---	Severe: slope	Slight	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
152:							
Rumblecreek---	Severe: slope	Slight	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
153:							
Rumblecreek---	Severe: slope	Slight	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
154:							
Sacheen-------	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, Droughty, Fast intake	Too sandy, Soil blowing	Droughty

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
155:							
Sacheen-------	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, Droughty, Fast intake	Too sandy, Soil blowing	Droughty
156:							
Selon---------	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Soil blowing	Soil blowing	Favorable
157:							
Selon---------	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, Soil blowing	Soil blowing	Favorable
158:							
Selon---------	Severe: seepage	Severe: piping	Severe: no water	Deep to water	Slope, Soil blowing	Soil blowing	Favorable
159:							
Selon---------	Severe: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope, Soil blowing	Slope, Soil blowing	Slope
160:							
Selow---------	Moderate: seepage	Severe: piping, excess sodium	Severe: no water	Deep to water	Percs slowly, Erodes easily, Excess sodium	Erodes easily	Too arid, Excess sodium, Erodes easily
161:							
Selow---------	Moderate: seepage, slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Erodes easily	Too arid, Excess sodium, Erodes easily
162:							
Tevis---------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
163:							
Trapps--------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
164:							
Trapps--------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope	Slope, Droughty
165:							
Truscreek-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Favorable	Erodes easily	Erodes easily
166:							
Truscreek-----	Moderate: seepage	Severe: piping	Severe: no water	Deep to water	Favorable	Erodes easily	Erodes easily
Polson--------	Slight	Severe: piping, excess sodium	Severe: no water	Deep to water	Excess sodium, Excess salt	Erodes easily	Excess sodium, Erodes easily
167:							
Truscreek-----	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope	Erodes easily	Erodes easily
Polson--------	Moderate: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, Excess sodium, Excess salt	Erodes easily	Excess sodium, Erodes easily
168:							
Truscreek-----	Moderate: seepage, slope	Severe: piping	Severe: no water	Deep to water	Slope	Erodes easily	Erodes easily
Polson--------	Moderate: slope	Severe: piping, excess sodium	Severe: no water	Deep to water	Slope, Excess sodium, Excess salt	Erodes easily	Excess sodium, Erodes easily
169:							
Typic Haplaquepts.							

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
170:							
Vincom--------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Slope, Erodes easily, Percs slowly	Too arid, Slope, Erodes easily
171:							
Vincom--------	Severe: slope	Severe: piping	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Slope, Erodes easily, Percs slowly	Too arid, Slope, Erodes easily
Lonepine------	Severe: slope	Moderate: piping	Severe: no water	Deep to water	Slope, Erodes easily	Slope, Erodes easily	Too arid, Slope, Erodes easily
172:							
Waldbillig----	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
173:							
Waldbillig----	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
174:							
Walstead------	Moderate: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Large stones	Large stones, Droughty
175:							
Walstead------	Moderate: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Large stones	Large stones, Droughty
176:							
Walstead------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
177:							
Walstead------	Severe: slope	Severe: seepage, large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
Rock outcrop.							
178:							
Whitearth-----	Moderate: slope	Severe: excess sodium	Severe: no water	Deep to water	Slope, Percs slowly, Erodes easily	Erodes easily, Percs slowly	Too arid, Excess sodium, Erodes easily
Esteslake-----	Moderate: slope	Slight	Severe: no water	Deep to water	Slope, Droughty, Percs slowly	Erodes easily, Percs slowly	Too arid, Erodes easily, Droughty
179:							
Wildgen-------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
180:							
Wildgen-------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
181:							
Wildgen-------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
Finleypoint---	Severe: slope	Moderate: large stones	Severe: no water	Deep to water	Slope, Large stones, Droughty	Slope, Large stones	Large stones, Slope, Droughty
182:							
Winfall-------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty

Map symbol and soil name	Limitations for-- Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Features affecting-- Drainage	Irrigation	Terraces and diversions	Grassed waterways
183:							
Winfall-------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
184:							
Winfall-------	Severe: slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
185:							
Winkler-------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
Rock outcrop.							
186:							
Winkler-------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
187:							
Winkler-------	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Large stones	Large stones, Slope, Droughty
Sharrott------	Severe: depth to rock, slope	Severe: thin layer	Severe: no water	Deep to water	Slope, Droughty, Depth to rock	Slope, Depth to rock	Slope, Droughty, Depth to rock
Rock outcrop.							
188:							
Xerofluvents.							
189:							
Xerofluvents.							
190:							
Yellowbay-----	Severe: seepage	Severe: seepage	Severe: no water	Deep to water	Droughty	Too sandy	Droughty
191:							
Yellowbay-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Too sandy	Slope, Droughty
192:							
Yellowbay-----	Severe: seepage, slope	Severe: seepage	Severe: no water	Deep to water	Slope, Droughty	Slope, Too sandy	Slope, Droughty

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

The table "Engineering Index Properties" gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given in the series descriptions in Part I of this survey.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, "gravelly." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the system adopted by the American Association of State Highway and Transportation Officials *(4)* and the Unified soil classification system *(5)*.

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or

higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

The tables "Physical Properties of the Soils" and "Chemical Properties of the Soils" show estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

The following paragraphs describe the columns in the table "Physical Properties of the Soils."

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given in the series descriptions in Part I of this survey.

Clay as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. The estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth-moving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In the table "Physical Properties of the Soils," the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For

others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, more than 9 percent, is sometimes used.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In the table "Physical Properties of Soils," the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) to predict the average rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, very fine sand, sand, and organic matter (up to 4 percent) and on soil structure and permeability. The estimates are modified by the presence of rock fragments. Values of K range from 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to soil blowing in cultivated areas. The groups indicate the susceptibility to soil blowing. Soils are grouped according to the following distinctions:

1. Coarse sands, sands, fine sands, and very fine sands. These soils generally are not suitable for crops. They are extremely erodible, and vegetation is difficult to establish.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, and sapric soil material. These soils are very highly erodible. Crops can be grown if intensive measures to control soil blowing are used.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams. These soils are highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams that have more than 5 percent finely divided calcium carbonate. These soils are highly erodible. Crops can be grown if intensive measures to control soil blowing are used.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay. These soils are moderately erodible. Crops can be grown if measures to control soil blowing are used.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material. These soils have less than 5 percent finely divided calcium carbonate. They are moderately erodible. Crops can be grown if measures to control soil blowing are used.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay. These soils have less than 5 percent finely divided calcium carbonate. They are moderately erodible. Crops can be grown if ordinary measures to control soil blowing are used.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material. These soils have less than 5 percent finely divided calcium carbonate. They are very slightly erodible. Crops can be grown if ordinary measures to control soil blowing are used.
8. Soils that are not subject to soil blowing because of rock fragments on the surface or because of surface wetness.

The following paragraphs describe columns in the table "Chemical Properties of the Soils."

Cation-exchange capacity is the total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. Soils having a high cation-exchange capacity can retain cations. The ability to retain cations helps to prevent the pollution of ground water.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on

many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the soil. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of the soil if used as construction material, and the potential of the soil to corrode metal and concrete.

Sodium adsorption ratio is the measure of sodium relative to calcium and magnesium in the water extract from saturated soil paste. Soils having a sodium adsorption ratio of 13 or more may be characterized by an increased dispersion of organic matter and clay particles, reduced permeability and aeration, and a general degradation of soil structure.

Water Features

The table "Water Features" gives estimates of several important water features used in land use planning that involves engineering considerations. These features are described in the following paragraphs.

Hydrologic soil groups are groups of soils that, when saturated, have the same runoff potential under similar storm and ground cover conditions. The soil properties that affect the runoff potential are those that influence the minimum rate of infiltration in a bare soil after prolonged wetting and when the soil is not frozen. These properties include the depth to a seasonal high water table, the intake rate, permeability after prolonged wetting, and the depth to a very slowly permeable layer. The influences of ground cover and slope are treated independently and are not taken into account in hydrologic soil groups.

In the definitions of the hydrologic soil groups, the infiltration rate is the rate at which water enters the soil at the surface and is controlled by surface conditions. The transmission rate is the rate at which water moves through the soil and is controlled by properties of the soil layers.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist chiefly of very deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a permanent high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflow from streams or by runoff from adjacent slopes. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in marshes and swamps or in closed depressions is considered to be ponding.

The table "Water Features" gives the frequency and duration of flooding and the time of year when flooding is most likely to occur. Frequency, duration, and probable dates of occurrence are estimated. Frequency generally is expressed as none, rare, occasional, or frequent. *None* means flooding is not probable; *rare* that it is unlikely but is possible under unusual weather conditions (the chance of flooding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); and *frequent* that it occurs often under normal weather conditions (the chance of flooding is more than 50 percent in any year). The term

common includes both frequent and occasional flooding.

Duration is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 to 30 days), and *very long* (more than 30 days). The time of year that flooding is most likely to occur is expressed in months. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and level of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

High water table (seasonal) is a zone of saturation at the highest average depth during the wettest season. It is at least 6 inches thick, persists in the soil for more than a few weeks, and is within 6 feet of the surface. Indicated in the table "Water Features" are depth to the seasonal high water table, the kind of water table, and the months of the year when the water table usually is highest.

An *apparent* water table is indicated by the level at which water stands in a freshly dug, unlined borehole after adequate time is allowed for adjustments in the surrounding soil.

A *perched* water table is one that is above an unsaturated zone in the soil. The basis for determining that a water table is perched may be general knowledge of the area. The water table is proven to be perched if the water level in a borehole is observed to fall when the borehole is extended.

Two numbers in the column showing depth to the water table indicate the normal range in depth to a saturated zone. Depth is given to the nearest half foot. The first numeral in the range indicates the highest water level. A plus sign preceding the range in depth indicates that the water table is above the surface of the soil. "More than 6.0" indicates that the water table is below a depth of 6 feet or that it is within a depth of 6 feet for less than a month.

Soil Features

The table "Soil Features" gives estimates of several important soil features used in land use planning that involves engineering considerations. These features are described in the following paragraphs.

Depth to bedrock is given if bedrock is within a depth of 60 inches. The depth is based on many soil borings and on observations during soil mapping. The rock is either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

Potential frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage mainly to pavements and other rigid structures.

A *low* potential for frost action indicates that the soil is rarely susceptible to the formation of ice lenses; a *moderate* potential indicates that the soil is susceptible to the formation of ice lenses, resulting in frost heave and the subsequent loss of soil strength; and a *high* potential indicates that the soil is highly susceptible to the formation of ice lenses, resulting in frost heave and the subsequent loss of soil strength.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil.

Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low, moderate,* or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion is also expressed as *low, moderate,* or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
1: Aeric Haplaquepts.												
2: Badland.												
3: Bata----------	0-9	Gravelly silt loam	GM, GM-GC, CL-ML, ML	A-4	0	0-10	60-85	55-75	50-70	40-60	20-30	NP-10
	9-25	Very gravelly fine sandy loam, very gravelly sandy loam, gravelly loam	GC, GM-GC, SC, SC-SM	A-2	0	0-15	40-70	30-60	20-50	10-35	25-35	5-15
	25-60	Very gravelly sandy clay loam, very gravelly clay loam	GC	A-2, A-6	0	0-15	35-60	30-50	20-45	15-40	30-40	10-20
4: Bata----------	0-9	Gravelly silt loam	GM, GM-GC, CL-ML, ML	A-4	0	0-10	60-85	55-75	50-70	40-60	20-30	NP-10
	9-25	Very gravelly fine sandy loam, very gravelly sandy loam, gravelly loam	GC, GM-GC, SC, SC-SM	A-2	0	0-15	40-70	30-60	20-50	10-35	25-35	5-15
	25-60	Very gravelly sandy clay loam, very gravelly clay loam	GC	A-2, A-6	0	0-15	35-60	30-50	20-45	15-40	30-40	10-20
5: Belton----------	0-8	Silt loam	CL-ML, ML	A-4	0	0-10	90-100	85-100	75-95	65-90	20-30	NP-10
	8-10	Silty clay loam	CL-ML, CL	A-4, A-6	0	0-10	90-100	85-100	80-100	70-95	20-30	5-15
	10-19	Silty clay loam, silty clay, clay	ML, MH	A-6, A-7	0	0-10	90-100	85-100	80-100	75-95	35-55	10-25
	19-29	Silty clay, silty clay loam	ML	A-6, A-7, A-4	0	0-10	90-100	85-100	80-100	75-95	30-50	5-20
	29-60	Silty clay loam, silt loam	CL-ML, CL	A-1, A-4	0	0-10	90-100	85-100	80-100	70-95	25-40	5-15
6: Belton----------	0-9	Silt loam	CL-ML, ML	A-4	0	0-10	90-100	85-100	75-95	65-90	20-30	NP-10
	9-14	Silty clay loam, silty clay, clay	ML, MH	A-6, A-7	0	0-10	90-100	85-100	80-100	75-95	35-55	10-25
	14-20	Silty clay, silty clay loam	ML	A-6, A-7, A-4	0	0-10	90-100	85-100	80-100	75-95	30-50	5-20
	20-60	Silty clay loam, silt loam	CL-ML, CL	A-1, A-4	0	0-10	90-100	85-100	80-100	70-95	25-40	5-15
7: Belton----------	0-9	Silt loam	CL-ML, ML	A-4	0	0-10	90-100	85-100	75-95	65-90	20-30	NP-10
	9-14	Silty clay loam, silty clay, clay	ML, MH	A-6, A-7	0	0-10	90-100	85-100	80-100	75-95	35-55	10-25
	14-20	Silty clay, silty clay loam	ML	A-6, A-7, A-4	0	0-10	90-100	85-100	80-100	75-95	30-50	5-20
	20-60	Silty clay loam, silt loam	CL-ML, CL	A-1, A-4	0	0-10	90-100	85-100	80-100	70-95	25-40	5-15

ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
8:												
Belton----------	0-8	Silt loam	CL-ML, ML	A-4	0	0-10	90-100	85-100	75-95	65-90	20-30	NP-10
	8-10	Silty clay loam	CL-ML, CL	A-4, A-6	0	0-10	90-100	85-100	80-100	70-95	20-30	5-15
	10-19	Silty clay loam, silty clay, clay	ML, MH	A-6, A-7	0	0-10	90-100	85-100	80-100	75-95	35-55	10-25
	19-29	Silty clay, silty clay loam	ML	A-6, A-7, A-4	0	0-10	90-100	85-100	80-100	75-95	30-50	5-20
	29-60	Silty clay loam, silt loam	CL-ML, CL	A-1, A-4	0	0-10	90-100	85-100	80-100	70-95	25-40	5-15
Kerl----------	0-7	Silt loam	CL-ML, CL	A-4, A-6	0	0-10	90-100	85-100	75-100	60-90	25-35	5-15
	7-20	Silt loam, loam, gravelly loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0	0-10	75-100	65-100	60-95	45-85	25-35	5-15
	20-60	Silt loam, gravelly loam, loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0	0-10	75-90	65-85	60-75	45-70	25-35	5-15
9:												
Belton----------	0-9	Silt loam	CL-ML, ML	A-4	0	0-10	90-100	85-100	75-95	65-90	20-30	NP-10
	9-13	Silty clay loam, silty clay, clay	ML, MH	A-6, A-7	0	0-10	90-100	85-100	80-100	75-95	35-55	10-25
	13-29	Silty clay, silty clay loam	ML	A-6, A-7, A-4	0	0-10	90-100	85-100	80-100	75-95	30-50	5-20
	29-60	Silty clay loam, silt loam	CL-ML, CL	A-1, A-4	0	0-10	90-100	85-100	80-100	70-95	25-40	5-15
Kerl----------	0-7	Silt loam	CL-ML, CL	A-4, A-6	0	0-10	90-100	85-100	75-100	60-90	25-35	5-15
	7-20	Silt loam, loam, gravelly loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0	0-10	75-100	65-100	60-95	45-85	25-35	5-15
	20-60	Silt loam, gravelly loam, loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0	0-10	75-90	65-85	60-75	45-70	25-35	5-15
10:												
Bigarm----------	0-10	Cobbly loam	SM, SC-SM, ML, CL-ML	A-4	0	15-30	75-85	70-80	60-75	40-60	20-30	NP-10
	10-16	Very cobbly loam, very cobbly fine sandy loam, very cobbly sandy loam	GM, GM-GC, SM, SC-SM	A-4, A-2, A-1	0	30-45	45-75	40-70	30-60	15-45	20-30	NP-10
	16-60	Very cobbly sandy loam, very cobbly loam, very cobbly fine sandy loam	SM, GM	A-1, A-2	0	30-45	50-80	40-70	25-50	10-30	15-25	NP-5
11:												
Bigarm----------	0-9	Cobbly loam	CL-ML, SC-SM	A-4	0	15-30	80-90	70-80	50-65	45-60	20-30	5-10
	9-18	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, GM-GC	A-2, A-1	0	0-20	40-50	30-50	20-40	15-35	15-25	NP-10
	18-60	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam	GM	A-1, A-2	0	0-20	40-60	30-50	20-40	15-35	15-25	NP-5

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
12:												
Bigarm----------	0-12	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0-10	65-80	55-70	45-60	40-55	20-30	5-10
	12-22	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, GM-GC	A-2, A-1	0	0-20	40-50	30-50	20-40	15-35	15-25	NP-10
	22-60	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam	GM	A-1, A-2	0	0-20	40-60	30-50	20-40	15-35	15-25	NP-5
13:												
Bigarm----------	0-10	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0-10	65-80	55-70	45-60	40-55	20-30	5-10
	10-24	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, GM-GC	A-2, A-1	0	0-20	40-50	30-50	20-40	15-35	15-25	NP-10
	24-39	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam	GM	A-1, A-2	0	0-20	40-60	30-50	20-40	15-35	15-25	NP-5
	39-60	Extremely gravelly loamy sand, very gravelly sandy loam, very gravelly loam	GM, GP-GM	A-1, A-2	0	10-40	25-55	15-45	10-40	5-30	15-25	NP-5
Hogsby----------	0-5	Stony loam	CL-ML, SC-SM	A-4	10-15	0-10	75-100	65-90	50-75	40-70	20-30	5-10
	5-18	Extremely channery loam, very channery sandy loam, very flaggy loam	GM, GM-GC, GP-GM	A-2, A-1	0	25-40	25-60	15-50	10-40	5-45	20-30	NP-10
	18-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	NP
Rock outcrop.												
14:												
Bigarm----------	0-10	Stony loam	SM, SC-SM, ML, CL-ML	A-4	0	15-30	75-85	70-80	60-75	40-60	20-30	NP-10
	10-16	Very cobbly loam, very cobbly fine sandy loam, very cobbly sandy loam	GM, GM-GC, SM, SC-SM	A-4, A-2, A-1	0	30-45	45-75	40-70	30-60	15-45	20-30	NP-10
	16-60	Very cobbly loamy sand, extremely cobbly loamy sand, extremely cobbly sandy loam	GP-GM, SP-SM, GM, SM	A-1	0	30-55	25-75	15-60	10-40	5-20	---	NP
Rubble land.												

ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
15:												
Bigarm----------	0-12	Very gravelly loam	GM-GC	A-2, A-4	0	0-15	40-60	30-50	25-45	20-40	20-30	5-10
	12-18	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, GM-GC	A-2, A-1	0	0-20	40-50	30-50	20-40	15-35	15-25	NP-10
	18-38	Very gravelly fine sandy loam, very gravelly loam, very gravelly sandy loam	GM	A-1, A-2	0	0-20	40-60	30-50	20-40	15-35	15-25	NP-5
	38-60	Extremely gravelly loamy sand, very gravelly sandy loam, very gravelly loam	GM, GP-GM	A-1, A-2	0	10-40	25-55	15-45	10-40	5-30	15-25	NP-5
Hogsby----------	0-6	Gravelly loam	CL-ML, SC-SM, GM-GC	A-4	0	0-10	60-80	55-75	40-70	35-60	20-30	5-10
	6-15	Extremely channery loam, very channery sandy loam, very flaggy loam	GM, GM-GC, GP-GM	A-2, A-1	0	25-40	25-60	15-50	10-40	5-35	20-30	NP-10
	15-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	NP
Rock outcrop.												
16:												
Bigarm----------	0-12	Stony loam	CL-ML, SC-SM	A-4	0	15-30	80-90	70-80	50-65	45-60	20-30	5-10
	12-18	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, GM-GC	A-2, A-1	0	0-20	40-50	30-50	20-40	15-35	15-25	NP-10
	18-60	Extremely gravelly loamy sand, very gravelly sandy loam, very gravelly loam	GM, GP-GM	A-1, A-2	0	10-40	25-55	15-45	10-40	5-30	15-25	NP-5
Rock outcrop.												
Rubble land.												
17:												
Bohnly----------	0-8	Silt loam	CL-ML	A-4	0	0	100	100	95-100	75-95	20-30	5-10
	8-36	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	25-30	5-10
	36-46	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	75-95	25-35	5-15
	46-60	Stratified silt loam to fine sand	ML	A-4	0	0-10	90-100	85-100	75-100	60-90	15-25	NP-5
18:												
Bolack----------	0-10	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	20-25	NP-5
	10-14	Silty clay, silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	30-45	10-20
	14-44	Clay, silty clay	CL, CH	A-7, A-6	0	0	100	100	90-100	85-95	35-60	15-40
	44-60	Gravelly clay, clay, silty clay	CL, CH	A-7, A-6	0	0	70-95	60-90	55-90	50-85	35-60	15-40
19:												
Borohemists.												

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
20:												
Bowlake---------	0-9	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0-10	65-80	60-75	40-65	35-60	25-30	5-10
	9-11	Gravelly clay loam, gravelly silty clay loam, clay loam	CL, GC, SC	A-6, A-7	0	0-15	70-95	65-90	55-90	40-80	30-45	10-20
	11-19	Gravelly clay, gravelly silty clay loam, silty clay	CL, CH, GC	A-6, A-7	0	0-10	65-95	60-90	55-90	40-85	35-65	20-50
	19-22	Very gravelly clay loam, gravelly clay, silty clay	CL, GC	A-2, A-6, A-7	0	0-10	35-95	30-90	25-85	20-75	30-50	15-25
	22-60	Very gravelly loam, gravelly sandy clay loam, silty clay	CL-ML, CL, GM-GC, GC	A-2, A-4, A-6, A-7	0	0-15	45-95	40-90	35-90	25-75	25-50	5-25
21:												
Bowlake---------	0-11	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0-10	65-80	60-75	40-65	35-60	25-30	5-10
	11-19	Gravelly clay loam, gravelly silty clay loam, clay loam	CL, GC, SC	A-6, A-7	0	0-15	70-95	65-90	55-90	40-80	30-45	10-20
	19-32	Gravelly clay, gravelly silty clay loam, silty clay	CL, CH, GC	A-6, A-7	0	0-10	65-95	60-90	55-90	40-85	35-65	20-50
	32-51	Very gravelly clay loam, gravelly clay, silty clay	CL, GC	A-2, A-6, A-7	0	0-10	35-95	30-90	25-85	20-75	30-50	15-25
	51-60	Very gravelly loam, gravelly sandy clay loam, silty clay	CL-ML, CL, GM-GC, GC	A-2, A-4, A-6, A-7	0	0-15	45-95	40-90	35-90	25-75	25-50	5-25
Minesinger------	0-14	Gravelly loam	GM-GC	A-4	0	10-15	60-70	55-65	45-60	35-50	25-30	5-10
	14-24	Very cobbly loam, very stony loam, gravelly loam	GM-GC, CL-ML	A-4	0	15-40	60-75	55-75	45-70	35-60	25-30	5-10
	24-32	Very cobbly clay loam, very gravelly clay loam, very gravelly loam	GM-GC, GC	A-4, A-6, A-2	0	15-30	55-65	50-60	45-55	30-50	25-35	5-15
	32-39	Very gravelly clay, very gravelly clay loam, very cobbly clay	GC	A-6, A-7, A-2	0	15-40	50-65	45-60	40-55	25-50	35-50	15-30
	39-60	Very gravelly clay loam, very cobbly clay loam, very gravelly clay	GC	A-6, A-7, A-2	0	15-40	50-65	45-60	40-55	25-50	30-45	10-20
22:												
Colake----------	0-10	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-90	25-35	5-15
	10-19	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-90	25-35	5-15
	19-60	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-90	25-35	5-15

ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
23:												
Colake----------	0-10	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-90	25-35	5-15
	10-19	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-90	25-35	5-15
	19-60	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-90	25-35	5-15
24:												
Colake----------	0-10	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-90	25-35	5-15
	10-19	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-90	25-35	5-15
	19-60	Silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-90	25-35	5-15
Sacheen---------	0-4	Loamy fine sand	SM	A-2, A-4	0	0	95-100	90-100	70-95	25-40	---	NP
	4-60	Loamy fine sand, fine sand	SM	A-2, A-4	0	0	95-100	90-100	70-95	20-40	---	NP
25:												
Connah----------	0-6	Cobbly silt loam	ML, CL	A-4	0	10-15	85-90	80-85	70-85	55-75	20-25	5-10
	6-12	Silty clay loam, silty clay	ML	A-4, A-6	0	0-10	95-100	90-100	85-100	75-95	30-40	5-15
	12-38	Clay, silty clay	ML	A-6, A-7	0	0-10	95-100	90-100	80-100	75-95	35-50	10-20
	38-60	Silty clay, silty clay loam	ML, CL	A-6, A-7	0	0-10	95-100	90-100	85-100	75-95	30-50	10-20
26:												
Connah----------	0-7	Silt loam	CL-ML	A-4	0	0-10	90-100	85-100	75-100	60-90	20-25	5-10
	7-14	Silty clay loam, silty clay	ML	A-4, A-6	0	0-10	95-100	90-100	85-100	75-95	30-40	5-15
	14-34	Clay, silty clay	ML	A-6, A-7	0	0-10	95-100	90-100	80-100	75-95	35-50	10-20
	34-60	Silty clay, silty clay loam	ML, CL	A-6, A-7	0	0-10	95-100	90-100	85-100	75-95	30-50	10-20
27:												
Connah----------	0-7	Silty clay loam	CL-ML, CL	A-4, A-6	0	0-10	90-100	85-100	80-100	70-95	25-35	5-15
	7-13	Silty clay loam, silty clay	ML	A-4, A-6	0	0-10	95-100	90-100	85-100	75-95	30-40	5-15
	13-32	Clay, silty clay	ML	A-6, A-7	0	0-10	95-100	90-100	80-100	75-95	35-50	10-20
	32-60	Silty clay, silty clay loam	ML, CL	A-6, A-7	0	0-10	95-100	90-100	85-100	75-95	30-50	10-20
Water.												
28:												
Courville-------	0-14	Gravelly silt loam	ML, GM	A-4	0	0-10	60-80	55-75	50-70	35-60	30-40	NP-5
	14-32	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, SM	A-1	0	0-10	35-60	30-50	20-45	15-25	20-30	NP-5
	32-60	Very gravelly loam, very gravelly silt loam, very gravelly fine sandy loam	GM-GC, SC-SM	A-2	0	0-15	35-60	30-50	20-45	15-25	25-30	5-10
29:												
Courville-------	0-14	Gravelly silt loam	ML, GM	A-4	0	0-10	60-80	55-75	50-70	35-60	30-40	NP-5
	14-32	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, SM	A-1	0	0-10	35-60	30-50	20-45	15-25	20-30	NP-5

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
29 (con.):												
Courville-------	32-60	Very gravelly loam, very gravelly silt loam, very gravelly fine sandy loam	GM-GC, SC-SM	A-2	0	0-15	35-60	30-50	20-45	15-25	25-30	5-10
30:												
Courville-------	0-13	Gravelly silt loam	ML, GM	A-4	0	0-10	60-80	55-75	50-70	35-60	30-40	NP-5
	13-32	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, SM	A-1	0	0-10	35-60	30-50	20-45	15-25	20-30	NP-5
	32-60	Very gravelly loam, very gravelly silt loam, very gravelly fine sandy loam	GM-GC, SC-SM	A-2	0	0-15	35-60	30-50	20-45	15-25	25-30	5-10
31:												
Courville-------	0-9	Gravelly silt loam	ML, GM	A-4	0	0-10	60-80	55-75	50-70	35-60	30-40	NP-5
	9-19	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, SM	A-1	0	0-10	35-60	30-50	20-45	15-25	20-30	NP-5
	19-60	Very gravelly loam, very gravelly silt loam, very gravelly fine sandy loam	GM-GC, SC-SM	A-2	0	0-15	35-60	30-50	20-45	15-25	25-30	5-10
32:												
Courville-------	0-9	Gravelly silt loam	ML, GM	A-4	0	0-10	60-80	55-75	50-70	35-60	30-40	NP-5
	9-19	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, SM	A-1	0	0-10	35-60	30-50	20-45	15-25	20-30	NP-5
	19-60	Very gravelly loam, very gravelly silt loam, very gravelly fine sandy loam	GM-GC, SC-SM	A-2	0	0-15	35-60	30-50	20-45	15-25	25-30	5-10
33:												
Courville-------	0-9	Gravelly silt loam	ML, GM	A-4	0	0-10	60-80	55-75	50-70	35-60	30-40	NP-5
	9-19	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, SM	A-1	0	0-10	35-60	30-50	20-45	15-25	20-30	NP-5
	19-60	Very gravelly loam, very gravelly silt loam, very gravelly fine sandy loam	GM-GC, SC-SM	A-2	0	0-15	35-60	30-50	20-45	15-25	25-30	5-10
34:												
Courville-------	0-14	Gravelly silt loam	ML, GM	A-4	0	0-10	60-80	55-75	50-70	35-60	30-40	NP-5

ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
34 (con.):												
Courville-------	14-32	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, SM	A-1	0	0-10	35-60	30-50	20-45	15-25	20-30	NP-5
	32-60	Very gravelly loam, very gravelly silt loam, very gravelly fine sandy loam	GM-GC, SC-SM	A-2	0	0-15	35-60	30-50	20-45	15-25	25-30	5-10
Rumblecreek-----	0-12	Gravelly loam	SM, CL-ML, GM, SC-SM	A-2, A-4	0	0	60-85	50-75	45-70	30-60	20-30	NP-10
	12-18	Gravelly loam	GM-GC, GM, CL-ML, SC-SM	A-2, A-4	0	0	60-85	50-75	45-70	30-60	20-30	NP-10
	18-22	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC, GM-GC	A-2	0	0-15	35-60	30-50	25-45	20-35	25-40	5-15
	22-60	Very gravelly clay loam, very gravelly sandy clay loam	GC, GM-GC	A-2, A-4, A-6	0	0-15	35-60	30-50	25-45	20-40	25-40	5-15
35:												
Craddock--------	0-12	Channery silt loam	ML	A-4	0	0	75-80	70-75	65-70	50-60	30-40	NP-10
	12-20	Channery loam, loam, silt loam	GM, ML	A-4	0	0-10	60-100	55-100	50-95	35-85	---	NP
	20-60	Channery loam, channery silt loam, silt loam	GM, ML	A-4	0	0-10	60-100	55-95	45-90	35-80	---	NP
36:												
Craddock--------	0-10	Silt loam	ML	A-4	0	0	80-100	75-100	70-95	55-85	30-40	NP-10
	10-33	Channery loam, loam, silt loam	GM, ML	A-4	0	0-10	60-100	55-100	50-95	35-85	---	NP
	33-60	Channery loam, channery silt loam, silt loam	GM, ML	A-4	0	0-10	60-100	55-95	45-90	35-80	---	NP
37:												
Craddock--------	0-10	Silt loam	ML	A-4	0	0	80-100	75-100	70-95	55-85	30-40	NP-10
	10-33	Channery loam, loam, silt loam	GM, ML	A-4	0	0-10	60-100	55-100	50-95	35-85	---	NP
	33-60	Channery loam, channery silt loam, silt loam	GM, ML	A-4	0	0-10	60-100	55-95	45-90	35-80	---	NP
38:												
Doker----------	0-7	Silt loam	ML	A-4	0	0	100	100	95-100	75-95	30-70	NP-10
	7-15	Silt loam	ML	A-4	0	0	100	100	70-95	60-90	30-40	NP-5
	15-60	Fine sandy loam	ML	A-4	0	0	95-100	85-100	75-95	55-65	15-25	NP-5
39:												
Dryfork---------	0-10	Silt loam	ML	A-4	0	0	100	100	95-100	75-90	25-35	NP-10
	10-16	Silt loam	ML	A-4	0	0	100	100	95-100	75-90	25-35	NP-10
	16-31	Silt loam	ML	A-4	0	0	100	100	95-100	75-90	25-35	NP-10
	31-60	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	90-100	70-90	25-40	NP-10
40:												
Dryfork---------	0-10	Silt loam	ML	A-4	0	0	100	100	95-100	75-90	25-35	NP-10
	10-16	Silt loam	ML	A-4	0	0	100	100	95-100	75-90	25-35	NP-10
	16-31	Silt loam	ML	A-4	0	0	100	100	95-100	75-90	25-35	NP-10
	31-60	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	90-100	70-90	25-40	NP-10

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
40 (con.):												
Selow----------	0-8	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	8-14	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	14-20	Silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	85-95	30-40	10-20
	20-28	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	90-100	75-90	15-20	NP
	28-60	Silt loam, very fine sandy loam, loamy fine sand	ML	A-4	0	0	100	100	90-100	60-85	15-20	NP
41:												
Dryfork---------	0-10	Silt loam	ML	A-4	0	0	100	100	95-100	75-90	25-35	NP-10
	10-16	Silt loam	ML	A-4	0	0	100	100	95-100	75-90	25-35	NP-10
	16-31	Silt loam	ML	A-4	0	0	100	100	95-100	75-90	25-35	NP-10
	31-60	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	90-100	70-90	25-40	NP-10
Selow----------	0-9	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	9-14	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	14-20	Silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	85-95	30-40	10-20
	20-28	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	90-100	75-90	15-20	NP
	28-60	Silt loam, very fine sandy loam, loamy fine sand	ML	A-4	0	0	100	100	90-100	60-85	15-20	NP
42:												
Dubay----------	0-5	Silt loam	ML	A-4	0	0	95-100	85-100	75-100	65-90	20-25	NP-5
	5-30	Silt loam, very fine sandy loam	ML	A-4	0	0	95-100	85-100	75-100	65-90	15-20	NP-5
	30-60	Silt loam, very fine sandy loam	ML	A-4	0	0	95-100	85-100	75-100	65-90	15-20	NP-5
43:												
Dubay----------	0-5	Silt loam	ML	A-4	0	0	95-100	85-100	75-100	65-90	20-25	NP-5
	5-30	Silt loam, very fine sandy loam	ML	A-4	0	0	95-100	85-100	75-100	65-90	15-20	NP-5
	30-60	Silt loam, very fine sandy loam	ML	A-4	0	0	95-100	85-100	75-100	65-90	15-20	NP-5
44:												
Eaglewing-------	0-11	Gravelly silt loam	CL-ML	A-4	0	0-15	65-80	60-75	55-75	50-70	25-30	5-10
	11-20	Silt loam, gravelly silt loam, gravelly loam	CL-ML	A-4	0	0-15	65-100	60-95	55-90	50-70	25-30	5-10
	20-60	Silt loam, gravelly silt loam, gravelly loam	CL-ML, GM-GC	A-4	0	0-25	65-100	60-95	55-90	45-70	25-30	5-10
45:												
Eaglewing-------	0-11	Gravelly silt loam	CL-ML	A-4	0	0-15	65-80	60-75	55-75	50-70	25-30	5-10
	11-20	Silt loam, gravelly silt loam, gravelly loam	CL-ML	A-4	0	0-15	65-100	60-95	55-90	50-70	25-30	5-10
	20-36	Silt loam, gravelly silt loam, gravelly loam	CL-ML, GM-GC	A-4	0	0-25	65-100	60-95	55-90	45-70	25-30	5-10

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
46:												
Eaglewing-------	0-17	Silt loam	CL-ML	A-4	0	0-5	90-100	85-95	75-95	60-85	25-30	5-10
	17-26	Silt loam, gravelly silt loam, gravelly loam	CL-ML	A-4	0	0-15	65-100	60-95	55-90	50-70	25-30	5-10
	26-60	Silt loam, gravelly silt loam, gravelly loam	CL-ML, GM-GC	A-4	0	0-25	65-100	60-95	55-90	45-70	25-30	5-10
47:												
Esteslake-------	0-3	Silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-15
	3-12	Silty clay, silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	15-25
	12-19	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	15-25
	19-60	Stratified silty clay loam to silty clay	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	15-25
Slickspots.												
48:												
Felan----------	0-8	Gravelly silt loam	ML, GM	A-4	0	0-10	65-80	60-75	50-75	40-65	30-40	NP-5
	8-16	Very gravelly silt loam, very gravelly loam, extremely gravelly silt loam	GM-GC, GM	A-2, A-4, A-1	0	0-15	30-60	20-50	20-45	15-40	20-30	NP-10
	16-60	Very gravelly silt loam, very gravelly loam, extremely gravelly loam	GM-GC, GM	A-2, A-1	0	0-15	25-55	15-45	15-40	10-35	20-30	NP-10
49:												
Felan----------	0-7	Gravelly silt loam	ML, GM	A-4	0	0-10	65-80	60-75	50-75	40-65	30-40	NP-5
	7-23	Very gravelly silt loam, very gravelly loam, extremely gravelly silt loam	GM-GC, GM	A-2, A-4, A-1	0	0-15	30-60	20-50	20-45	15-40	20-30	NP-10
	23-60	Very gravelly silt loam, very gravelly loam, extremely gravelly loam	GM-GC, GM	A-2, A-1	0	0-15	25-55	15-45	15-40	10-35	20-30	NP-10
50:												
Finleypoint-----	0-9	Cobbly loam	CL-ML	A-4	0	15-30	85-95	80-90	70-85	50-70	25-30	5-10
	9-30	Very gravelly loam, very cobbly loam, gravelly loam	GM-GC, CL-ML	A-2, A-4	0	15-45	45-85	40-80	35-75	25-60	25-30	5-10
	30-42	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, GM-GC	A-1, A-2, A-4	0	15-30	40-65	35-60	30-55	15-45	20-30	NP-10
	42-60	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GM-GC	A-2, A-4	0	10-30	40-60	35-55	30-50	20-40	25-30	5-10

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
51:												
Finleypoint-----	0-9	Cobbly loam	CL-ML	A-4	0	15-30	85-95	80-90	70-85	50-70	25-30	5-10
	9-30	Very gravelly loam, very cobbly loam, gravelly loam	GM-GC, CL-ML	A-2, A-4	0	15-45	45-85	40-80	35-75	25-60	25-30	5-10
	30-42	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, GM-GC	A-1, A-2, A-4	0	15-30	40-65	35-60	30-55	15-45	20-30	NP-10
	42-60	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GM-GC	A-2, A-4	0	10-30	40-60	35-55	30-50	20-40	25-30	5-10
52:												
Finleypoint-----	0-10	Gravelly loam	SC-SM, GM-GC, CL-ML	A-4	0	10-15	65-85	60-80	50-80	35-60	25-30	5-10
	10-22	Very gravelly loam, very cobbly loam, gravelly loam	GM-GC, CL-ML	A-2, A-4	0	15-45	45-85	40-80	35-75	25-60	25-30	5-10
	22-34	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, GM-GC	A-1, A-2, A-4	0	15-30	40-65	35-60	30-55	15-45	20-30	NP-10
	34-60	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GM-GC	A-2, A-4	0	10-30	40-60	35-55	30-50	20-40	25-30	5-10
53:												
Finleypoint-----	0-10	Gravelly loam	SC-SM, GM-GC, CL-ML	A-4	0	10-15	65-85	60-80	50-80	35-60	25-30	5-10
	10-22	Very gravelly loam, very cobbly loam, gravelly loam	GM-GC, CL-ML	A-2, A-4	0	15-45	45-85	40-80	35-75	25-60	25-30	5-10
	22-34	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, GM-GC	A-1, A-2, A-4	0	15-30	40-65	35-60	30-55	15-45	20-30	NP-10
	34-60	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GM-GC	A-2, A-4	0	10-30	40-60	35-55	30-50	20-40	25-30	5-10
54:												
Finleypoint-----	0-8	Gravelly loam	SC-SM, GM-GC, CL-ML	A-4	0	10-15	65-85	60-80	50-80	35-60	25-30	5-10
	8-30	Very gravelly loam, very cobbly loam, gravelly loam	GM-GC, CL-ML	A-2, A-4	0	15-45	45-85	40-80	35-75	25-60	25-30	5-10
	30-42	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, GM-GC	A-1, A-2, A-4	0	15-30	40-65	35-60	30-55	15-45	20-30	NP-10

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
54 (con.):												
Finleypoint-----	42-60	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GM-GC	A-2, A-4	0	10-30	40-60	35-55	30-50	20-40	25-30	5-10
55:												
Finleypoint-----	0-8	Very gravelly loam	SC-SM, GM-GC, CL-ML	A-4	0	10-15	65-85	60-80	50-80	35-60	25-30	5-10
	8-30	Very gravelly loam, very cobbly loam, gravelly loam	GM-GC, CL-ML	A-2, A-4	0	15-45	45-85	40-80	35-75	25-60	25-30	5-10
	30-42	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, GM-GC	A-1, A-2, A-4	0	15-30	40-65	35-60	30-55	15-45	20-30	NP-10
	42-60	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GM-GC	A-2, A-4	0	10-30	40-60	35-55	30-50	20-40	25-30	5-10
56:												
Finleypoint-----	0-10	Gravelly loam	SC-SM, GM-GC, CL-ML	A-4	0	10-15	65-85	60-80	50-80	35-60	25-30	5-10
	10-13	Very gravelly loam, very cobbly loam, gravelly loam	GM-GC, CL-ML	A-2, A-4	0	15-45	45-85	40-80	35-75	25-60	25-30	5-10
	13-34	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, GM-GC	A-1, A-2, A-4	0	15-30	40-65	35-60	30-55	15-45	20-30	NP-10
	34-60	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GM-GC	A-2, A-4	0	10-30	40-60	35-55	30-50	20-40	25-30	5-10
Wildgen---------	0-6	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0-15	65-75	60-70	50-65	35-55	25-30	5-10
	6-17	Very gravelly loam, gravelly loam	CL-ML, GM-GC	A-4, A-2	0	0-25	50-75	45-70	40-65	25-55	25-30	5-10
	17-60	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, GM-GC	A-2, A-4, A-1	0	10-40	45-60	40-55	25-50	10-40	20-30	NP-10
57:												
Flott----------	0-10	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0-15	65-80	60-75	55-70	40-60	20-30	NP-10
	10-23	Very gravelly loam, very gravelly silt loam	GM, GM-GC	A-2, A-4	0	0-25	40-55	35-50	30-45	25-40	20-30	NP-10
	23-44	Very gravelly loam, very gravelly silt loam, very gravelly clay loam	GM-GC, GM	A-2, A-4, A-6	0	0-25	40-55	35-50	30-50	25-45	25-35	5-15

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
57 (con.):												
Flott----------	44-60	Very gravelly loam, very gravelly silt loam, very gravelly clay loam	GM-GC, GM	A-2, A-4, A-6	0	0-25	40-55	35-50	30-50	25-45	25-35	5-15
58:												
Flott----------	0-10	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0-15	65-80	60-75	55-70	40-60	20-30	NP-10
	10-23	Very gravelly loam, very gravelly silt loam	GM, GM-GC	A-2, A-4	0	0-25	40-55	35-50	30-45	25-40	20-30	NP-10
	23-44	Very gravelly loam, very gravelly silt loam, very gravelly clay loam	GM-GC, GM	A-2, A-4, A-6	0	0-25	40-55	35-50	30-50	25-45	25-35	5-15
	44-60	Very gravelly loam, very gravelly silt loam, very gravelly clay loam	GM-GC, GM	A-2, A-4, A-6	0	0-25	40-55	35-50	30-50	25-45	25-35	5-15
59:												
Flott----------	0-8	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0-15	65-80	60-75	55-70	40-60	20-30	NP-10
	8-18	Very gravelly loam, very gravelly silt loam	GM, GM-GC	A-2, A-4	0	0-25	40-55	35-50	30-45	25-40	20-30	NP-10
	18-32	Very gravelly loam, very gravelly silt loam, very gravelly clay loam	GM-GC, GM	A-2, A-4, A-6	0	0-25	40-55	35-50	30-50	25-45	25-35	5-15
	32-60	Very gravelly loam, very gravelly silt loam, very gravelly clay loam	GM-GC, GM	A-2, A-4, A-6	0	0-25	40-55	35-50	30-50	25-45	25-35	5-15
60:												
Flott----------	0-13	Gravelly loam	ML, CL-ML, GM, GM-GC	A-4	0	0-15	65-80	60-75	55-70	40-60	20-30	NP-10
	13-18	Very gravelly loam, very gravelly silt loam	GM, GM-GC	A-2, A-4	0	0-25	40-55	35-50	30-45	25-40	20-30	NP-10
	18-23	Very gravelly loam, very gravelly silt loam, very gravelly clay loam	GM-GC, GM	A-2, A-4, A-6	0	0-25	40-55	35-50	30-50	25-45	25-35	5-15
	23-60	Very gravelly loam, very gravelly silt loam, very gravelly clay loam	GM-GC, GM	A-2, A-4, A-6	0	0-25	40-55	35-50	30-50	25-45	25-35	5-15
61:												
Flott----------	0-10	Very gravelly loam	GM, GM-GC	A-2, A-4	0	15-25	40-65	35-60	30-55	25-50	20-30	NP-10

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
61 (con.):												
Flott----------	10-18	Very gravelly loam, very gravelly silt loam	GM, GM-GC	A-2, A-4	0	0-25	40-55	35-50	30-45	25-40	20-30	NP-10
	18-23	Very gravelly loam, very gravelly silt loam, very gravelly clay loam	GM-GC, GM	A-2, A-4, A-6	0	0-25	40-55	35-50	30-50	25-45	25-35	5-15
	23-60	Very gravelly loam, very gravelly silt loam, very gravelly clay loam	GM-GC, GM	A-2, A-4, A-6	0	0-25	40-55	35-50	30-50	25-45	25-35	5-15
62:												
Gardencreek-----	0-6	Silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-35	10-20
	6-20	Silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-20
	20-60	Silty clay loam, silty clay	CL, CH	A-6, A-7	0	0	100	100	95-100	85-95	35-55	15-40
63:												
Gird----------	0-10	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	20-25	NP-5
	10-17	Silt loam	ML	A-4	0	0	100	100	95-100	75-95	20-25	NP-5
	17-60	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-80	20-25	NP-5
64:												
Gird----------	0-8	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	20-25	NP-5
	8-20	Silt loam	ML	A-4	0	0	100	100	95-100	75-95	20-25	NP-5
	20-60	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-80	20-25	NP-5
65:												
Gird----------	0-8	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	20-25	NP-5
	8-28	Silt loam	ML	A-4	0	0	100	100	95-100	75-95	20-25	NP-5
	28-60	Silt loam	ML	A-4	0	0	100	100	95-100	75-80	20-25	NP-5
Dryfork---------	0-13	Silt loam	ML	A-4	0	0	100	100	95-100	75-90	25-35	NP-10
	13-24	Silt loam	ML	A-4	0	0	100	100	95-100	75-90	25-35	NP-10
	24-60	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	90-100	70-90	25-40	NP-10
66:												
Gird----------	0-8	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	20-25	NP-5
	8-17	Silt loam	ML	A-4	0	0	100	100	95-100	75-95	20-25	NP-5
	17-60	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-80	20-25	NP-5
Vincom----------	0-5	Silt loam	ML, CL-ML	A-4	0	0	100	100	90-100	75-90	20-30	NP-10
	5-22	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	22-60	Stratified silt loam to silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
67:												
Gird----------	0-7	Silt loam	ML	A-4	0	0	100	100	90-100	70-90	20-25	NP-5
	7-29	Silt loam	ML	A-4	0	0	100	100	95-100	75-95	20-25	NP-5
	29-60	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-80	20-25	NP-5
Vincom----------	0-5	Silt loam	ML, CL-ML	A-4	0	0	100	100	90-100	75-90	20-30	NP-10
	5-22	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	22-60	Stratified silt loam to silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
68:												
Glaciercreek----	0-11	Gravelly silt loam	ML, GM	A-4	0	0-15	65-80	60-75	55-70	40-60	20-25	NP-5
	11-60	Extremely gravelly coarse sand, extremely gravelly loamy sand, extremely cobbly sand	GP, GP-GM	A-1	0	10-45	20-50	10-30	5-20	0-10	---	NP
69:												
Half Moon-------	0-11	Silt loam	ML	A-4	0	0-15	95-100	95-100	90-100	75-90	25-40	NP-10
	11-16	Silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	90-100	90-100	75-95	25-40	5-15
	16-26	Silt loam, silty clay loam	CL-ML	A-4	0	0	100	100	90-100	75-95	25-30	5-10
	26-60	Stratified very fine sandy loam to silty clay	ML	A-4	0	0	100	100	85-95	55-90	25-35	NP-10
70:												
Half Moon-------	0-11	Silt loam	ML	A-4	0	0-15	95-100	95-100	90-100	75-90	25-40	NP-10
	11-31	Silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	90-100	90-100	75-95	25-40	5-15
	31-60	Silt loam, silty clay loam	CL-ML	A-4	0	0	100	100	90-100	75-95	25-30	5-10
Courville-------	0-14	Gravelly silt loam	ML, GM	A-4	0	0-10	60-80	55-75	50-70	35-60	30-40	NP-5
	14-32	Very gravelly loam, very gravelly fine sandy loam, very gravelly sandy loam	GM, SM	A-1	0	0-10	35-60	30-50	20-45	15-25	20-30	NP-5
	32-60	Very gravelly loam, very gravelly silt loam, very gravelly fine sandy loam	GM-GC, SC-SM	A-2	0	0-15	35-60	30-50	20-45	15-25	25-30	5-10
71:												
Hogsby----------	0-8	Gravelly loam	CL-ML, SC-SM, GM-GC	A-4	0	0-10	60-80	55-75	40-70	35-60	20-30	5-10
	8-13	Extremely channery loam, very channery sandy loam, very flaggy loam	GM, GM-GC, GP-GM	A-2, A-1	0	25-40	25-60	15-50	10-40	5-35	20-30	NP-10
	13-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	NP
Finleypoint-----	0-13	Gravelly loam	SC-SM, GM-GC, CL-ML	A-4	0	10-15	65-85	60-80	50-80	35-60	25-30	5-10
	13-30	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, GM-GC	A-1, A-2, A-4	0	15-30	40-65	35-60	30-55	15-45	20-30	NP-10
	30-60	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GM-GC	A-2, A-4	0	10-30	40-60	35-55	30-50	20-40	25-30	5-10
72:												
Hogsby----------	0-5	Stony loam	CL-ML, SC-SM	A-4	10-15	0-10	75-100	65-90	50-75	40-70	20-30	5-10

ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
72 (con.):												
Hogsby----------	5-18	Extremely channery loam, very channery sandy loam, very flaggy loam	GM, GM-GC, GP-GM	A-2, A-1	0	25-40	25-60	15-50	10-40	5-45	20-30	NP-10
	18-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	NP
Rock outcrop.												
73:												
Holloway--------	0-9	Gravelly silt loam	ML, GM	A-4	0	5-15	65-80	60-75	55-70	40-65	30-40	NP-10
	9-25	Extremely gravelly fine sandy loam, very gravelly loam, extremely gravelly sandy loam	GM	A-1	0	0-25	25-50	20-40	15-35	10-25	15-25	NP-5
	25-60	Extremely gravelly fine sandy loam, extremely gravelly sandy loam, extremely gravelly loam	GP-GM, GM	A-1	0	10-25	20-35	15-30	10-25	5-20	15-25	NP-5
74:												
Holloway--------	0-10	Gravelly silt loam	ML, GM	A-4	0	5-15	65-80	60-75	55-70	40-65	30-40	NP-10
	10-26	Extremely gravelly fine sandy loam, very gravelly loam, extremely gravelly sandy loam	GM	A-1	0	0-25	25-50	20-40	15-35	10-25	15-25	NP-5
	26-60	Extremely gravelly fine sandy loam, extremely gravelly sandy loam, extremely gravelly loam	GP-GM, GM	A-1	0	10-25	20-35	15-30	10-25	5-20	15-25	NP-5
75:												
Holloway--------	0-9	Gravelly silt loam	ML, GM	A-4	0	5-15	65-80	60-75	55-70	40-65	30-40	NP-10
	9-20	Extremely gravelly fine sandy loam, very gravelly loam, extremely gravelly sandy loam	GM	A-1	0	0-25	25-50	20-40	15-35	10-25	15-25	NP-5
	20-46	Extremely gravelly fine sandy loam, extremely gravelly sandy loam, extremely gravelly loam	GP-GM, GM	A-1	0	10-25	20-35	15-30	10-25	5-20	15-25	NP-5
	46-60	Extremely gravelly sandy loam, extremely gravelly loamy sand	GP-GM	A-1	0	10-30	15-35	10-30	10-20	5-10	15-25	NP-5

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
76:												
Holloway--------	0-9	Gravelly silt loam	ML, GM	A-4	0	5-15	65-80	60-75	55-70	40-65	30-40	NP-10
	9-20	Extremely gravelly fine sandy loam, very gravelly loam, extremely gravelly sandy loam	GM	A-1	0	0-25	25-50	20-40	15-35	10-25	15-25	NP-5
	20-60	Extremely gravelly fine sandy loam, extremely gravelly sandy loam, extremely gravelly loam	GP-GM, GM	A-1	0	10-25	20-35	15-30	10-25	5-20	15-25	NP-5
77:												
Holloway--------	0-10	Gravelly silt loam	ML, GM	A-4	0	5-15	65-85	60-80	55-75	40-70	30-40	NP-10
	10-17	Extremely channery fine sandy loam, extremely channery sandy loam, extremely gravelly loam	GP-GM, GM	A-1	0	5-25	15-35	10-30	10-25	5-15	15-25	NP-5
	17-60	Extremely channery fine sandy loam, extremely channery sandy loam, extremely gravelly loam	GP-GM, GP, GM	A-1	0	10-25	10-35	5-30	5-25	0-15	15-25	NP-5
Rock outcrop.												
78:												
Holloway--------	0-9	Gravelly silt loam	ML, GM	A-4	0	5-15	65-80	60-75	55-70	40-65	30-40	NP-10
	9-17	Extremely gravelly fine sandy loam, very gravelly loam, extremely gravelly sandy loam	GM	A-1	0	0-25	25-50	20-40	15-35	10-25	15-25	NP-5
	17-60	Extremely gravelly fine sandy loam, extremely gravelly sandy loam, extremely gravelly loam	GP-GM, GM	A-1	0	10-25	20-35	15-30	10-25	5-20	15-25	NP-5
Rubble land.												
79:												
Irvine----------	0-8	Silty clay	CL	A-7	0	0-15	90-100	90-100	90-100	80-100	40-50	20-30
	8-14	Silty clay, silty clay loam	CL	A-7, A-6	0	0-15	90-100	90-100	90-100	80-100	35-50	15-30
	14-60	Silty clay, silty clay loam	CL	A-7, A-6	0	0-15	90-100	90-100	90-100	80-100	35-50	15-30
80:												
Irvine----------	0-8	Silty clay	CL	A-6	0	0-15	90-100	90-100	90-100	80-100	35-50	15-35
	8-14	Silty clay, silty clay loam	CL	A-7, A-6	0	0-15	90-100	90-100	90-100	80-100	35-50	15-30
	14-60	Silty clay, silty clay loam	CL	A-7, A-6	0	0-15	90-100	90-100	90-100	80-100	35-50	15-30

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
81:												
Jocko----------	0-13	Gravelly loam	GM-GC, CL-ML, SC-SM	A-4	0	0-15	65-80	60-75	45-60	40-55	20-30	5-10
	13-19	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GM	A-2, A-1	0	15-30	40-65	35-60	25-50	15-35	15-25	NP-5
	19-25	Very gravelly loamy sand, very gravelly sandy loam, very cobbly sandy loam	GM, SM	A-1	0	15-30	40-70	35-60	20-45	10-20	---	NP
	25-60	Extremely gravelly coarse sand, extremely gravelly sand, extremely gravelly loamy sand	GP, GP-GM	A-1	0	25-45	25-45	15-35	5-25	0-10	---	NP
82:												
Jocko----------	0-7	Gravelly loam	GM-GC, CL-ML, SC-SM	A-4	0	0-15	65-80	60-75	45-60	40-55	20-30	5-10
	7-16	Very gravelly loam, very gravelly sandy loam, very cobbly loam	GM	A-2, A-1	0	15-30	40-65	35-60	25-50	15-35	15-25	NP-5
	16-22	Very gravelly loamy sand, very gravelly sandy loam, very cobbly sandy loam	GM, SM	A-1	0	15-30	40-70	35-60	20-45	10-20	---	NP
	22-60	Extremely gravelly coarse sand, extremely gravelly sand, extremely gravelly loamy sand	GP, GP-GM	A-1	0	25-45	25-45	15-35	5-25	0-10	---	NP
83:												
Jocko----------	0-7	Very stony sandy loam	SM, GM	A-1, A-2	0	15-30	60-85	50-75	30-55	15-30	15-25	NP-5
	7-18	Very cobbly loam, very cobbly sandy loam, very gravelly loam	GM	A-1, A-2	0	15-40	45-65	40-60	30-50	20-35	15-25	NP-5
	18-60	Extremely gravelly loamy sand, extremely gravelly sand, extremely gravelly coarse sand	GP, GP-GM	A-1	0	25-45	25-45	15-35	5-25	0-10	---	NP
84:												
Kerl----------	0-7	Loam	CL-ML, CL	A-4, A-6	0	0-10	90-100	85-100	70-95	50-75	25-35	5-15
	7-20	Silt loam, loam, gravelly loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0	0-10	75-100	65-100	60-95	45-85	25-35	5-15
	20-60	Silt loam, gravelly loam, loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0	0-10	75-90	65-85	60-75	45-70	25-35	5-15
85:												
Kerl----------	0-7	Loam	CL-ML, CL	A-4, A-6	0	0-10	90-100	85-100	70-95	50-75	25-35	5-15

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
85 (con.):												
Kerl----------	7-20	Silt loam, loam, gravelly loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0	0-10	75-100	65-100	60-95	45-85	25-35	5-15
	20-60	Silt loam, gravelly loam, loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0	0-10	75-90	65-85	60-75	45-70	25-35	5-15
86:												
Kerrdam---------	0-5	Silt loam	ML	A-4	0	0	100	100	95-100	70-90	25-35	NP-10
	5-12	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-90	25-40	NP-10
	12-34	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-90	25-40	NP-10
	34-60	Silt loam, very fine sandy loam, loamy very fine sand	ML	A-4	0	0	100	100	95-100	60-85	---	NP
87:												
Kerrdam---------	0-5	Silt loam	ML	A-4	0	0	100	100	95-100	70-90	25-35	NP-10
	5-12	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-90	25-40	NP-10
	12-34	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-90	25-40	NP-10
	34-60	Silt loam, very fine sandy loam, loamy very fine sand	ML	A-4	0	0	100	100	95-100	60-85	---	NP
88:												
Kerrdam---------	0-5	Silt loam	ML	A-4	0	0	100	100	95-100	70-90	25-35	NP-10
	5-12	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-90	25-40	NP-10
	12-34	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-90	25-40	NP-10
	34-60	Silt loam, very fine sandy loam, loamy very fine sand	ML	A-4	0	0	100	100	95-100	60-85	---	NP
Vincom----------	0-5	Silt loam	ML, CL-ML	A-4	0	0	100	100	90-100	75-90	20-30	NP-10
	5-22	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	22-60	Stratified silt loam to silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
89:												
Kerrdam---------	0-8	Silt loam	ML	A-4	0	0	100	100	95-100	70-90	25-35	NP-10
	8-12	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-90	25-40	NP-10
	12-34	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	95-100	75-90	25-40	NP-10
	34-60	Silt loam, very fine sandy loam, loamy very fine sand	ML	A-4	0	0	100	100	95-100	60-85	---	NP
Vincom----------	0-5	Silt loam	ML, CL-ML	A-4	0	0	100	100	90-100	75-90	20-30	NP-10
	5-22	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	22-60	Stratified silt loam to silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
90:												
Kingspoint------	0-17	Gravelly loam	CL-ML, GM-GC	A-4	0	0-10	60-80	55-75	50-70	40-60	25-30	5-10
	17-33	Very gravelly loam, very gravelly silt loam	GM-GC	A-2, A-4	0	0-25	40-55	35-50	30-50	20-40	25-30	5-10
	33-60	Very gravelly loam, very gravelly silt loam	GM-GC	A-2, A-4	0	10-25	40-60	35-55	30-50	20-40	25-30	5-10
91:												
Kingspoint------	0-11	Very gravelly loam	GM-GC	A-2, A-4	0	0-25	40-55	35-50	30-50	20-40	25-30	5-10
	11-22	Very gravelly loam, very gravelly silt loam	GM-GC	A-2, A-4	0	0-25	40-55	35-50	30-50	20-40	25-30	5-10
	22-60	Very gravelly loam, very gravelly silt loam	GM-GC	A-2, A-4	0	10-25	40-60	35-55	30-50	20-40	25-30	5-10
92:												
Kingspoint------	0-5	Very gravelly loam	GM-GC	A-2, A-4	0	0-25	40-55	35-50	30-50	20-40	25-30	5-10
	5-17	Very gravelly loam, very gravelly silt loam	GM-GC	A-2, A-4	0	0-25	40-55	35-50	30-50	20-40	25-30	5-10
	17-60	Very gravelly loam, very gravelly silt loam	GM-GC	A-2, A-4	0	10-25	40-60	35-55	30-50	20-40	25-30	5-10
93:												
Lamoose---------	0-7	Loam	SC-SM, SC, CL-ML, CL	A-4, A-6	0	0	80-100	75-100	65-95	45-75	25-35	5-15
	7-19	Loam, silt loam, gravelly loam	GM-GC, GC, CL-ML, CL	A-4, A-6, A-2	0	0	55-100	50-100	45-95	30-85	25-35	5-15
	19-60	Very gravelly loamy sand, very gravelly sand, extremely gravelly sand	GM, GP-GM, GP, SP-SM	A-1	0	0-20	25-55	20-50	10-40	0-15	---	NP
94:												
Lonepine--------	0-6	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	85-90	20-30	NP-10
	6-14	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-40	10-20
	14-60	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-40	10-20
95:												
Lonepine--------	0-6	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	85-90	20-30	NP-10
	6-14	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-40	10-20
	14-60	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-40	10-20
96:												
Lonepine--------	0-6	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	85-90	20-30	NP-10
	6-14	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-40	10-20
	14-60	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-40	10-20
97:												
Lonepine--------	0-6	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	85-90	20-30	NP-10
	6-14	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-40	10-20

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
97 (con.):												
Lonepine--------	14-60	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-40	10-20
Vincom----------	0-5	Silt loam	ML, CL-ML	A-4	0	0	100	100	90-100	75-90	20-30	NP-10
	5-22	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	22-60	Stratified silt loam to silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
98:												
Lonepine--------	0-6	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	85-90	20-30	NP-10
	6-14	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-40	10-20
	14-60	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-40	10-20
Vincom----------	0-5	Silt loam	ML, CL-ML	A-4	0	0	100	100	90-100	75-90	20-30	NP-10
	5-22	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	22-60	Stratified silt loam to silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
99:												
Marklepass------	0-9	Silty clay loam	CL	A-6	0	0	100	100	90-100	85-95	30-40	10-20
	9-14	Silty clay loam	CL	A-6	0	0	100	100	90-100	85-95	30-40	10-20
	14-20	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	100	90-100	85-95	35-50	15-30
	20-60	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	100	90-100	85-95	35-50	15-30
100:												
Marklepass------	0-9	Silty clay loam	CL	A-6	0	0	100	100	90-100	85-95	30-40	10-20
	9-14	Silty clay loam	CL	A-6	0	0	100	100	90-100	85-95	30-40	10-20
	14-20	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	100	90-100	85-95	35-50	15-30
	20-60	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	100	90-100	85-95	35-50	15-30
Slickspots.												
101:												
McCollum--------	0-7	Fine sandy loam	ML, SM	A-4	0	0	100	100	70-85	40-55	15-25	NP-5
	7-29	Fine sandy loam	ML, SM	A-4	0	0	100	100	70-85	40-55	15-25	NP-5
	29-60	Fine sandy loam, loamy fine sand	ML, SM	A-4	0	0	100	100	70-85	40-55	15-25	NP-5
102:												
McCollum--------	0-7	Fine sandy loam	ML, SM	A-4	0	0	100	100	70-85	40-55	15-25	NP-5
	7-29	Fine sandy loam	ML, SM	A-4	0	0	100	100	70-85	40-55	15-25	NP-5
	29-60	Fine sandy loam, loamy fine sand	ML, SM	A-4	0	0	100	100	70-85	40-55	15-25	NP-5
103:												
McCollum--------	0-7	Fine sandy loam	ML, SM	A-4	0	0	100	100	70-85	40-55	15-25	NP-5
	7-29	Fine sandy loam	ML, SM	A-4	0	0	100	100	70-85	40-55	15-25	NP-5
	29-60	Fine sandy loam, loamy fine sand	ML, SM	A-4	0	0	100	100	70-85	40-55	15-25	NP-5
104:												
McCollum--------	0-7	Fine sandy loam	SM, ML	A-4	0	0	100	100	70-85	40-55	15-25	NP-5
	7-29	Fine sandy loam	SM, ML	A-4	0	0	100	100	70-85	40-55	15-25	NP-5
	29-42	Fine sandy loam, loamy fine sand	SM, ML	A-4	0	0	95-100	85-100	60-85	35-55	15-25	NP-5

ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
104 (con.):												
McCollum--------	42-60	Very gravelly sandy loam, very gravelly loamy sand	GM	A-1	0	0-15	35-55	30-50	15-40	10-20	15-25	NP-5
105:												
McDonald--------	0-10	Cobbly silty clay loam	CL	A-6	0	15-30	75-95	70-90	65-90	60-85	30-40	10-15
	10-14	Cobbly loam, cobbly silt loam, silt loam	CL-ML, GM-GC, SC-SM	A-4	0	0-25	70-100	65-95	60-90	40-75	25-30	5-10
	14-42	Cobbly clay, silty clay, gravelly clay	CL, CH	A-7	0	0-25	70-100	65-100	60-100	50-95	40-60	20-35
	42-60	Silty clay loam, cobbly clay loam, gravelly clay loam	CL	A-6	0	0-25	70-100	65-95	60-100	50-90	30-40	10-15
106:												
McDonald--------	0-10	Cobbly silty clay loam	CL	A-6	0	15-30	75-95	70-90	65-90	60-85	30-40	10-15
	10-18	Cobbly loam, cobbly silt loam, silt loam	CL-ML, GM-GC, SC-SM	A-4	0	0-25	70-100	65-95	60-90	40-75	25-30	5-10
	18-40	Cobbly clay, silty clay, gravelly clay	CL, CH	A-7	0	0-25	70-100	65-100	60-100	50-95	40-60	20-35
	40-60	Silty clay loam, cobbly clay loam, gravelly clay loam	CL	A-6	0	0-25	70-100	65-95	60-100	50-90	30-40	10-15
107:												
McDonald--------	0-13	Cobbly silty clay loam	CL	A-6	0	15-30	75-95	70-90	65-90	60-85	30-40	10-15
	13-17	Cobbly loam, cobbly silt loam, silt loam	CL-ML, GM-GC, SC-SM	A-4	0	0-25	70-100	65-95	60-90	40-75	25-30	5-10
	17-33	Cobbly clay, silty clay, gravelly clay	CL, CH	A-7	0	0-25	70-100	65-100	60-100	50-95	40-60	20-35
	33-60	Silty clay loam, cobbly clay loam, gravelly clay loam	CL	A-6	0	0-25	70-100	65-95	60-100	50-90	30-40	10-15
108:												
McDonald--------	0-10	Silty clay loam	CL	A-6	0	0-10	90-100	85-95	85-95	80-85	30-40	10-15
	10-14	Loam, silt loam, gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0-10	60-90	55-85	50-80	35-70	25-30	5-10
	14-42	Clay, silty clay, gravelly clay	CL, CH, GC	A-7	0	0-10	60-100	55-100	50-100	45-95	40-60	20-35
	42-60	Silty clay loam, clay loam, gravelly clay loam	CL, GC	A-6	0	0-15	65-100	60-95	55-90	45-80	30-40	10-15
109:												
Minesinger------	0-6	Stony loam	GM-GC	A-4	0	10-15	60-70	55-65	45-60	35-50	25-30	5-10
	6-14	Very cobbly loam, very stony loam, gravelly loam	GM-GC, CL-ML	A-4	0	15-40	60-75	55-75	45-70	35-60	25-30	5-10
	14-24	Very cobbly clay loam, very gravelly clay loam, very gravelly loam	GM-GC, GC	A-4, A-6, A-2	0	15-30	55-65	50-60	45-55	30-50	25-35	5-15

ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
109 (con.):												
Minesinger------	24-39	Very gravelly clay, very gravelly clay loam, very cobbly clay	GC	A-6, A-7, A-2	0	15-40	50-65	45-60	40-55	25-50	35-50	15-30
	39-60	Very gravelly clay loam, very cobbly clay loam, very gravelly clay	GC	A-6, A-7, A-2	0	15-40	50-65	45-60	40-55	25-50	30-45	10-20
110:												
Minesinger------	0-6	Very stony loam	GM-GC, CL-ML	A-4	0	10-45	60-85	55-80	45-75	35-60	25-30	5-10
	6-14	Very cobbly loam, very stony loam, gravelly loam	GM-GC, CL-ML	A-4	0	15-40	60-75	55-75	45-70	35-60	25-30	5-10
	14-24	Very cobbly clay loam, very gravelly clay loam, very gravelly loam	GM-GC, GC	A-4, A-6, A-2	0	15-30	55-65	50-60	45-55	30-50	25-35	5-15
	24-39	Very gravelly clay, very gravelly clay loam, very cobbly clay	GC	A-6, A-7, A-2	0	15-40	50-65	45-60	40-55	25-50	35-50	15-30
	39-60	Very gravelly clay loam, very cobbly clay loam, very gravelly clay	GC	A-6, A-7, A-2	0	15-40	50-65	45-60	40-55	25-50	30-45	10-20
Walstead--------	0-8	Very stony loam	CL-ML, SC-SM	A-4	0	15-40	75-85	70-80	60-75	40-60	25-30	5-10
	8-17	Stony loam, very gravelly loam	CL-ML, SC-SM, GM-GC	A-4	0	10-30	65-90	60-85	50-80	35-65	25-30	5-10
	17-26	Very stony loam, very cobbly sandy loam, very gravelly loam	GM-GC	A-4, A-2	0	10-40	45-60	40-55	35-50	25-40	25-30	5-10
	26-60	Very stony loam, very cobbly sandy loam, very gravelly loam	GM-GC, GM	A-4, A-2, A-1	0	10-40	45-60	40-55	25-50	15-40	20-30	NP-10
111:												
Mitten----------	0-12	Gravelly silt loam	GM, ML	A-4	0	0-10	60-80	55-75	50-70	40-65	30-40	NP-10
	12-36	Extremely gravelly fine sandy loam, extremely gravelly sandy loam, extremely gravelly loam	GM, GP-GM	A-1	0-5	15-30	25-40	15-30	10-25	5-15	---	NP
	36-60	Extremely gravelly sandy loam, extremely gravelly coarse sandy loam, extremely gravelly loam	GP-GM	A-1	0-5	15-30	20-40	10-30	5-20	5-10	---	NP
112:												
Mitten----------	0-12	Very gravelly silt loam	GM	A-4, A-2	0	0-10	45-55	40-50	35-50	30-45	30-40	NP-10

ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
112 (con.):												
Mitten----------	12-36	Extremely gravelly fine sandy loam, extremely gravelly sandy loam, extremely gravelly loam	GM, GP-GM	A-1	0-5	15-30	25-40	15-30	10-25	5-15	---	NP
	36-60	Extremely gravelly sandy loam, extremely gravelly coarse sandy loam, extremely gravelly loam	GP-GM	A-1	0-5	15-30	20-40	10-30	5-20	5-10	---	NP
113:												
Mitten----------	0-10	Very gravelly silt loam	GM	A-4, A-2	0	0-10	45-55	40-50	35-50	30-45	30-40	NP-10
	10-36	Extremely gravelly fine sandy loam, extremely gravelly sandy loam, extremely gravelly loam	GM, GP-GM	A-1	0-5	15-30	25-40	15-30	10-25	5-15	---	NP
	36-60	Extremely gravelly sandy loam, extremely gravelly coarse sandy loam, extremely gravelly loam	GP-GM	A-1	0-5	15-30	20-40	10-30	5-20	5-10	---	NP
114:												
Mitten----------	0-10	Very gravelly silt loam	GM	A-4, A-2	0	0-10	45-55	40-50	35-50	30-45	30-40	NP-10
	10-36	Extremely gravelly fine sandy loam, extremely gravelly sandy loam, extremely gravelly loam	GM, GP-GM	A-1	0-5	15-30	25-40	15-30	10-25	5-15	---	NP
	36-60	Extremely gravelly sandy loam, extremely gravelly coarse sandy loam, extremely gravelly loam	GP-GM	A-1	0-5	15-30	20-40	10-30	5-20	5-10	---	NP
Rock outcrop.												
115:												
Moiese----------	0-8	Loam	CL-ML, SC-SM, ML, SM	A-4	0	0	80-100	75-100	60-90	45-75	20-30	NP-10
	8-13	Gravelly loam, very gravelly sandy loam, sandy loam	SM, SC-SM, GM, GM-GC	A-2, A-4, A-1	0	0-25	40-100	35-95	25-80	15-50	20-30	NP-10
	13-18	Very gravelly sandy loam	GM, SM	A-1	0	0-25	40-60	35-50	20-35	10-20	20-25	NP-5
	18-60	Very gravelly loamy sand, extremely gravelly sand, very gravelly loamy coarse sand	GP, GP-GM	A-1	0	0-30	30-45	20-35	10-25	0-10	---	NP

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
116:												
Mollman---------	0-14	Gravelly loam	GM, GM-GC, SM, SC-SM	A-4	0	0-15	65-80	60-75	50-65	40-50	20-30	NP-10
	14-31	Very gravelly loam, very gravelly silt loam, very cobbly loam	GM, GM-GC	A-2, A-4	0	15-30	45-70	35-60	30-45	25-40	20-30	NP-10
	31-38	Very gravelly loam, very gravelly silt loam, very cobbly loam	GM, GM-GC	A-2, A-4	0	15-30	45-70	35-60	30-45	25-40	20-30	NP-10
	38-60	Very gravelly loam, very gravelly silt loam, very cobbly loam	GM, GM-GC	A-2, A-4	0	15-30	45-70	35-60	30-45	25-40	20-30	NP-10
117:												
Mollman---------	0-14	Gravelly loam	GM, GM-GC, SM, SC-SM	A-4	0	0-15	65-80	60-75	50-65	40-50	20-30	NP-10
	14-31	Very gravelly loam, very gravelly silt loam, very cobbly loam	GM, GM-GC	A-2, A-4	0	15-30	45-70	35-60	30-45	25-40	20-30	NP-10
	31-38	Very gravelly loam, very gravelly silt loam, very cobbly loam	GM, GM-GC	A-2, A-4	0	15-30	45-70	35-60	30-45	25-40	20-30	NP-10
	38-60	Very gravelly loam, very gravelly silt loam, very cobbly loam	GM, GM-GC	A-2, A-4	0	15-30	45-70	35-60	30-45	25-40	20-30	NP-10
118:												
Mollman---------	0-14	Gravelly loam	GM, GM-GC, SM, SC-SM	A-4	0	0-15	65-80	60-75	50-65	40-50	20-30	NP-10
	14-31	Very gravelly loam, very gravelly silt loam, very cobbly loam	GM, GM-GC	A-2, A-4	0	15-30	45-70	35-60	30-45	25-40	20-30	NP-10
	31-38	Very gravelly loam, very gravelly silt loam, very cobbly loam	GM, GM-GC	A-2, A-4	0	15-30	45-70	35-60	30-45	25-40	20-30	NP-10
	38-60	Very gravelly loam, very gravelly silt loam, very cobbly loam	GM, GM-GC	A-2, A-4	0	15-30	45-70	35-60	30-45	25-40	20-30	NP-10
119:												
Mollman---------	0-18	Very gravelly loam	GM, GM-GC	A-1, A-2	0	10-25	40-60	35-55	30-45	20-35	20-30	NP-10
	18-30	Very gravelly loam, very gravelly silt loam, very cobbly loam	GM, GM-GC	A-2, A-4	0	15-30	45-70	35-60	30-45	25-40	20-30	NP-10
	30-60	Very gravelly loam, very gravelly silt loam, very cobbly loam	GM, GM-GC	A-2, A-4	0	15-30	45-70	35-60	30-45	25-40	20-30	NP-10

ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
120:												
Niarada---------	0-9	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0-15	65-80	60-75	50-70	35-60	20-30	5-10
	9-14	Very gravelly loam, very cobbly loam, extremely gravelly sandy loam	GM-GC	A-2	0	10-30	35-60	25-50	20-40	10-30	20-25	NP-5
	14-60	Very gravelly loam, very gravelly sandy loam	GM	A-2, A-1	0	0-15	35-60	30-50	25-40	15-30	20-25	NP-5
121:												
Niarada---------	0-7	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0-15	65-80	60-75	50-70	35-60	20-30	5-10
	7-14	Very gravelly loam, very cobbly loam, extremely gravelly sandy loam	GM-GC	A-2	0	10-30	35-60	25-50	20-40	10-30	20-25	NP-5
	14-60	Very gravelly loam, very gravelly sandy loam	GM	A-2, A-1	0	0-15	35-60	30-50	25-40	15-30	20-25	NP-5
122:												
Niarada---------	0-7	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0-15	65-80	60-75	50-70	35-60	20-30	5-10
	7-14	Very gravelly loam, very cobbly loam, extremely gravelly sandy loam	GM-GC	A-2	0	10-30	35-60	25-50	20-40	10-30	20-25	NP-5
	14-60	Very gravelly loam, very gravelly sandy loam	GM	A-2, A-1	0	0-15	35-60	30-50	25-40	15-30	20-25	NP-5
123:												
Niarada---------	0-7	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0-15	65-80	60-75	50-70	35-60	20-30	5-10
	7-14	Gravelly loam, very gravelly loam, very cobbly loam	GM-GC, CL-ML	A-2, A-4	0	10-30	45-80	40-75	35-70	25-60	20-30	5-10
	14-18	Very gravelly loam, very cobbly loam, extremely gravelly sandy loam	GM-GC	A-2	0	10-30	35-60	25-50	20-40	10-30	20-25	NP-5
	18-60	Very gravelly loam, very gravelly sandy loam	GM	A-2, A-1	0	0-15	35-60	30-50	25-40	15-30	20-25	NP-5
124:												
Niarada---------	0-7	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0-15	65-80	60-75	50-70	35-60	20-30	5-10
	7-14	Gravelly loam, very gravelly loam, very cobbly loam	GM-GC, CL-ML	A-2, A-4	0	10-30	45-80	40-75	35-70	25-60	20-30	5-10
	14-18	Very gravelly loam, very cobbly loam, extremely gravelly sandy loam	GM-GC	A-2	0	10-30	35-60	25-50	20-40	10-30	20-25	NP-5

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
124 (con.):												
Niarada---------	18-60	Very gravelly loam, very gravelly sandy loam	GM	A-2, A-1	0	0-15	35-60	30-50	25-40	15-30	20-25	NP-5
125:												
Niarada---------	0-10	Gravelly loam	GM-GC, SC-SM, CL-ML	A-4	0	0-15	65-80	60-75	50-70	35-60	20-30	5-10
	10-22	Very gravelly loam, very cobbly loam, extremely gravelly sandy loam	GM-GC	A-2	0	10-30	35-60	25-50	20-40	10-30	20-25	NP-5
	22-60	Very gravelly loam, very gravelly sandy loam	GM	A-2, A-1	0	0-15	35-60	30-50	25-40	15-30	20-25	NP-5
Kerl----------	0-7	Silt loam	CL-ML, CL	A-4, A-6	0	0-10	90-100	85-100	75-100	60-90	25-35	5-15
	7-20	Silt loam, loam, gravelly loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0	0-10	75-100	65-100	60-95	45-85	25-35	5-15
	20-60	Silt loam, gravelly loam, loam	CL-ML, CL, SC-SM, SC	A-4, A-6	0	0-10	75-90	65-85	60-75	45-70	25-35	5-15
126:												
Ninepipe--------	0-10	Silt loam	CL-ML	A-4	0	0	100	100	95-100	80-100	20-30	5-10
	10-28	Silt loam	CL-ML	A-4	0	0	100	100	95-100	80-100	20-30	5-10
	28-41	Silty clay loam	CL	A-6	0	0	100	100	95-100	85-100	25-35	10-15
	41-60	Silt loam, silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-100	25-35	5-15
127:												
Phillcher-------	0-11	Gravelly silt loam	ML, GM	A-4	0	0	55-80	50-75	45-75	35-70	30-40	NP-5
	11-37	Very gravelly sandy loam	GM, SM	A-1	0	0-15	40-60	30-50	20-35	10-20	---	NP
	37-60	Extremely gravelly sandy loam, extremely gravelly loamy sand	GP-GM	A-1	0	10-30	25-40	15-30	10-20	5-10	---	NP
128:												
Phillcher-------	0-11	Gravelly silt loam	ML, GM	A-4	0	0	55-80	50-75	45-75	35-70	30-40	NP-5
	11-37	Very gravelly sandy loam	GM, SM	A-1	0	0-15	40-60	30-50	20-35	10-20	---	NP
	37-60	Extremely gravelly sandy loam, extremely gravelly loamy sand	GP-GM	A-1	0	10-30	25-40	15-30	10-20	5-10	---	NP
Rock outcrop.												
129:												
Pits.												
130:												
Polson----------	0-10	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	25-30	5-10
	10-18	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-100	30-40	10-15
	18-60	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
131:												
Polson----------	0-10	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	25-30	5-10
	10-18	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-100	30-40	10-15
	18-60	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15

ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
132:												
Polson----------	0-10	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	25-30	5-10
	10-18	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-100	30-40	10-15
	18-60	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
Vincom----------	0-5	Silt loam	ML, CL-ML	A-4	0	0	100	100	90-100	75-90	20-30	NP-10
	5-22	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	22-60	Stratified silt loam to silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
133:												
Post----------	0-6	Silt loam	CL-ML, ML	A-4	0	0-10	90-100	85-100	80-100	70-95	25-35	5-10
	6-9	Silty clay loam	ML, CL	A-6, A-4	0	0-10	90-100	85-100	80-100	75-95	30-40	5-15
	9-21	Clay	ML, MH	A-7	0	0-10	90-100	85-100	80-100	75-95	40-55	10-20
	21-27	Clay	ML, MH	A-7	0	0-10	90-100	85-100	80-100	70-95	40-55	10-20
	27-60	Clay	ML, MH	A-7	0	0-10	90-100	85-100	80-100	70-95	40-55	10-20
134:												
Post----------	0-7	Silty clay loam	ML, CL	A-4, A-6	0	0-10	90-100	85-100	80-100	75-95	30-40	5-15
	7-9	Silty clay loam	ML, CL	A-6, A-4	0	0-10	90-100	85-100	80-100	75-95	30-40	5-15
	9-20	Clay	ML, MH	A-7	0	0-10	90-100	85-100	80-100	75-95	40-55	10-20
	20-60	Clay	ML, MH	A-7	0	0-10	90-100	85-100	80-100	70-95	40-55	10-20
135:												
Post----------	0-8	Silty clay loam	ML, CL	A-4, A-6	0	0-10	90-100	85-100	80-100	75-95	30-40	5-15
	8-10	Silty clay loam	ML, CL	A-6, A-4	0	0-10	90-100	85-100	80-100	75-95	30-40	5-15
	10-21	Clay	ML, MH	A-7	0	0-10	90-100	85-100	80-100	75-95	40-55	10-20
	21-60	Clay	ML, MH	A-7	0	0-10	90-100	85-100	80-100	70-95	40-55	10-20
136:												
Post----------	0-8	Silt loam	CL-ML, ML	A-4	0	0-10	90-100	85-100	80-100	70-95	25-35	5-10
	8-13	Silty clay loam	ML, CL	A-6, A-4	0	0-10	90-100	85-100	80-100	75-95	30-40	5-15
	13-22	Clay	ML, MH	A-7	0	0-10	90-100	85-100	80-100	75-95	40-55	10-20
	22-60	Clay	ML, MH	A-7	0	0-10	90-100	85-100	80-100	70-95	40-55	10-20
Ronan----------	0-4	Silty clay loam	ML, CL	A-4, A-6	0	0-10	90-100	85-100	80-100	70-95	30-40	5-15
	4-7	Clay	CL	A-7	0	0-10	90-100	85-100	80-100	70-95	40-50	15-25
	7-16	Clay	CL	A-7	0	0-10	90-100	85-100	80-100	70-95	40-50	15-25
	16-60	Clay, silty clay	ML, CL	A-6, A-7	0	0-10	90-100	85-100	80-100	70-95	35-50	10-25
Water.												
137:												
Post----------	0-8	Silt loam	CL-ML, ML	A-4	0	0-10	90-100	85-100	80-100	70-95	25-35	5-10
	8-13	Silty clay loam	ML, CL	A-6, A-4	0	0-10	90-100	85-100	80-100	75-95	30-40	5-15
	13-22	Clay	ML, MH	A-7	0	0-10	90-100	85-100	80-100	75-95	40-55	10-20
	22-60	Clay	ML, MH	A-7	0	0-10	90-100	85-100	80-100	70-95	40-55	10-20
Ronan----------	0-4	Silty clay loam	ML, CL	A-4, A-6	0	0-10	90-100	85-100	80-100	70-95	30-40	5-15
	4-7	Clay	CL	A-7	0	0-10	90-100	85-100	80-100	70-95	40-50	15-25
	7-16	Clay	CL	A-7	0	0-10	90-100	85-100	80-100	70-95	40-50	15-25
	16-60	Clay, silty clay	ML, CL	A-6, A-7	0	0-10	90-100	85-100	80-100	70-95	35-50	10-25
Water.												
138:												
Repp----------	0-4	Gravelly loam	GM-GC, ML, SM, CL-ML	A-4	0	0-10	60-80	55-70	45-65	35-55	15-25	NP-10

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
138 (con.):												
Repp----------	4-14	Very gravelly loam	GM-GC, GM	A-2, A-4, A-1	0	0-15	35-60	30-50	25-45	20-40	15-25	NP-10
	14-60	Extremely gravelly loam	GM, GP-GM	A-1	0	0-15	15-40	5-25	5-20	5-15	---	NP
139:												
Repp----------	0-12	Gravelly loam	GM-GC, ML, SM, CL-ML	A-4	0	0-10	60-80	55-70	45-65	35-55	15-25	NP-10
	12-25	Very gravelly loam	GM-GC, GM	A-2, A-4, A-1	0	0-15	35-60	30-50	25-45	20-40	15-25	NP-10
	25-60	Extremely gravelly loam	GM, GP-GM	A-1	0	0-15	15-40	5-25	5-20	5-15	---	NP
Rock outcrop.												
140:												
Rock outcrop.												
Rubble land.												
141:												
Ronan----------	0-4	Silty clay loam	ML, CL	A-4, A-6	0	0-10	90-100	85-100	80-100	70-95	30-40	5-15
	4-7	Clay	CL	A-7	0	0-10	90-100	85-100	80-100	70-95	40-50	15-25
	7-16	Clay	CL	A-7	0	0-10	90-100	85-100	80-100	70-95	40-50	15-25
	16-60	Clay, silty clay	ML, CL	A-6, A-7	0	0-10	90-100	85-100	80-100	70-95	35-50	10-25
142:												
Ronan----------	0-4	Silty clay loam	ML, CL	A-4, A-6	0	0-10	90-100	85-100	80-100	70-95	30-40	5-15
	4-7	Clay	CL	A-7	0	0-10	90-100	85-100	80-100	70-95	40-50	15-25
	7-16	Clay	CL	A-7	0	0-10	90-100	85-100	80-100	70-95	40-50	15-25
	16-60	Clay, silty clay	ML, CL	A-6, A-7	0	0-10	90-100	85-100	80-100	70-95	35-50	10-25
143:												
Ronan----------	0-4	Silty clay loam	ML, CL	A-4, A-6	0	0-10	90-100	85-100	80-100	70-95	30-40	5-15
	4-7	Clay	CL	A-7	0	0-10	90-100	85-100	80-100	70-95	40-50	15-25
	7-16	Clay	CL	A-7	0	0-10	90-100	85-100	80-100	70-95	40-50	15-25
	16-60	Clay, silty clay	ML, CL	A-6, A-7	0	0-10	90-100	85-100	80-100	70-95	35-50	10-25
144:												
Round Butte-----	0-7	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	7-14	Clay, silty clay, silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-50	15-30
	14-44	Silty clay, clay, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	35-50	15-30
	44-60	Stratified silt loam to clay	ML, CL	A-6, A-7	0	0	100	100	90-100	80-100	35-45	10-20
145:												
Round Butte-----	0-7	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	7-14	Clay, silty clay, silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-50	15-30
	14-44	Silty clay, clay, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	35-50	15-30
	44-60	Stratified silt loam to clay	ML, CL	A-6, A-7	0	0	100	100	90-100	80-100	35-45	10-20
146:												
Round Butte-----	0-7	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15

ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
146 (con.):												
Round Butte-----	7-14	Clay, silty clay, silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-50	15-30
	14-44	Silty clay, clay, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	35-50	15-30
	44-60	Stratified silt loam to clay	ML, CL	A-6, A-7	0	0	100	100	90-100	80-100	35-45	10-20
147:												
Round Butte-----	0-7	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	7-14	Clay, silty clay, silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-50	15-30
	14-44	Silty clay, clay, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	35-50	15-30
	44-60	Stratified silt loam to clay	ML, CL	A-6, A-7	0	0	100	100	90-100	80-100	35-45	10-20
148:												
Round Butte-----	0-7	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	7-14	Clay, silty clay, silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-50	15-30
	14-44	Silty clay, clay, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	35-50	15-30
	44-60	Stratified silt loam to clay	ML, CL	A-6, A-7	0	0	100	100	90-100	80-100	35-45	10-20
Irvine----------	0-5	Silty clay loam	CL	A-6	0	0-15	90-100	90-100	90-100	80-100	35-40	15-20
	5-10	Silty clay, silty clay loam	CL	A-7, A-6	0	0-15	90-100	90-100	90-100	80-100	35-50	15-30
	10-60	Silty clay, silty clay loam	CL	A-7, A-6	0	0-15	90-100	90-100	90-100	80-100	35-50	15-30
149:												
Round Butte-----	0-7	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-100	20-35	5-15
	7-14	Clay, silty clay, silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	90-100	35-50	15-30
	14-44	Silty clay, clay, silty clay loam	CL	A-6, A-7	0	0	100	100	90-100	85-100	35-50	15-30
	44-60	Stratified silt loam to clay	ML, CL	A-6, A-7	0	0	100	100	90-100	80-100	35-45	10-20
Irvine----------	0-5	Silty clay loam	CL	A-6	0	0-15	90-100	90-100	90-100	80-100	35-40	15-20
	5-10	Silty clay, silty clay loam	CL	A-7, A-6	0	0-15	90-100	90-100	90-100	80-100	35-50	15-30
	10-60	Silty clay, silty clay loam	CL	A-7, A-6	0	0-15	90-100	90-100	90-100	80-100	35-50	15-30
150:												
Rumblecreek-----	0-8	Gravelly loam	SM, CL-ML, GM, SC-SM	A-2, A-4	0	0	60-85	50-75	45-70	30-60	20-30	NP-10
	8-20	Gravelly loam	GM-GC, GM, CL-ML, SC-SM	A-2, A-4	0	0	60-85	50-75	45-70	30-60	20-30	NP-10
	20-32	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC, GM-GC	A-2	0	0-15	35-60	30-50	25-45	20-35	25-40	5-15

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
150 (con.)												
Rumblecreek-----	32-60	Very gravelly clay loam, very gravelly sandy clay loam	GC, GM-GC	A-2, A-4, A-6	0	0-15	35-60	30-50	25-45	20-40	25-40	5-15
151:												
Rumblecreek-----	0-5	Gravelly loam	SM, CL-ML, GM, SC-SM	A-2, A-4	0	0	60-85	50-75	45-70	30-60	20-30	NP-10
	5-18	Gravelly loam	GM-GC, GM, CL-ML, SC-SM	A-2, A-4	0	0	60-85	50-75	45-70	30-60	20-30	NP-10
	18-22	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC, GM-GC	A-2	0	0-15	35-60	30-50	25-45	20-35	25-40	5-15
	22-60	Very gravelly clay loam, very gravelly sandy clay loam	GC, GM-GC	A-2, A-4, A-6	0	0-15	35-60	30-50	25-45	20-40	25-40	5-15
152:												
Rumblecreek-----	0-5	Gravelly loam	SM, CL-ML, GM, SC-SM	A-2, A-4	0	0	60-85	50-75	45-70	30-60	20-30	NP-10
	5-18	Gravelly loam	GM-GC, GM, CL-ML, SC-SM	A-2, A-4	0	0	60-85	50-75	45-70	30-60	20-30	NP-10
	18-22	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC, GM-GC	A-2	0	0-15	35-60	30-50	25-45	20-35	25-40	5-15
	22-60	Very gravelly clay loam, very gravelly sandy clay loam	GC, GM-GC	A-2, A-4, A-6	0	0-15	35-60	30-50	25-45	20-40	25-40	5-15
153:												
Rumblecreek-----	0-5	Gravelly loam	SM, CL-ML, GM, SC-SM	A-2, A-4	0	0	60-85	50-75	45-70	30-60	20-30	NP-10
	5-18	Gravelly loam	GM-GC, GM, CL-ML, SC-SM	A-2, A-4	0	0	60-85	50-75	45-70	30-60	20-30	NP-10
	18-22	Very gravelly clay loam, very gravelly loam, very gravelly sandy clay loam	GC, GM-GC	A-2	0	0-15	35-60	30-50	25-45	20-35	25-40	5-15
	22-60	Very gravelly clay loam, very gravelly sandy clay loam	GC, GM-GC	A-2, A-4, A-6	0	0-15	35-60	30-50	25-45	20-40	25-40	5-15
154:												
Sacheen---------	0-4	Fine sand	SM	A-2	0	0	95-100	90-100	65-80	20-35	---	NP
	4-60	Loamy fine sand, fine sand	SM	A-2, A-4	0	0	95-100	90-100	70-95	20-40	---	NP
155:												
Sacheen---------	0-3	Loamy fine sand	SM	A-2, A-4	0	0	95-100	90-100	70-95	25-40	---	NP
	3-60	Loamy fine sand, fine sand	SM	A-2, A-4	0	0	95-100	90-100	70-95	20-40	---	NP
156:												
Selon----------	0-7	Fine sandy loam	ML	A-4	0	0	85-100	75-100	70-100	50-65	15-25	NP-5
	7-60	Fine sandy loam	ML	A-4	0	0	85-100	75-100	70-100	50-65	15-25	NP-5

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
157:												
Selon----------	0-7	Fine sandy loam	ML	A-4	0	0	85-100	75-100	70-100	50-65	15-25	NP-5
	7-60	Fine sandy loam	ML	A-4	0	0	85-100	75-100	70-100	50-65	15-25	NP-5
158:												
Selon----------	0-4	Fine sandy loam	ML	A-4	0	0	85-100	75-100	70-100	50-65	15-25	NP-5
	4-60	Fine sandy loam	ML	A-4	0	0	85-100	75-100	70-100	50-65	15-25	NP-5
159:												
Selon----------	0-8	Sandy loam	ML, SM	A-4	0	0	85-100	75-100	65-90	40-55	15-25	NP-5
	8-60	Fine sandy loam	ML	A-4	0	0	85-100	75-100	70-100	50-65	15-25	NP-5
160:												
Selow----------	0-9	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	9-15	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	15-20	Silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	85-95	30-40	10-20
	20-28	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	90-100	75-90	15-20	NP
	28-60	Silt loam, very fine sandy loam, loamy fine sand	ML	A-4	0	0	100	100	90-100	60-85	15-20	NP
161:												
Selow----------	0-9	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	9-15	Silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	15-20	Silty clay loam	CL	A-4, A-6	0	0	100	100	95-100	85-95	30-40	10-20
	20-28	Silt loam, very fine sandy loam	ML	A-4	0	0	100	100	90-100	75-90	15-20	NP
	28-60	Silt loam, very fine sandy loam, loamy fine sand	ML	A-4	0	0	100	100	90-100	60-85	15-20	NP
162:												
Tevis----------	0-7	Very gravelly loam	GM, GM-GC	A-2, A-1, A-4	0	0	30-60	25-50	20-45	15-40	15-25	NP-10
	7-14	Very gravelly sandy loam, very gravelly fine sandy loam, very gravelly loam	GM	A-1, A-2	0	0-15	40-60	30-50	20-40	10-30	---	NP
	14-33	Extremely gravelly sandy loam, extremely gravelly fine sandy loam, extremely gravelly loam	GM, GP-GM, GP	A-1	0	0-15	20-35	10-25	5-20	0-15	---	NP
	33-60	Extremely gravelly sandy loam, extremely gravelly fine sandy loam, extremely gravelly loam	GM, GP-GM, GP	A-1	0	0-15	20-35	10-25	5-20	0-15	---	NP
163:												
Trapps----------	0-12	Gravelly loam	GM, ML, SM	A-2, A-4	0	0	55-80	50-75	45-70	30-60	15-25	NP-5
	12-27	Very gravelly clay loam	GC	A-2, A-6	0	0-15	30-55	25-50	20-50	15-45	30-35	10-15
	27-60	Very gravelly loam	GM	A-2, A-1, A-4	0	0-15	35-60	25-50	20-45	15-40	15-25	NP-5

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
164:												
Trapps----------	0-13	Gravelly loam	GM, ML, SM	A-2, A-4	0	0	55-80	50-75	45-70	30-60	15-25	NP-5
	13-27	Very gravelly clay loam	GC	A-2, A-6	0	0-15	30-55	25-50	20-50	15-45	30-35	10-15
	27-60	Very gravelly loam	GM	A-2, A-1, A-4	0	0-15	35-60	25-50	20-45	15-40	15-25	NP-5
165:												
Truscreek-------	0-9	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	9-12	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	12-25	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	25-32	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	32-60	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
166:												
Truscreek-------	0-9	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	9-12	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	12-25	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	25-32	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	32-60	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
Polson----------	0-7	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	25-30	5-10
	7-15	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-100	30-40	10-15
	15-60	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
167:												
Truscreek-------	0-8	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	8-12	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	12-24	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	24-32	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	32-60	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
Polson----------	0-7	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	25-30	5-10
	7-15	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-100	30-40	10-15
	15-60	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
168:												
Truscreek-------	0-8	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	8-12	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	12-24	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	24-32	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
	32-60	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	20-30	5-10
Polson----------	0-7	Silt loam	CL-ML	A-4	0	0	100	100	95-100	85-95	25-30	5-10
	7-15	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-100	30-40	10-15
	15-60	Silt loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
169: Typic Haplaquepts.												
170:												
Vincom----------	0-5	Silt loam	ML, CL-ML	A-4	0	0	100	100	90-100	75-90	20-30	NP-10
	5-22	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	22-60	Stratified silt loam to silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
171:												
Vincom----------	0-5	Silt loam	ML, CL-ML	A-4	0	0	100	100	90-100	75-90	20-30	NP-10
	5-22	Silty clay loam, silt loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	85-95	25-35	5-15
	22-60	Stratified silt loam to silty clay loam	CL-ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	25-35	5-15
Lonepine--------	0-6	Silt loam	CL-ML, ML	A-4	0	0	100	100	95-100	85-90	20-30	NP-10

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
171 (con.):												
Lonepine--------	6-14	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-40	10-20
	14-60	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	25-40	10-20
172:												
Waldbillig------	0-9	Gravelly silt loam	ML, GM	A-4	0	0-15	65-80	60-75	50-65	40-55	25-35	NP-10
	9-25	Very gravelly fine sandy loam, very gravelly sandy loam	GM, GM-GC, SM, SC-SM	A-2, A-1	0-5	10-15	40-65	30-55	20-40	10-25	20-30	NP-10
	25-60	Very gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam	GM, GM-GC, SM, SC-SM	A-2, A-1	0-5	10-30	45-65	35-55	25-40	15-30	20-30	NP-10
173:												
Waldbillig------	0-9	Gravelly silt loam	ML, GM	A-4	0	0-15	65-80	60-75	50-65	40-55	25-35	NP-10
	9-25	Very gravelly fine sandy loam, very gravelly sandy loam	GM, GM-GC, SM, SC-SM	A-2, A-1	0-5	10-15	40-65	30-55	20-40	10-25	20-30	NP-10
	25-60	Very gravelly fine sandy loam, very gravelly sandy loam, very gravelly loam	GM, GM-GC, SM, SC-SM	A-2, A-1	0-5	10-30	45-65	35-55	25-40	15-30	20-30	NP-10
174:												
Walstead--------	0-13	Gravelly loam	ML, CL-ML, SM, GM	A-4	0	0-15	65-80	60-75	45-60	40-55	20-30	NP-10
	13-32	Very gravelly loam, very gravelly sandy loam	GM, GM-GC	A-2, A-1	0	10-20	40-60	30-60	25-50	15-35	20-30	NP-10
	32-60	Very gravelly sandy loam, very gravelly loam	GM, GM-GC	A-1, A-2	0	10-20	40-60	30-60	25-50	10-35	20-30	NP-10
175:												
Walstead--------	0-8	Gravelly loam	ML, CL-ML, SM, GM	A-4	0	0-15	65-80	60-75	45-60	40-55	20-30	NP-10
	8-15	Gravelly loam, very gravelly loam	GM, GM-GC	A-2, A-4	0	10-25	55-75	50-70	45-65	30-50	20-30	NP-10
	15-36	Very gravelly loam, very gravelly sandy loam	GM, GM-GC	A-2, A-1	0	10-20	40-60	30-60	25-50	15-35	20-30	NP-10
	36-60	Very gravelly sandy loam, very gravelly loam	GM, GM-GC	A-1, A-2	0	10-20	40-60	30-60	25-50	10-35	20-30	NP-10
176:												
Walstead--------	0-8	Gravelly loam	ML, CL-ML, SM, GM	A-4	0	0-15	65-80	60-75	45-60	40-55	20-30	NP-10
	8-15	Gravelly loam, very gravelly loam	GM, GM-GC	A-2, A-4	0	10-25	55-75	50-70	45-65	30-50	20-30	NP-10
	15-36	Very gravelly loam, very gravelly sandy loam	GM, GM-GC	A-2, A-1	0	10-20	40-60	30-60	25-50	15-35	20-30	NP-10
	36-60	Very gravelly sandy loam, very gravelly loam	GM, GM-GC	A-1, A-2	0	10-20	40-60	30-60	25-50	10-35	20-30	NP-10

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
177:												
Walstead--------	0-6	Stony loam	CL-ML, SC-SM	A-4	0	10-30	75-90	70-85	60-80	40-65	25-30	5-10
	6-15	Stony loam, very gravelly loam	CL-ML, SC-SM, GM-GC	A-4	0	10-30	65-90	60-85	50-80	35-65	25-30	5-10
	15-24	Very stony loam, very cobbly sandy loam, very gravelly loam	GM-GC	A-4, A-2	0	10-40	45-60	40-55	35-50	25-40	25-30	5-10
	24-60	Very stony loam, very cobbly sandy loam, very gravelly loam	GM-GC, GM	A-4, A-2, A-1	0	10-40	45-60	40-55	25-50	15-40	20-30	NP-10
Rock outcrop.												
178:												
Whitearth-------	0-5	Silt loam	CL-ML	A-4	0	0	100	100	90-100	80-90	25-30	5-10
	5-9	Silty clay loam	CL	A-6	0	0	100	100	95-100	90-95	30-40	10-20
	9-32	Silty clay loam	CL	A-6	0	0	100	100	95-100	90-95	30-70	10-20
	32-49	Silt loam	CL-ML	A-4	0	0	100	100	90-100	80-90	20-30	5-10
	49-60	Silt loam	CL-ML	A-4	0	0	100	100	90-100	70-90	20-30	5-10
Esteslake-------	0-4	Silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	30-40	10-15
	4-12	Silty clay, silty clay loam	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	15-25
	12-19	Silty clay loam, silty clay	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	15-25
	19-60	Stratified silty clay loam to silty clay	CL	A-6, A-7	0	0	100	100	95-100	85-95	35-45	15-25
179:												
Wildgen---------	0-6	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0-15	65-75	60-70	50-65	35-55	25-30	5-10
	6-17	Very gravelly loam, gravelly loam	CL-ML, GM-GC	A-4, A-2	0	0-25	50-75	45-70	40-65	25-55	25-30	5-10
	17-60	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, GM-GC	A-2, A-4, A-1	0	10-40	45-60	40-55	25-50	10-40	20-30	NP-10
180:												
Wildgen---------	0-7	Very gravelly loam	GM-GC	A-4, A-2	0	0-15	50-60	45-55	40-50	25-40	25-30	5-10
	7-15	Very gravelly loam, gravelly loam	CL-ML, GM-GC	A-4, A-2	0	0-25	50-75	45-70	40-65	25-55	25-30	5-10
	15-60	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, GM-GC	A-2, A-4, A-1	0	10-40	45-60	40-55	25-50	10-40	20-30	NP-10
181:												
Wildgen---------	0-6	Gravelly loam	CL-ML, GM-GC, SC-SM	A-4	0	0-15	65-75	60-70	50-65	35-55	25-30	5-10
	6-17	Very gravelly loam, gravelly loam	CL-ML, GM-GC	A-4, A-2	0	0-25	50-75	45-70	40-65	25-55	25-30	5-10
	17-60	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, GM-GC	A-2, A-4, A-1	0	10-40	45-60	40-55	25-50	10-40	20-30	NP-10

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
181 (con.):												
Finleypoint-----	0-10	Gravelly loam	SC-SM, GM-GC, CL-ML	A-4	0	10-15	65-85	60-80	50-80	35-60	25-30	5-10
	10-22	Very gravelly loam, very cobbly loam, gravelly loam	GM-GC, CL-ML	A-2, A-4	0	15-45	45-85	40-80	35-75	25-60	25-30	5-10
	22-34	Very gravelly loam, very gravelly sandy loam, very cobbly sandy loam	GM, GM-GC	A-1, A-2, A-4	0	15-30	40-65	35-60	30-55	15-45	20-30	NP-10
	34-60	Very gravelly loam, very gravelly sandy loam, very gravelly sandy clay loam	GM-GC	A-2, A-4	0	10-30	40-60	35-55	30-50	20-40	25-30	5-10
182:												
Winfall---------	0-19	Very gravelly loam	GM, GM-GC	A-2	0	0-15	40-60	30-50	25-45	20-35	20-30	NP-10
	19-60	Very gravelly loam, very gravelly sandy loam, very gravelly fine sandy loam	GM, GM-GC	A-1, A-2	0	0-25	45-60	35-50	25-40	15-30	20-30	NP-10
183:												
Winfall---------	0-15	Very gravelly loam	GM, GM-GC	A-2	0	0-15	40-60	30-50	25-45	20-35	20-30	NP-10
	15-60	Very gravelly loam, very gravelly sandy loam, very gravelly fine sandy loam	GM, GM-GC	A-1, A-2	0	0-25	45-60	35-50	25-40	15-30	20-30	NP-10
184:												
Winfall---------	0-15	Very gravelly loam	GM, GM-GC	A-2	0	0-15	40-60	30-50	25-45	20-35	20-30	NP-10
	15-60	Very gravelly loam, very gravelly sandy loam, very gravelly fine sandy loam	GM, GM-GC	A-1, A-2	0	0-25	45-60	35-50	25-40	15-30	20-30	NP-10
185:												
Winkler---------	0-4	Very gravelly loam	GM, SM	A-1	0	0-10	40-60	30-50	20-35	10-20	15-25	NP-5
	4-24	Very gravelly sandy loam, extremely gravelly sandy loam, very gravelly loam	GM, GP-GM, SM, SP-SM	A-1	0	0-15	25-60	15-50	10-35	5-20	15-25	NP-5
	24-60	Extremely gravelly sandy loam, extremely gravelly loam	GM, GP-GM	A-1	0	15-40	20-40	10-30	10-25	5-20	15-25	NP-5
Rock outcrop.												
186:												
Winkler---------	0-4	Very gravelly loam	GM, SM	A-1	0	0-10	40-60	30-50	20-35	10-20	15-25	NP-5
	4-24	Very gravelly sandy loam, extremely gravelly sandy loam, very gravelly loam	GM, GP-GM, SM, SP-SM	A-1	0	0-15	25-60	15-50	10-35	5-20	15-25	NP-5

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
186 (con.):												
Winkler---------	24-60	Extremely gravelly sandy loam, extremely gravelly loam	GM, GP-GM	A-1	0	15-40	20-40	10-30	10-25	5-20	15-25	NP-5
187:												
Winkler---------	0-4	Very gravelly loam	GM, SM	A-1	0	0-10	40-60	30-50	20-35	10-20	15-25	NP-5
	4-24	Very gravelly sandy loam, extremely gravelly sandy loam, very gravelly loam	GM, GP-GM, SM, SP-SM	A-1	0	0-15	25-60	15-50	10-35	5-20	15-25	NP-5
	24-60	Extremely gravelly sandy loam, extremely gravelly loam	GM, GP-GM	A-1	0	15-40	20-40	10-30	10-25	5-20	15-25	NP-5
Sharrott--------	0-4	Very gravelly loam	GM-GC	A-2, A-4	0	0-15	35-60	30-50	25-45	20-40	20-30	5-10
	4-11	Very gravelly loam	GM-GC	A-1, A-2	0	0-15	35-60	30-50	20-40	15-35	20-30	5-10
	11-19	Extremely gravelly loam	GM-GC, GP-GC	A-1, A-2	0	0-15	20-35	10-25	5-20	5-15	20-30	5-10
	19-60	Unweathered bedrock	---	---	---	---	---	---	---	---	---	NP
Rock outcrop.												
188: Xerofluvents.												
189: Xerofluvents.												
190:												
Yellowbay-------	0-3	Very gravelly loam	GM	A-2	0	0-15	45-55	40-50	35-45	25-35	20-30	NP-5
	3-22	Extremely gravelly sandy loam, very gravelly sandy loam	GM, SM, GP-GM, SP-SM	A-1	0	10-15	25-60	15-45	10-30	5-20	---	NP
	22-60	Extremely gravelly loamy sand, very gravelly loamy sand	GP-GM, GP	A-1	0	10-15	25-50	10-35	5-15	0-10	---	NP
191:												
Yellowbay-------	0-8	Very gravelly loam	GM	A-2	0	0-15	45-55	40-50	35-45	25-35	20-30	NP-5
	8-18	Extremely gravelly sandy loam, very gravelly sandy loam	GM, SM, GP-GM, SP-SM	A-1	0	10-15	25-60	15-45	10-30	5-20	---	NP
	18-60	Extremely gravelly loamy sand, very gravelly loamy sand	GP-GM, GP	A-1	0	10-15	25-50	10-35	5-15	0-10	---	NP
192:												
Yellowbay-------	0-4	Very gravelly loam	GM	A-2	0	0-15	45-55	40-50	35-45	25-35	20-30	NP-5
	4-14	Extremely gravelly sandy loam, very gravelly sandy loam	GM, SM, GP-GM, SP-SM	A-1	0	10-15	25-60	15-45	10-30	5-20	---	NP
	14-60	Extremely gravelly loamy sand, very gravelly loamy sand	GP-GM, GP	A-1	0	10-15	25-50	10-35	5-15	0-10	---	NP

ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
M-W: Miscellaneous water.												
W: Water.												

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" apply only to the surface layer)

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
1: Aeric Haplaquepts.											
2: Badland.											
3: Bata----------	0-9	5-15	0.80-0.95	0.60-2.00	0.11-0.13	Low	5.0-10	0.20	0.37	3	5
	9-25	12-25	1.15-1.40	0.60-2.00	0.07-0.09	Low	0.5-1.0	0.15	---		
	25-60	20-35	1.35-1.60	0.20-0.60	0.07-0.09	Moderate	0.0-0.5	0.17	---		
4: Bata----------	0-9	5-15	0.80-0.95	0.60-2.00	0.11-0.13	Low	5.0-10	0.20	0.37	3	5
	9-25	12-25	1.15-1.40	0.60-2.00	0.07-0.09	Low	0.5-1.0	0.15	---		
	25-60	20-35	1.35-1.60	0.20-0.60	0.07-0.09	Moderate	0.0-0.5	0.17	---		
5: Belton----------	0-8	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	2.0-4.0	0.37	0.37	5	6
	8-10	27-40	1.25-1.45	0.20-0.60	0.16-0.20	Low	1.0-2.0	0.37	---		
	10-19	35-60	1.30-1.50	0.06-0.20	0.11-0.14	Moderate	0.5-1.0	0.37	---		
	19-29	30-55	1.30-1.50	0.06-0.20	0.11-0.14	Moderate	0.0-0.5	0.37	---		
	29-60	20-40	1.30-1.50	0.06-0.20	0.12-0.15	Moderate	0.0-0.5	0.37	---		
6: Belton----------	0-9	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	2.0-4.0	0.37	0.37	5	6
	9-14	35-60	1.30-1.50	0.06-0.20	0.11-0.14	Moderate	0.5-1.0	0.37	---		
	14-20	30-55	1.30-1.50	0.06-0.20	0.11-0.14	Moderate	0.0-0.5	0.37	---		
	20-60	20-40	1.30-1.50	0.06-0.20	0.12-0.15	Moderate	0.0-0.5	0.37	---		
7: Belton----------	0-9	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	2.0-4.0	0.37	0.37	5	6
	9-14	35-60	1.30-1.50	0.06-0.20	0.11-0.14	Moderate	0.5-1.0	0.37	---		
	14-20	30-55	1.30-1.50	0.06-0.20	0.11-0.14	Moderate	0.0-0.5	0.37	---		
	20-60	20-40	1.30-1.50	0.06-0.20	0.12-0.15	Moderate	0.0-0.5	0.37	---		
8: Belton----------	0-8	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	2.0-4.0	0.37	0.37	5	6
	8-10	27-40	1.25-1.45	0.20-0.60	0.16-0.20	Low	1.0-2.0	0.37	---		
	10-19	35-60	1.30-1.50	0.06-0.20	0.11-0.14	Moderate	0.5-1.0	0.37	---		
	19-29	30-55	1.30-1.50	0.06-0.20	0.11-0.14	Moderate	0.0-0.5	0.37	---		
	29-60	20-40	1.30-1.50	0.06-0.20	0.12-0.15	Moderate	0.0-0.5	0.37	---		
Kerl----------	0-7	18-27	1.10-1.35	0.60-2.00	0.20-0.22	Low	2.0-4.0	0.37	0.37	5	6
	7-20	18-27	1.25-1.50	0.20-0.60	0.16-0.19	Low	0.5-2.0	0.32	---		
	20-60	18-30	1.30-1.55	0.20-0.60	0.16-0.19	Low	0.0-0.5	0.32	---		
9: Belton----------	0-9	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	2.0-4.0	0.37	0.37	5	6
	9-13	35-60	1.30-1.50	0.06-0.20	0.11-0.14	Moderate	0.5-1.0	0.37	---		
	13-29	30-55	1.30-1.50	0.06-0.20	0.11-0.14	Moderate	0.0-0.5	0.37	---		
	29-60	20-40	1.30-1.50	0.06-0.20	0.12-0.15	Moderate	0.0-0.5	0.37	---		
Kerl----------	0-7	18-27	1.10-1.35	0.60-2.00	0.20-0.22	Low	2.0-4.0	0.37	0.37	5	6
	7-20	18-27	1.25-1.50	0.20-0.60	0.16-0.19	Low	0.5-2.0	0.32	---		
	20-60	18-30	1.30-1.55	0.20-0.60	0.16-0.19	Low	0.0-0.5	0.32	---		
10: Bigarm----------	0-10	7-18	1.15-1.35	0.60-2.00	0.11-0.14	Low	2.0-4.0	0.17	0.37	3	5
	10-16	5-18	1.30-1.50	2.00-6.00	0.07-0.09	Low	1.0-2.0	0.10	---		
	16-60	5-18	1.30-1.55	2.00-6.00	0.06-0.08	Low	0.5-1.0	0.10	---		
11: Bigarm----------	0-9	7-18	1.15-1.35	0.60-2.00	0.13-0.16	Low	2.0-4.0	0.20	0.37	3	5
	9-18	5-18	1.30-1.50	2.00-6.00	0.08-0.09	Low	1.0-2.0	0.15	---		
	18-60	5-18	1.30-1.55	2.00-6.00	0.08-0.09	Low	0.5-1.0	0.15	---		
12: Bigarm----------	0-12	7-18	1.15-1.35	0.60-2.00	0.13-0.16	Low	2.0-4.0	0.20	0.37	3	5
	12-22	5-18	1.30-1.50	2.00-6.00	0.08-0.09	Low	1.0-2.0	0.15	---		
	22-60	5-18	1.30-1.55	2.00-6.00	0.08-0.09	Low	0.5-1.0	0.15	---		

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
13:											
Bigarm----------	0-10	7-18	1.15-1.35	0.60-2.00	0.13-0.16	Low	2.0-4.0	0.20	0.37	3	5
	10-24	5-18	1.30-1.50	2.00-6.00	0.08-0.09	Low	1.0-2.0	0.15	---		
	24-39	5-18	1.30-1.55	2.00-6.00	0.08-0.09	Low	0.5-1.0	0.15	---		
	39-60	5-18	1.35-1.60	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.10	---		
Hogsby----------	0-5	10-20	1.15-1.35	0.60-2.00	0.14-0.18	Low	2.0-4.0	0.20	0.37	1	5
	5-18	10-20	1.35-1.55	0.60-2.00	0.05-0.08	Low	1.0-2.0	0.10	---		
	18-60	---	---	---	---	---	---	---	---		
Rock outcrop.											
14:											
Bigarm----------	0-10	7-18	1.15-1.35	0.60-2.00	0.11-0.14	Low	2.0-4.0	0.17	0.37	3	5
	10-16	5-18	1.30-1.50	2.00-6.00	0.07-0.09	Low	1.0-2.0	0.10	---		
	16-60	5-18	1.35-1.60	2.00-6.00	0.03-0.04	Low	0.0-0.5	0.05	---		
Rubble land.											
15:											
Bigarm----------	0-12	7-18	1.15-1.35	0.60-2.00	0.09-0.11	Low	2.0-4.0	0.15	0.37	3	5
	12-18	5-18	1.30-1.50	2.00-6.00	0.08-0.09	Low	1.0-2.0	0.15	---		
	18-38	5-18	1.30-1.55	2.00-6.00	0.08-0.09	Low	0.5-1.0	0.15	---		
	38-60	5-18	1.35-1.60	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.10	---		
Hogsby----------	0-6	10-20	1.15-1.35	0.60-2.00	0.12-0.14	Low	2.0-4.0	0.24	0.37	1	5
	6-15	10-20	1.35-1.55	0.60-2.00	0.06-0.07	Low	1.0-2.0	0.15	---		
	15-60	---	---	---	---	---	---	---	---		
Rock outcrop.											
16:											
Bigarm----------	0-12	7-18	1.15-1.35	0.60-2.00	0.13-0.16	Low	2.0-4.0	0.20	0.37	3	5
	12-18	5-18	1.30-1.50	2.00-6.00	0.08-0.09	Low	1.0-2.0	0.15	---		
	18-60	5-18	1.35-1.60	2.00-6.00	0.05-0.06	Low	0.0-0.5	0.10	---		
Rock outcrop.											
Rubble land.											
17:											
Bohnly----------	0-8	18-27	1.05-1.25	0.60-2.00	0.18-0.20	Low	4.0-8.0	0.32	0.32	5	8
	8-36	18-27	1.20-1.45	0.60-2.00	0.17-0.19	Low	1.0-2.0	0.32	---		
	36-46	18-32	1.20-1.45	0.60-2.00	0.18-0.20	Moderate	0.5-1.0	0.32	---		
	46-60	5-15	1.30-1.50	0.60-2.00	0.12-0.16	Low	0.0-0.5	0.32	---		
18:											
Bolack----------	0-10	18-27	1.00-1.30	0.60-2.00	0.15-0.19	Low	4.0-8.0	0.32	0.32	5	8
	10-14	27-45	1.30-1.50	0.06-0.20	0.15-0.19	Moderate	1.0-2.0	0.37	---		
	14-44	40-60	1.30-1.50	0.06-0.20	0.15-0.19	High	0.5-1.0	0.32	---		
	44-60	40-60	1.30-1.55	0.06-0.20	0.13-0.17	High	0.0-0.5	0.32	---		
19:											
Borohemists.											
20:											
Bowlake---------	0-9	20-27	1.15-1.35	0.60-2.00	0.12-0.15	Low	2.0-4.0	0.24	0.37	5	6
	9-11	30-40	1.30-1.50	0.20-0.60	0.10-0.12	Moderate	1.0-2.0	0.20	---		
	11-19	35-60	1.30-1.50	0.06-0.20	0.10-0.12	High	0.5-1.0	0.24	---		
	19-22	30-45	1.30-1.55	0.06-0.20	0.10-0.12	Moderate	0.5-1.0	0.20	---		
	22-60	20-45	1.30-1.55	0.06-0.20	0.10-0.12	Moderate	0.0-0.5	0.20	---		
21:											
Bowlake---------	0-11	20-27	1.15-1.35	0.60-2.00	0.12-0.15	Low	2.0-4.0	0.24	0.37	5	6
	11-19	30-40	1.30-1.50	0.20-0.60	0.10-0.12	Moderate	1.0-2.0	0.20	---		
	19-32	35-60	1.30-1.50	0.06-0.20	0.10-0.12	High	0.5-1.0	0.24	---		
	32-51	30-45	1.30-1.55	0.06-0.20	0.10-0.12	Moderate	0.5-1.0	0.20	---		
	51-60	20-45	1.30-1.55	0.06-0.20	0.10-0.12	Moderate	0.0-0.5	0.20	---		
Minesinger------	0-14	18-27	1.15-1.35	0.60-2.00	0.12-0.15	Low	2.0-4.0	0.20	0.37	3	6
	14-24	18-27	1.30-1.50	0.60-2.00	0.10-0.12	Low	2.0-4.0	0.15	---		
	24-32	18-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	1.0-2.0	0.15	---		
	32-39	35-50	1.30-1.55	0.06-0.20	0.07-0.08	Moderate	0.5-1.0	0.10	---		
	39-60	27-40	1.30-1.55	0.06-0.20	0.07-0.08	Moderate	0.0-0.5	0.10	---		
22:											
Colake----------	0-10	18-27	1.10-1.30	0.60-2.00	0.15-0.19	Moderate	4.0-7.0	0.28	0.28	5	4L
	10-19	18-27	1.25-1.50	0.60-2.00	0.15-0.19	Moderate	1.0-2.0	0.32	---		
	19-60	18-27	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.0-1.0	0.32	---		

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
23:											
Colake----------	0-10	18-27	1.10-1.30	0.60-2.00	0.15-0.19	Moderate	4.0-7.0	0.28	0.28	5	4L
	10-19	18-27	1.25-1.50	0.60-2.00	0.15-0.19	Moderate	1.0-2.0	0.32	---		
	19-60	18-27	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.0-1.0	0.32	---		
24:											
Colake----------	0-10	18-27	1.10-1.30	0.60-2.00	0.15-0.19	Moderate	4.0-7.0	0.28	0.28	5	4L
	10-19	18-27	1.25-1.50	0.60-2.00	0.15-0.19	Moderate	1.0-2.0	0.32	---		
	19-60	18-27	1.30-1.50	0.60-2.00	0.15-0.19	Moderate	0.0-1.0	0.32	---		
Sacheen---------	0-4	3-8	1.45-1.55	>20.00	0.11-0.12	Low	0.5-1.0	0.17	0.17	5	2
	4-60	3-8	1.50-1.65	>20.00	0.09-0.11	Low	0.0-0.5	0.17	---		
25:											
Connah----------	0-6	10-27	1.05-1.25	0.60-2.00	0.13-0.16	Low	2.0-4.0	0.24	0.37	5	5
	6-12	35-45	1.25-1.45	0.20-0.60	0.16-0.20	Low	1.0-2.0	0.37	---		
	12-38	40-60	1.30-1.50	0.06-0.20	0.15-0.19	Low	0.5-1.0	0.32	---		
	38-60	35-50	1.30-1.50	0.06-0.20	0.16-0.19	Low	0.0-0.5	0.37	---		
26:											
Connah----------	0-7	10-27	1.00-1.20	0.60-2.00	0.15-0.19	Low	2.0-4.0	0.37	0.37	5	5
	7-14	35-45	1.25-1.45	0.20-0.60	0.16-0.20	Low	1.0-2.0	0.37	---		
	14-34	40-60	1.30-1.50	0.06-0.20	0.15-0.19	Low	0.5-1.0	0.32	---		
	34-60	35-50	1.30-1.50	0.06-0.20	0.16-0.19	Low	0.0-0.5	0.37	---		
27:											
Connah----------	0-7	27-35	1.10-1.30	0.20-0.60	0.16-0.20	Low	2.0-4.0	0.32	0.32	5	7
	7-13	35-45	1.25-1.45	0.20-0.60	0.16-0.20	Low	1.0-2.0	0.37	---		
	13-32	40-60	1.30-1.50	0.06-0.20	0.15-0.19	Low	0.5-1.0	0.32	---		
	32-60	35-50	1.30-1.50	0.06-0.20	0.16-0.19	Low	0.0-0.5	0.37	---		
Water.											
28:											
Courville-------	0-14	7-15	0.85-1.00	0.60-2.00	0.13-0.16	Low	1.0-4.0	0.20	0.37	3	5
	14-32	5-18	1.30-1.55	0.60-2.00	0.09-0.11	Low	0.5-2.0	0.10	---		
	32-60	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
29:											
Courville-------	0-14	7-15	0.85-1.00	0.60-2.00	0.13-0.16	Low	1.0-4.0	0.20	0.37	3	5
	14-32	5-18	1.30-1.55	0.60-2.00	0.09-0.11	Low	0.5-2.0	0.10	---		
	32-60	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
30:											
Courville-------	0-13	7-15	0.85-1.00	0.60-2.00	0.13-0.16	Low	1.0-4.0	0.20	0.37	3	5
	13-32	5-18	1.30-1.55	0.60-2.00	0.09-0.11	Low	0.5-2.0	0.10	---		
	32-60	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
31:											
Courville-------	0-9	7-15	0.85-1.00	0.60-2.00	0.13-0.16	Low	1.0-4.0	0.20	0.37	3	5
	9-19	5-18	1.30-1.55	0.60-2.00	0.09-0.11	Low	0.5-2.0	0.10	---		
	19-60	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
32:											
Courville-------	0-9	7-15	0.85-1.00	0.60-2.00	0.13-0.16	Low	1.0-4.0	0.20	0.37	3	5
	9-19	5-18	1.30-1.55	0.60-2.00	0.09-0.11	Low	0.5-2.0	0.10	---		
	19-60	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
33:											
Courville-------	0-9	7-15	0.85-1.00	0.60-2.00	0.13-0.16	Low	1.0-4.0	0.20	0.37	3	5
	9-19	5-18	1.30-1.55	0.60-2.00	0.09-0.11	Low	0.5-2.0	0.10	---		
	19-60	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
34:											
Courville-------	0-14	7-15	0.85-1.00	0.60-2.00	0.13-0.16	Low	1.0-4.0	0.20	0.37	3	5
	14-32	5-18	1.30-1.55	0.60-2.00	0.09-0.11	Low	0.5-2.0	0.10	---		
	32-60	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
Rumblecreek-----	0-12	10-20	1.15-1.35	0.60-2.00	0.12-0.15	Low	2.0-5.0	0.20	0.37	3	5
	12-18	10-20	1.25-1.50	0.60-2.00	0.11-0.14	Low	1.0-2.0	0.20	---		
	18-22	20-35	1.30-1.55	0.20-0.60	0.07-0.08	Low	0.5-1.0	0.10	---		
	22-60	20-35	1.35-1.60	0.20-0.60	0.07-0.08	Low	0.0-0.5	0.10	---		
35:											
Craddock--------	0-12	5-10	0.60-0.95	2.00-6.00	0.11-0.15	Low	2.0-4.0	0.15	0.37	5	5
	12-20	5-10	1.25-1.45	2.00-6.00	0.10-0.13	Low	1.0-2.0	0.32	---		
	20-60	5-10	1.25-1.45	2.00-6.00	0.10-0.12	Low	0.0-1.0	0.28	---		

PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
36:											
Craddock--------	0-10	5-10	0.60-0.95	2.00-6.00	0.14-0.18	Low	2.0-4.0	0.28	0.28	5	5
	10-33	5-10	1.25-1.45	2.00-6.00	0.10-0.13	Low	1.0-2.0	0.32	---		
	33-60	5-10	1.25-1.45	2.00-6.00	0.10-0.12	Low	0.0-1.0	0.28	---		
37:											
Craddock--------	0-10	5-10	0.60-0.95	2.00-6.00	0.14-0.18	Low	2.0-4.0	0.28	0.28	5	5
	10-33	5-10	1.25-1.45	2.00-6.00	0.10-0.13	Low	1.0-2.0	0.32	---		
	33-60	5-10	1.25-1.45	2.00-6.00	0.10-0.12	Low	0.0-1.0	0.28	---		
38:											
Doker----------	0-7	18-27	0.85-0.90	0.60-2.00	0.20-0.22	Low	4.0-8.0	0.32	0.32	5	5
	7-15	5-10	0.85-0.90	0.60-2.00	0.18-0.22	Low	2.0-4.0	0.37	---		
	15-60	8-18	1.20-1.50	2.00-6.00	0.12-0.15	Low	0.0-1.0	0.20	---		
39:											
Dryfork---------	0-10	10-15	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	5
	10-16	10-18	1.20-1.40	0.60-2.00	0.15-0.19	Low	0.5-1.0	0.37	---		
	16-31	5-18	1.20-1.40	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
	31-60	5-18	1.20-1.40	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
40:											
Dryfork---------	0-10	10-15	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	5
	10-16	10-18	1.20-1.40	0.60-2.00	0.15-0.19	Low	0.5-1.0	0.37	---		
	16-31	5-18	1.20-1.40	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
	31-60	5-18	1.20-1.40	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
Selow----------	0-8	27-35	1.20-1.40	0.60-2.00	0.15-0.19	Low	1.0-2.0	0.49	0.49	5	6
	8-14	27-35	1.20-1.40	0.01-0.06	0.12-0.16	Moderate	0.5-1.0	0.43	---		
	14-20	27-40	1.20-1.40	0.01-0.06	0.12-0.16	Moderate	0.0-0.5	0.43	---		
	20-28	0-10	1.25-1.45	0.60-2.00	0.14-0.18	Low	0.0-0.5	0.37	---		
	28-60	0-10	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.0-0.5	0.37	---		
41:											
Dryfork---------	0-10	10-15	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	5
	10-16	10-18	1.20-1.40	0.60-2.00	0.15-0.19	Low	0.5-1.0	0.37	---		
	16-31	5-18	1.20-1.40	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
	31-60	5-18	1.20-1.40	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
Selow----------	0-9	27-35	1.20-1.40	0.60-2.00	0.15-0.19	Low	1.0-2.0	0.49	0.49	5	6
	9-14	27-35	1.20-1.40	0.01-0.06	0.12-0.16	Moderate	0.5-1.0	0.43	---		
	14-20	27-40	1.20-1.40	0.01-0.06	0.12-0.16	Moderate	0.0-0.5	0.43	---		
	20-28	0-10	1.25-1.45	0.60-2.00	0.14-0.18	Low	0.0-0.5	0.37	---		
	28-60	0-10	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.0-0.5	0.37	---		
42:											
Dubay----------	0-5	10-18	1.10-1.30	0.60-2.00	0.18-0.22	Low	4.0-6.0	0.28	0.28	5	5
	5-30	5-15	1.30-1.50	0.60-2.00	0.17-0.20	Low	1.0-2.0	0.37	---		
	30-60	5-15	1.30-1.55	0.20-0.60	0.17-0.20	Low	0.0-1.0	0.37	---		
43:											
Dubay----------	0-5	10-18	1.10-1.30	0.60-2.00	0.18-0.22	Low	4.0-6.0	0.28	0.28	5	5
	5-30	5-15	1.30-1.50	0.60-2.00	0.17-0.20	Low	1.0-2.0	0.37	---		
	30-60	5-15	1.30-1.55	0.20-0.60	0.17-0.20	Low	0.0-1.0	0.37	---		
44:											
Eaglewing-------	0-11	18-27	1.15-1.40	0.20-0.60	0.13-0.16	Low	0.5-2.0	0.24	0.37	5	6
	11-20	18-27	1.25-1.50	0.20-0.60	0.13-0.16	Low	0.5-1.0	0.28	---		
	20-60	18-27	1.25-1.50	0.20-0.60	0.13-0.16	Low	0.0-0.5	0.28	---		
45:											
Eaglewing-------	0-11	18-27	1.15-1.40	0.20-0.60	0.13-0.16	Low	0.5-2.0	0.24	0.37	5	6
	11-20	18-27	1.25-1.50	0.20-0.60	0.13-0.16	Low	0.5-1.0	0.28	---		
	20-36	18-27	1.25-1.50	0.20-0.60	0.13-0.16	Low	0.0-0.5	0.28	---		
46:											
Eaglewing-------	0-17	18-27	1.15-1.40	0.20-0.60	0.16-0.19	Low	0.5-2.0	0.28	0.28	5	6
	17-26	18-27	1.25-1.50	0.20-0.60	0.13-0.16	Low	0.5-1.0	0.28	---		
	26-60	18-27	1.25-1.50	0.20-0.60	0.13-0.16	Low	0.0-0.5	0.28	---		
47:											
Esteslake-------	0-3	18-35	1.20-1.40	0.20-0.60	0.10-0.12	Moderate	1.0-2.0	0.43	0.43	5	4L
	3-12	35-50	1.30-1.50	0.06-0.20	0.06-0.08	Moderate	0.5-1.0	0.37	---		
	12-19	35-50	1.30-1.55	0.00-0.06	0.06-0.08	Moderate	0.0-0.5	0.43	---		
	19-60	35-50	1.30-1.55	0.00-0.06	0.06-0.08	Moderate	0.0-0.5	0.43	---		
Slickspots.											

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
48:											
Felan----------	0-8	5-15	0.85-0.95	0.60-2.00	0.15-0.17	Low	3.0-6.0	0.20	0.37	3	5
	8-16	5-15	1.25-1.50	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.32	---		
	16-60	5-15	1.30-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.32	---		
49:											
Felan----------	0-7	5-15	0.85-0.95	0.60-2.00	0.15-0.17	Low	3.0-6.0	0.20	0.37	3	5
	7-23	5-15	1.25-1.50	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.32	---		
	23-60	5-15	1.30-1.55	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.32	---		
50:											
Finleypoint-----	0-9	15-25	1.10-1.30	0.60-2.00	0.12-0.14	Low	3.0-5.0	0.20	0.37	3	5
	9-30	15-25	1.30-1.50	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.15	---		
	30-42	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.10	---		
	42-60	15-25	1.35-1.60	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
51:											
Finleypoint-----	0-9	15-25	1.10-1.30	0.60-2.00	0.12-0.14	Low	3.0-5.0	0.20	0.37	3	5
	9-30	15-25	1.30-1.50	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.15	---		
	30-42	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.10	---		
	42-60	15-25	1.35-1.60	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
52:											
Finleypoint-----	0-10	15-25	1.10-1.30	0.60-2.00	0.12-0.14	Low	3.0-5.0	0.20	0.37	3	5
	10-22	15-25	1.30-1.50	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.15	---		
	22-34	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.10	---		
	34-60	15-25	1.35-1.60	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
53:											
Finleypoint-----	0-10	15-25	1.10-1.30	0.60-2.00	0.12-0.14	Low	3.0-5.0	0.20	0.37	3	5
	10-22	15-25	1.30-1.50	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.15	---		
	22-34	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.10	---		
	34-60	15-25	1.35-1.60	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
54:											
Finleypoint-----	0-8	15-25	1.10-1.30	0.60-2.00	0.12-0.14	Low	3.0-5.0	0.20	0.37	3	5
	8-30	15-25	1.30-1.50	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.15	---		
	30-42	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.10	---		
	42-60	15-25	1.35-1.60	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
55:											
Finleypoint-----	0-8	15-25	1.10-1.30	0.60-2.00	0.12-0.14	Low	3.0-5.0	0.05	0.37	3	5
	8-30	15-25	1.30-1.50	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.15	---		
	30-42	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.10	---		
	42-60	15-25	1.35-1.60	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
56:											
Finleypoint-----	0-10	15-25	1.10-1.30	0.60-2.00	0.12-0.14	Low	3.0-5.0	0.20	0.37	3	5
	10-13	15-25	1.30-1.50	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.15	---		
	13-34	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.10	---		
	34-60	15-25	1.35-1.60	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
Wildgen---------	0-6	15-25	1.10-1.30	0.60-2.00	0.12-0.15	Low	4.0-6.0	0.15	0.37	3	6
	6-17	15-25	1.35-1.55	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.15	---		
	17-60	10-25	1.40-1.60	0.60-2.00	0.07-0.08	Low	0.0-0.5	0.10	---		
57:											
Flott----------	0-10	10-27	1.10-1.30	0.60-2.00	0.12-0.15	Low	4.0-6.0	0.15	0.37	3	5
	10-23	10-27	1.25-1.40	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.10	---		
	23-44	18-30	1.35-1.60	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.10	---		
	44-60	18-30	1.40-1.65	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
58:											
Flott----------	0-10	10-27	1.10-1.30	0.60-2.00	0.12-0.15	Low	4.0-6.0	0.15	0.37	3	5
	10-23	10-27	1.25-1.40	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.10	---		
	23-44	18-30	1.35-1.60	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.10	---		
	44-60	18-30	1.40-1.65	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
59:											
Flott----------	0-8	10-27	1.10-1.30	0.60-2.00	0.12-0.15	Low	4.0-6.0	0.15	0.37	3	5
	8-18	10-27	1.25-1.40	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.10	---		
	18-32	18-30	1.35-1.60	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.10	---		
	32-60	18-30	1.40-1.65	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
60:											
Flott----------	0-13	10-27	1.10-1.30	0.60-2.00	0.12-0.15	Low	4.0-6.0	0.15	0.37	3	5
	13-18	10-27	1.25-1.40	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.10	---		
	18-23	18-30	1.35-1.60	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.10	---		
	23-60	18-30	1.40-1.65	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		

PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
61:											
Flott----------	0-10	10-27	1.15-1.35	0.60-2.00	0.09-0.12	Low	4.0-6.0	0.05	0.37	3	5
	10-18	10-27	1.25-1.40	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.10	---		
	18-23	18-30	1.35-1.60	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.10	---		
	23-60	18-30	1.40-1.65	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
62:											
Gardencreek-----	0-6	27-35	1.15-1.35	0.20-0.60	0.16-0.20	Moderate	1.0-3.0	0.37	0.37	5	6
	6-20	30-40	1.25-1.45	0.06-0.20	0.16-0.20	High	0.5-1.0	0.37	---		
	20-60	35-60	1.30-1.50	0.06-0.20	0.15-0.19	High	0.5-1.0	0.32	---		
63:											
Gird----------	0-10	10-18	1.05-1.25	0.60-2.00	0.16-0.20	Low	3.0-5.0	0.37	0.37	5	5
	10-17	10-18	1.30-1.50	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.28	---		
	17-60	10-18	1.30-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
64:											
Gird----------	0-8	10-18	1.05-1.25	0.60-2.00	0.16-0.20	Low	3.0-5.0	0.28	0.28	5	5
	8-20	10-18	1.30-1.50	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	---		
	20-60	10-18	1.30-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
65:											
Gird----------	0-8	10-18	1.10-1.30	0.60-2.00	0.16-0.20	Low	3.0-5.0	0.28	0.28	3	5
	8-28	10-18	1.20-1.40	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	---		
	28-60	10-18	1.20-1.45	0.60-2.00	0.16-0.20	Low	0.0-0.5	0.37	---		
Dryfork---------	0-13	10-15	1.10-1.30	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	3	4L
	13-24	10-18	1.20-1.40	0.60-2.00	0.15-0.19	Low	0.5-1.0	0.37	---		
	24-60	5-18	1.20-1.45	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
66:											
Gird----------	0-8	10-18	1.05-1.25	0.60-2.00	0.16-0.20	Low	3.0-5.0	0.28	0.28	5	5
	8-17	10-18	1.30-1.50	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	---		
	17-60	10-18	1.30-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
Vincom----------	0-5	15-27	1.10-1.30	0.20-0.60	0.18-0.22	Low	0.5-1.0	0.49	0.49	5	4L
	5-22	18-35	1.25-1.50	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.37	---		
	22-60	18-35	1.30-1.55	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.43	---		
67:											
Gird----------	0-7	10-18	1.05-1.25	0.60-2.00	0.16-0.20	Low	3.0-5.0	0.28	0.28	5	5
	7-29	10-18	1.30-1.50	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	---		
	29-60	10-18	1.30-1.55	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
Vincom----------	0-5	15-27	1.10-1.30	0.20-0.60	0.18-0.22	Low	0.5-1.0	0.49	0.49	5	4L
	5-22	18-35	1.25-1.50	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.37	---		
	22-60	18-35	1.30-1.55	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.43	---		
68:											
Glaciercreek----	0-11	5-15	0.85-1.00	0.60-2.00	0.13-0.16	Low	1.0-4.0	0.20	0.37	2	5
	11-60	0-10	1.50-1.65	>20.00	0.01-0.02	Low	0.0-5.0	0.02	---		
69:											
Half Moon-------	0-11	15-25	1.15-1.35	0.60-2.00	0.18-0.22	Low	1.0-3.0	0.37	0.37	5	6
	11-16	25-35	1.30-1.50	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---		
	16-26	25-35	1.30-1.50	0.20-0.60	0.16-0.20	Low	0.0-0.5	0.37	---		
	26-60	20-30	1.30-1.50	0.20-0.60	0.14-0.18	Low	0.0-0.5	0.37	---		
70:											
Half Moon-------	0-11	15-25	1.15-1.35	0.60-2.00	0.18-0.22	Low	1.0-3.0	0.37	0.37	5	6
	11-31	25-35	1.30-1.50	0.20-0.60	0.16-0.20	Moderate	0.5-1.0	0.32	---		
	31-60	25-30	1.30-1.50	0.20-0.60	0.16-0.20	Low	0.0-0.5	0.37	---		
Courville-------	0-14	7-15	0.85-1.00	0.60-2.00	0.13-0.16	Low	1.0-4.0	0.20	0.37	3	5
	14-32	5-18	1.30-1.55	0.60-2.00	0.09-0.11	Low	0.5-2.0	0.10	---		
	32-60	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
71:											
Hogsby----------	0-8	10-20	1.15-1.35	0.60-2.00	0.12-0.14	Low	2.0-4.0	0.17	0.37	1	5
	8-13	10-20	1.35-1.55	0.60-2.00	0.06-0.07	Low	1.0-2.0	0.15	---		
	13-60	---	---	---	---		---	---	---		
Finleypoint-----	0-13	15-25	1.10-1.30	0.60-2.00	0.12-0.14	Low	3.0-5.0	0.15	0.37	3	5
	13-30	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.10	---		
	30-60	15-25	1.35-1.60	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
72:											
Hogsby----------	0-5	10-20	1.15-1.35	0.60-2.00	0.14-0.18	Low	2.0-4.0	0.17	0.37	1	5
	5-18	10-20	1.35-1.55	0.60-2.00	0.05-0.08	Low	1.0-2.0	0.10	---		
	18-60	---	---	---	---	---	---	---	---		
Rock outcrop.											
73:											
Holloway--------	0-9	5-15	0.80-0.95	0.60-2.00	0.15-0.18	Low	2.0-4.0	0.15	0.37	3	5
	9-25	5-15	1.30-1.55	2.00-6.00	0.04-0.06	Low	1.0-2.0	0.05	---		
	25-60	5-15	1.30-1.50	2.00-6.00	0.03-0.04	Low	0.5-1.0	0.05	---		
74:											
Holloway--------	0-10	5-15	0.80-0.95	0.60-2.00	0.15-0.18	Low	2.0-4.0	0.15	0.37	3	5
	10-26	5-15	1.30-1.55	2.00-6.00	0.04-0.06	Low	1.0-2.0	0.05	---		
	26-60	5-15	1.30-1.50	2.00-6.00	0.03-0.04	Low	0.5-1.0	0.05	---		
75:											
Holloway--------	0-9	5-15	0.80-0.95	0.60-2.00	0.15-0.18	Low	2.0-4.0	0.15	0.37	3	5
	9-20	5-15	1.30-1.55	2.00-6.00	0.04-0.06	Low	1.0-2.0	0.05	---		
	20-46	5-15	1.30-1.55	2.00-6.00	0.03-0.04	Low	0.5-1.0	0.05	---		
	46-60	5-15	1.40-1.70	2.00-6.00	0.02-0.03	Low	0.0-0.5	0.05	---		
76:											
Holloway--------	0-9	5-15	0.80-0.95	0.60-2.00	0.15-0.18	Low	2.0-4.0	0.15	0.37	3	5
	9-20	5-15	1.30-1.55	2.00-6.00	0.04-0.06	Low	1.0-2.0	0.05	---		
	20-60	5-15	1.30-1.55	2.00-6.00	0.03-0.04	Low	0.5-1.0	0.05	---		
77:											
Holloway--------	0-10	5-15	0.80-0.95	0.60-2.00	0.15-0.18	Low	2.0-4.0	0.15	0.37	3	5
	10-17	5-15	1.35-1.55	2.00-6.00	0.03-0.04	Low	1.0-2.0	0.05	---		
	17-60	5-15	1.35-1.60	2.00-6.00	0.02-0.03	Low	0.5-1.0	0.05	---		
Rock outcrop.											
78:											
Holloway--------	0-9	5-15	0.80-0.95	0.60-2.00	0.15-0.18	Low	2.0-4.0	0.15	0.37	3	5
	9-17	5-15	1.30-1.55	2.00-6.00	0.04-0.06	Low	1.0-2.0	0.05	---		
	17-60	5-15	1.30-1.50	2.00-6.00	0.03-0.04	Low	0.5-1.0	0.05	---		
Rubble land.											
79:											
Irvine----------	0-8	40-50	1.20-1.40	0.06-0.20	0.14-0.16	Moderate	0.5-2.0	0.37	0.37	5	4
	8-14	35-50	1.30-1.50	0.06-0.20	0.10-0.12	Moderate	0.5-1.0	0.43	---		
	14-60	35-50	1.40-1.60	0.00-0.06	0.07-0.09	Moderate	0.0-0.5	0.43	---		
80:											
Irvine----------	0-8	40-50	1.20-1.40	0.06-0.20	0.16-0.18	Low	0.5-2.0	0.37	0.37	5	4
	8-14	35-50	1.30-1.50	0.06-0.20	0.10-0.12	Moderate	0.5-1.0	0.43	---		
	14-60	35-50	1.40-1.60	0.00-0.06	0.07-0.09	Moderate	0.0-0.5	0.43	---		
81:											
Jocko----------	0-13	10-25	1.15-1.35	0.60-2.00	0.13-0.16	Low	2.0-4.0	0.15	0.37	3	5
	13-19	5-15	1.30-1.50	0.60-6.00	0.08-0.10	Low	1.0-2.0	0.17	---		
	19-25	0-5	1.35-1.55	6.00-20.00	0.05-0.07	Low	0.5-1.0	0.10	---		
	25-60	0-5	1.40-1.60	6.00-20.00	0.01-0.02	Low	0.0-0.5	0.02	---		
82:											
Jocko----------	0-7	10-25	1.15-1.35	0.60-2.00	0.13-0.16	Low	2.0-4.0	0.15	0.37	3	5
	7-16	5-15	1.30-1.50	0.60-6.00	0.08-0.10	Low	1.0-2.0	0.17	---		
	16-22	0-5	1.35-1.55	6.00-20.00	0.05-0.07	Low	0.5-1.0	0.10	---		
	22-60	0-5	1.40-1.60	6.00-20.00	0.01-0.02	Low	0.0-0.5	0.02	---		
83:											
Jocko----------	0-7	10-18	1.20-1.40	2.00-6.00	0.08-0.10	Low	2.0-4.0	0.02	0.20	3	8
	7-18	5-15	1.30-1.50	0.60-6.00	0.08-0.10	Low	1.0-2.0	0.17	---		
	18-60	0-5	1.40-1.60	6.00-20.00	0.01-0.02	Low	0.0-0.5	0.02	---		
84:											
Kerl----------	0-7	18-27	1.15-1.35	0.60-2.00	0.17-0.20	Low	2.0-4.0	0.32	0.32	5	6
	7-20	18-27	1.25-1.50	0.20-0.60	0.16-0.19	Low	0.5-2.0	0.32	---		
	20-60	18-30	1.30-1.55	0.20-0.60	0.16-0.19	Low	0.0-0.5	0.32	---		
85:											
Kerl----------	0-7	18-27	1.15-1.35	0.60-2.00	0.17-0.20	Low	2.0-4.0	0.32	0.32	5	6
	7-20	18-27	1.25-1.50	0.20-0.60	0.16-0.19	Low	0.5-2.0	0.32	---		
	20-60	18-30	1.30-1.55	0.20-0.60	0.16-0.19	Low	0.0-0.5	0.32	---		

PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
86:											
Kerrdam---------	0-5	5-15	1.05-1.25	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	5	5
	5-12	5-15	1.15-1.45	0.60-2.00	0.17-0.21	Low	0.5-1.0	0.37	---		
	12-34	0-15	1.20-1.50	0.60-2.00	0.16-0.20	Low	0.0-0.5	0.37	---		
	34-60	0-5	1.20-1.50	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
87:											
Kerrdam---------	0-5	5-15	1.05-1.25	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	5	5
	5-12	5-15	1.15-1.45	0.60-2.00	0.17-0.21	Low	0.5-1.0	0.37	---		
	12-34	0-15	1.20-1.50	0.60-2.00	0.16-0.20	Low	0.0-0.5	0.37	---		
	34-60	0-5	1.20-1.50	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
88:											
Kerrdam---------	0-5	5-15	1.05-1.25	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	5	5
	5-12	5-15	1.15-1.45	0.60-2.00	0.17-0.21	Low	0.5-1.0	0.37	---		
	12-34	0-15	1.20-1.50	0.60-2.00	0.16-0.20	Low	0.0-0.5	0.37	---		
	34-60	0-5	1.20-1.50	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
Vincom----------	0-5	15-27	1.10-1.30	0.20-0.60	0.18-0.22	Low	0.5-1.0	0.49	0.49	5	4L
	5-22	18-35	1.25-1.50	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.37	---		
	22-60	18-35	1.30-1.55	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.43	---		
89:											
Kerrdam---------	0-8	5-15	1.05-1.25	0.60-2.00	0.18-0.22	Low	1.0-2.0	0.37	0.37	5	5
	8-12	5-15	1.15-1.45	0.60-2.00	0.17-0.21	Low	0.5-1.0	0.37	---		
	12-34	0-15	1.20-1.50	0.60-2.00	0.16-0.20	Low	0.0-0.5	0.37	---		
	34-60	0-5	1.20-1.50	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
Vincom----------	0-5	15-27	1.10-1.30	0.20-0.60	0.18-0.22	Low	0.5-1.0	0.49	0.49	5	4L
	5-22	18-35	1.25-1.50	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.37	---		
	22-60	18-35	1.30-1.55	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.43	---		
90:											
Kingspoint------	0-17	15-27	1.15-1.35	0.60-2.00	0.12-0.15	Low	1.0-3.0	0.20	0.37	3	5
	17-33	15-27	1.25-1.50	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.10	---		
	33-60	15-27	1.30-1.50	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.10	---		
91:											
Kingspoint------	0-11	15-27	1.15-1.35	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.10	0.37	3	5
	11-22	15-27	1.25-1.50	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.10	---		
	22-60	15-27	1.30-1.50	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.10	---		
92:											
Kingspoint------	0-5	15-27	1.15-1.35	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.10	0.37	3	5
	5-17	15-27	1.25-1.50	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.10	---		
	17-60	15-27	1.30-1.50	0.60-2.00	0.09-0.11	Low	0.0-0.5	0.10	---		
93:											
Lamoose---------	0-7	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	4.0-6.0	0.20	0.37	3	8
	7-19	18-27	1.30-1.50	0.60-2.00	0.15-0.18	Low	1.0-2.0	0.32	---		
	19-60	0-10	1.45-1.65	6.00-20.00	0.02-0.03	Low	0.0-0.5	0.05	---		
94:											
Lonepine--------	0-6	12-25	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	5
	6-14	18-35	1.25-1.50	0.60-2.00	0.17-0.20	Moderate	0.5-1.0	0.37	---		
	14-60	18-35	1.35-1.60	0.20-0.60	0.16-0.20	Moderate	0.0-0.5	0.37	---		
95:											
Lonepine--------	0-6	12-25	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	5
	6-14	18-35	1.25-1.50	0.60-2.00	0.17-0.20	Moderate	0.5-1.0	0.37	---		
	14-60	18-35	1.35-1.60	0.20-0.60	0.16-0.20	Moderate	0.0-0.5	0.37	---		
96:											
Lonepine--------	0-6	12-25	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	5
	6-14	18-35	1.25-1.50	0.60-2.00	0.17-0.20	Moderate	0.5-1.0	0.37	---		
	14-60	18-35	1.35-1.60	0.20-0.60	0.16-0.20	Moderate	0.0-0.5	0.37	---		
97:											
Lonepine--------	0-6	12-25	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	5
	6-14	18-35	1.25-1.50	0.60-2.00	0.17-0.20	Moderate	0.5-1.0	0.37	---		
	14-60	18-35	1.35-1.60	0.20-0.60	0.16-0.20	Moderate	0.0-0.5	0.37	---		
Vincom----------	0-5	15-27	1.10-1.30	0.20-0.60	0.18-0.22	Low	0.5-1.0	0.49	0.49	5	4L
	5-22	18-35	1.25-1.50	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.37	---		
	22-60	18-35	1.30-1.55	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.43	---		

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
98:											
Lonepine--------	0-6	12-25	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	5
	6-14	18-35	1.25-1.50	0.60-2.00	0.17-0.20	Moderate	0.5-1.0	0.37	---		
	14-60	18-35	1.35-1.60	0.20-0.60	0.16-0.20	Moderate	0.0-0.5	0.37	---		
Vincom----------	0-5	15-27	1.10-1.30	0.20-0.60	0.18-0.22	Low	0.5-1.0	0.49	0.49	5	4L
	5-22	18-35	1.25-1.50	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.37	---		
	22-60	18-35	1.30-1.55	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.43	---		
99:											
Marklepass------	0-9	27-40	1.25-1.45	0.06-0.20	0.09-0.11	Moderate	1.0-2.0	0.49	0.49	5	7
	9-14	27-40	1.30-1.55	0.06-0.20	0.09-0.11	Moderate	0.5-1.0	0.43	---		
	14-20	35-50	1.30-1.55	0.00-0.06	0.07-0.08	Moderate	0.0-0.5	0.43	---		
	20-60	35-50	1.30-1.55	0.00-0.06	0.07-0.08	Moderate	0.0-0.5	0.43	---		
100:											
Marklepass------	0-9	27-40	1.25-1.45	0.06-0.20	0.09-0.11	Moderate	1.0-2.0	0.49	0.49	5	7
	9-14	27-40	1.30-1.55	0.06-0.20	0.09-0.11	Moderate	0.5-1.0	0.43	---		
	14-20	35-50	1.30-1.55	0.00-0.06	0.07-0.08	Moderate	0.0-0.5	0.43	---		
	20-60	35-50	1.30-1.55	0.00-0.06	0.07-0.08	Moderate	0.0-0.5	0.43	---		
Slickspots.											
101:											
McCollum--------	0-7	8-18	1.15-1.35	2.00-6.00	0.13-0.16	Low	2.0-4.0	0.17	0.17	5	3
	7-29	8-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.5-1.0	0.20	---		
	29-60	8-18	1.40-1.65	2.00-6.00	0.11-0.14	Low	0.0-0.5	0.20	---		
102:											
McCollum--------	0-7	8-18	1.15-1.35	2.00-6.00	0.13-0.16	Low	2.0-4.0	0.17	0.17	5	3
	7-29	8-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.5-1.0	0.20	---		
	29-60	8-18	1.40-1.65	2.00-6.00	0.11-0.14	Low	0.0-0.5	0.20	---		
103:											
McCollum--------	0-7	8-18	1.15-1.35	2.00-6.00	0.13-0.16	Low	2.0-4.0	0.17	0.17	5	3
	7-29	8-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.5-1.0	0.20	---		
	29-60	8-18	1.40-1.65	2.00-6.00	0.11-0.14	Low	0.0-0.5	0.20	---		
104:											
McCollum--------	0-7	8-18	1.25-1.40	2.00-6.00	0.13-0.16	Low	2.0-4.0	0.17	0.17	4	3
	7-29	8-18	1.35-1.55	2.00-6.00	0.12-0.15	Low	0.5-1.0	0.20	---		
	29-42	8-18	1.40-1.60	2.00-6.00	0.11-0.14	Low	0.0-0.5	0.20	---		
	42-60	5-15	1.40-1.65	2.00-6.00	0.04-0.05	Low	0.0-0.5	0.10	---		
105:											
McDonald--------	0-10	27-35	1.15-1.35	0.20-0.60	0.12-0.15	Moderate	3.0-5.0	0.28	0.32	5	7
	10-14	15-27	1.25-1.50	0.60-2.00	0.14-0.17	Low	1.0-3.0	0.32	---		
	14-42	40-60	1.30-1.50	0.06-0.20	0.13-0.16	High	0.5-1.0	0.28	---		
	42-60	27-35	1.30-1.55	0.20-0.60	0.13-0.16	Moderate	0.0-0.5	0.28	---		
106:											
McDonald--------	0-10	27-35	1.15-1.35	0.20-0.60	0.12-0.15	Moderate	3.0-5.0	0.28	0.32	5	7
	10-18	15-27	1.25-1.50	0.60-2.00	0.14-0.17	Low	1.0-3.0	0.32	---		
	18-40	40-60	1.30-1.50	0.06-0.20	0.13-0.16	High	0.5-1.0	0.28	---		
	40-60	27-35	1.30-1.55	0.20-0.60	0.13-0.16	Moderate	0.0-0.5	0.28	---		
107:											
McDonald--------	0-13	27-35	1.15-1.35	0.20-0.60	0.12-0.15	Moderate	3.0-5.0	0.28	0.32	5	7
	13-17	15-27	1.25-1.50	0.60-2.00	0.14-0.17	Low	1.0-3.0	0.32	---		
	17-33	40-60	1.30-1.50	0.06-0.20	0.13-0.16	High	0.5-1.0	0.28	---		
	33-60	27-35	1.30-1.55	0.20-0.60	0.13-0.16	Moderate	0.0-0.5	0.28	---		
108:											
McDonald--------	0-10	27-35	1.15-1.35	0.20-0.60	0.16-0.19	Moderate	3.0-5.0	0.28	0.28	5	7
	10-14	15-27	1.25-1.50	0.60-2.00	0.14-0.17	Low	1.0-3.0	0.32	---		
	14-42	40-60	1.30-1.50	0.06-0.20	0.13-0.16	High	0.5-1.0	0.28	---		
	42-60	27-35	1.30-1.55	0.20-0.60	0.13-0.16	Moderate	0.0-0.5	0.28	---		
109:											
Minesinger------	0-6	18-27	1.15-1.35	0.60-2.00	0.12-0.15	Low	2.0-4.0	0.20	0.37	3	6
	6-14	18-27	1.30-1.50	0.60-2.00	0.10-0.12	Low	2.0-4.0	0.15	---		
	14-24	18-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	1.0-2.0	0.15	---		
	24-39	35-50	1.30-1.55	0.06-0.20	0.07-0.08	Moderate	0.5-1.0	0.10	---		
	39-60	27-40	1.30-1.55	0.06-0.20	0.07-0.08	Moderate	0.0-0.5	0.10	---		

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
110:											
Minesinger------	0-6	18-27	1.15-1.35	0.60-2.00	0.10-0.12	Low	2.0-4.0	0.20	0.37	3	8
	6-14	18-27	1.30-1.50	0.60-2.00	0.10-0.12	Low	2.0-4.0	0.15	---		
	14-24	18-35	1.30-1.50	0.20-0.60	0.08-0.10	Moderate	1.0-2.0	0.15	---		
	24-39	35-50	1.30-1.55	0.06-0.20	0.07-0.08	Moderate	0.5-1.0	0.10	---		
	39-60	27-40	1.30-1.55	0.06-0.20	0.07-0.08	Moderate	0.0-0.5	0.10	---		
Walstead--------	0-8	15-25	1.10-1.30	0.60-2.00	0.11-0.14	Low	3.0-6.0	0.05	0.37	3	8
	8-17	15-25	1.20-1.40	0.60-2.00	0.12-0.15	Low	1.0-3.0	0.20	---		
	17-26	15-25	1.30-1.50	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.10	---		
	26-60	10-25	1.30-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.10	---		
111:											
Mitten----------	0-12	5-10	0.65-0.95	0.60-2.00	0.14-0.17	Low	2.0-4.0	0.24	0.37	3	5
	12-36	5-10	1.35-1.60	2.00-6.00	0.03-0.04	Low	0.5-1.0	0.05	---		
	36-60	5-10	1.40-1.65	2.00-6.00	0.02-0.03	Low	0.0-0.5	0.05	---		
112:											
Mitten----------	0-12	5-10	0.65-0.95	0.60-2.00	0.11-0.14	Low	2.0-4.0	0.15	0.37	3	5
	12-36	5-10	1.35-1.60	2.00-6.00	0.03-0.04	Low	0.5-1.0	0.05	---		
	36-60	5-10	1.40-1.65	2.00-6.00	0.02-0.03	Low	0.0-0.5	0.05	---		
113:											
Mitten----------	0-10	5-10	0.65-0.95	0.60-2.00	0.11-0.14	Low	2.0-4.0	0.15	0.37	3	5
	10-36	5-10	1.35-1.60	2.00-6.00	0.03-0.04	Low	0.5-1.0	0.05	---		
	36-60	5-10	1.40-1.65	2.00-6.00	0.02-0.03	Low	0.0-0.5	0.05	---		
114:											
Mitten----------	0-10	5-10	0.65-0.95	0.60-2.00	0.11-0.14	Low	2.0-4.0	0.15	0.37	3	5
	10-36	5-10	1.35-1.60	2.00-6.00	0.03-0.04	Low	0.5-1.0	0.05	---		
	36-60	5-10	1.40-1.65	2.00-6.00	0.02-0.03	Low	0.0-0.5	0.05	---		
Rock outcrop.											
115:											
Moiese----------	0-8	10-22	1.10-1.30	0.60-2.00	0.16-0.18	Low	2.0-4.0	0.32	0.32	2	5
	8-13	5-22	1.35-1.55	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.17	---		
	13-18	5-15	1.40-1.60	2.00-6.00	0.06-0.07	Low	0.5-1.0	0.05	---		
	18-60	0-5	1.40-1.60	6.00-20.00	0.03-0.04	Low	0.0-0.5	0.02	---		
116:											
Mollman---------	0-14	10-27	1.10-1.35	0.60-2.00	0.14-0.17	Low	1.0-4.0	0.20	0.37	3	5
	14-31	10-27	1.25-1.45	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.15	---		
	31-38	15-27	1.25-1.45	0.60-2.00	0.10-0.12	Low	0.5-1.0	0.15	---		
	38-60	15-27	1.25-1.50	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.15	---		
117:											
Mollman---------	0-14	10-27	1.10-1.35	0.60-2.00	0.14-0.17	Low	1.0-4.0	0.20	0.37	3	5
	14-31	10-27	1.25-1.45	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.15	---		
	31-38	15-27	1.25-1.45	0.60-2.00	0.10-0.12	Low	0.5-1.0	0.15	---		
	38-60	15-27	1.25-1.50	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.15	---		
118:											
Mollman---------	0-14	10-27	1.10-1.35	0.60-2.00	0.14-0.17	Low	1.0-4.0	0.20	0.37	3	5
	14-31	10-27	1.25-1.45	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.15	---		
	31-38	15-27	1.25-1.45	0.60-2.00	0.10-0.12	Low	0.5-1.0	0.15	---		
	38-60	15-27	1.25-1.50	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.15	---		
119:											
Mollman---------	0-18	10-27	1.10-1.35	0.60-2.00	0.10-0.12	Low	1.0-4.0	0.10	0.37	3	5
	18-30	15-27	1.25-1.45	0.60-2.00	0.10-0.12	Low	0.5-1.0	0.15	---		
	30-60	15-27	1.25-1.50	0.60-2.00	0.10-0.12	Low	0.0-0.5	0.15	---		
120:											
Niarada---------	0-9	15-27	1.30-1.50	0.60-2.00	0.12-0.15	Low	3.0-5.0	0.15	0.37	3	5
	9-14	15-27	1.50-1.75	0.60-2.00	0.05-0.08	Low	0.5-1.0	0.15	---		
	14-60	10-18	1.50-1.70	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.10	---		
121:											
Niarada---------	0-7	15-27	1.30-1.50	0.60-2.00	0.12-0.15	Low	3.0-5.0	0.15	0.37	3	5
	7-14	15-27	1.50-1.75	0.60-2.00	0.05-0.08	Low	0.5-1.0	0.15	---		
	14-60	10-18	1.50-1.70	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.10	---		
122:											
Niarada---------	0-7	15-27	1.30-1.50	0.60-2.00	0.12-0.15	Low	3.0-5.0	0.15	0.37	3	5
	7-14	15-27	1.50-1.75	0.60-2.00	0.05-0.08	Low	0.5-1.0	0.15	---		
	14-60	10-18	1.50-1.70	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.10	---		

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
123:											
Niarada---------	0-7	15-27	1.30-1.50	0.60-2.00	0.12-0.15	Low	3.0-5.0	0.15	0.37	3	5
	7-14	15-27	1.45-1.60	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.17	---		
	14-18	15-27	1.50-1.75	0.60-2.00	0.05-0.08	Low	0.5-1.0	0.15	---		
	18-60	10-18	1.50-1.70	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.10	---		
124:											
Niarada---------	0-7	15-27	1.30-1.50	0.60-2.00	0.12-0.15	Low	3.0-5.0	0.15	0.37	3	5
	7-14	15-27	1.45-1.60	0.60-2.00	0.10-0.12	Low	1.0-2.0	0.17	---		
	14-18	15-27	1.50-1.75	0.60-2.00	0.05-0.08	Low	0.5-1.0	0.15	---		
	18-60	10-18	1.50-1.70	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.10	---		
125:											
Niarada---------	0-10	15-27	1.30-1.50	0.60-2.00	0.12-0.15	Low	3.0-5.0	0.15	0.37	3	5
	10-22	15-27	1.50-1.75	0.60-2.00	0.05-0.08	Low	0.5-1.0	0.15	---		
	22-60	10-18	1.50-1.70	0.60-2.00	0.07-0.09	Low	0.0-0.5	0.10	---		
Kerl----------	0-7	18-27	1.10-1.35	0.60-2.00	0.20-0.22	Low	2.0-4.0	0.32	0.32	5	6
	7-20	18-27	1.25-1.50	0.20-0.60	0.16-0.19	Low	0.5-2.0	0.32	---		
	20-60	18-30	1.30-1.55	0.20-0.60	0.16-0.19	Low	0.0-0.5	0.32	---		
126:											
Ninepipe--------	0-10	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	2.0-5.0	0.32	0.32	5	6
	10-28	18-27	1.10-1.30	0.60-2.00	0.16-0.20	Low	2.0-3.0	0.32	---		
	28-41	27-35	1.25-1.50	0.60-2.00	0.16-0.20	Low	0.5-2.0	0.32	---		
	41-60	18-35	1.25-1.50	0.60-2.00	0.15-0.19	Low	0.0-0.5	0.37	---		
127:											
Phillcher-------	0-11	5-10	0.65-0.95	2.00-6.00	0.14-0.18	Low	1.0-3.0	0.17	0.37	3	5
	11-37	0-10	1.40-1.60	2.00-6.00	0.06-0.08	Low	0.5-1.0	0.10	---		
	37-60	0-10	1.50-1.70	2.00-6.00	0.03-0.04	Low	0.0-0.5	0.05	---		
128:											
Phillcher-------	0-11	5-10	0.65-0.95	2.00-6.00	0.14-0.18	Low	1.0-3.0	0.17	0.37	3	5
	11-37	0-10	1.40-1.60	2.00-6.00	0.06-0.08	Low	0.5-1.0	0.10	---		
	37-60	0-10	1.50-1.70	2.00-6.00	0.03-0.04	Low	0.0-0.5	0.05	---		
Rock outcrop.											
129:											
Pits.											
130:											
Polson----------	0-10	15-25	1.15-1.35	2.00-6.00	0.15-0.19	Low	3.0-5.0	0.28	0.28	5	5
	10-18	18-35	1.30-1.60	0.20-0.60	0.12-0.15	Low	1.0-3.0	0.37	---		
	18-60	15-30	1.30-1.60	0.20-0.60	0.12-0.15	Low	0.0-1.0	0.37	---		
131:											
Polson----------	0-10	15-25	1.15-1.35	2.00-6.00	0.15-0.19	Low	3.0-5.0	0.28	0.28	5	5
	10-18	18-35	1.30-1.60	0.20-0.60	0.12-0.15	Low	1.0-3.0	0.37	---		
	18-60	15-30	1.30-1.60	0.20-0.60	0.12-0.15	Low	0.0-1.0	0.37	---		
132:											
Polson----------	0-10	15-25	1.15-1.35	2.00-6.00	0.15-0.19	Low	3.0-5.0	0.28	0.28	5	5
	10-18	18-35	1.30-1.60	0.20-0.60	0.12-0.15	Low	1.0-3.0	0.37	---		
	18-60	15-30	1.30-1.60	0.20-0.60	0.12-0.15	Low	0.0-1.0	0.37	---		
Vincom----------	0-5	15-27	1.10-1.30	0.20-0.60	0.18-0.22	Low	0.5-1.0	0.49	0.49	5	4L
	5-22	18-35	1.25-1.50	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.37	---		
	22-60	18-35	1.30-1.55	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.43	---		
133:											
Post----------	0-6	20-27	1.10-1.30	0.60-2.00	0.18-0.20	Low	2.0-4.0	0.43	0.43	5	6
	6-9	27-40	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	1.0-2.0	0.43	---		
	9-21	60-80	1.25-1.45	0.00-0.06	0.11-0.13	Moderate	0.5-1.0	0.37	---		
	21-27	60-80	1.25-1.50	0.00-0.06	0.11-0.12	Moderate	0.0-0.5	0.37	---		
	27-60	60-70	1.30-1.50	0.00-0.06	0.11-0.12	Moderate	0.0-0.5	0.37	---		
134:											
Post----------	0-7	27-35	1.15-1.35	0.20-0.60	0.18-0.20	Moderate	2.0-4.0	0.37	0.37	5	7
	7-9	27-40	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	1.0-2.0	0.43	---		
	9-20	60-80	1.25-1.45	0.00-0.06	0.11-0.13	Moderate	0.5-1.0	0.37	---		
	20-60	60-80	1.25-1.50	0.00-0.06	0.11-0.12	Moderate	0.0-0.5	0.37	---		
135:											
Post----------	0-8	27-35	1.15-1.35	0.20-0.60	0.18-0.20	Moderate	2.0-4.0	0.37	0.37	5	7
	8-10	27-40	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	1.0-2.0	0.43	---		
	10-21	60-80	1.25-1.45	0.00-0.06	0.11-0.13	Moderate	0.5-1.0	0.37	---		
	21-60	60-80	1.25-1.50	0.00-0.06	0.11-0.12	Moderate	0.0-0.5	0.37	---		

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
136:											
Post----------	0-8	20-27	1.10-1.30	0.60-2.00	0.18-0.20	Low	2.0-4.0	0.43	0.43	5	6
	8-13	27-40	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	1.0-2.0	0.43	---		
	13-22	60-80	1.25-1.45	0.00-0.06	0.11-0.13	Moderate	0.5-1.0	0.37	---		
	22-60	60-80	1.25-1.50	0.00-0.06	0.11-0.12	Moderate	0.0-0.5	0.37	---		
Ronan----------	0-4	30-40	1.25-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-2.0	0.43	0.43	5	7
	4-7	60-70	1.25-1.45	0.00-0.06	0.10-0.12	Moderate	0.5-1.0	0.37	---		
	7-16	60-80	1.25-1.45	0.00-0.06	0.10-0.12	Moderate	0.0-0.5	0.37	---		
	16-60	50-75	1.25-1.45	0.00-0.06	0.09-0.10	Moderate	0.0-0.5	0.37	---		
Water.											
137:											
Post----------	0-8	20-27	1.10-1.30	0.60-2.00	0.18-0.20	Low	2.0-4.0	0.43	0.43	5	6
	8-13	27-40	1.20-1.45	0.20-0.60	0.16-0.20	Moderate	1.0-2.0	0.43	---		
	13-22	60-80	1.25-1.45	0.00-0.06	0.11-0.13	Moderate	0.5-1.0	0.37	---		
	22-60	60-80	1.25-1.50	0.00-0.06	0.11-0.12	Moderate	0.0-0.5	0.37	---		
Ronan----------	0-4	30-40	1.25-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-2.0	0.43	0.43	5	7
	4-7	60-70	1.25-1.45	0.00-0.06	0.10-0.12	Moderate	0.5-1.0	0.37	---		
	7-16	60-80	1.25-1.45	0.00-0.06	0.10-0.12	Moderate	0.0-0.5	0.37	---		
	16-60	50-75	1.25-1.45	0.00-0.06	0.09-0.10	Moderate	0.0-0.5	0.37	---		
Water.											
138:											
Repp----------	0-4	10-20	1.15-1.35	0.60-2.00	0.12-0.15	Low	2.0-4.0	0.17	0.37	3	5
	4-14	10-20	1.35-1.60	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.15	---		
	14-60	10-18	1.40-1.65	0.60-2.00	0.04-0.05	Low	0.0-0.5	0.05	---		
139:											
Repp----------	0-12	10-20	1.15-1.35	0.60-2.00	0.12-0.15	Low	2.0-4.0	0.17	0.37	3	5
	12-25	10-20	1.35-1.60	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.15	---		
	25-60	10-18	1.40-1.65	0.60-2.00	0.04-0.05	Low	0.0-0.5	0.05	---		
Rock outcrop.											
140:											
Rock outcrop.											
Rubble land.											
141:											
Ronan----------	0-4	30-40	1.25-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-2.0	0.43	0.43	5	7
	4-7	60-70	1.25-1.45	0.00-0.06	0.10-0.12	Moderate	0.5-1.0	0.37	---		
	7-16	60-80	1.25-1.45	0.00-0.06	0.10-0.12	Moderate	0.0-0.5	0.37	---		
	16-60	50-75	1.25-1.45	0.00-0.06	0.09-0.10	Moderate	0.0-0.5	0.37	---		
142:											
Ronan----------	0-4	30-40	1.25-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-2.0	0.43	0.43	5	7
	4-7	60-70	1.25-1.45	0.00-0.06	0.10-0.12	Moderate	0.5-1.0	0.37	---		
	7-16	60-80	1.25-1.45	0.00-0.06	0.10-0.12	Moderate	0.0-0.5	0.37	---		
	16-60	50-75	1.25-1.45	0.00-0.06	0.09-0.10	Moderate	0.0-0.5	0.37	---		
143:											
Ronan----------	0-4	30-40	1.25-1.45	0.20-0.60	0.16-0.20	Moderate	0.5-2.0	0.43	0.43	5	7
	4-7	60-70	1.25-1.45	0.00-0.06	0.10-0.12	Moderate	0.5-1.0	0.37	---		
	7-16	60-80	1.25-1.45	0.00-0.06	0.10-0.12	Moderate	0.0-0.5	0.37	---		
	16-60	50-75	1.25-1.45	0.00-0.06	0.09-0.10	Moderate	0.0-0.5	0.37	---		
144:											
Round Butte-----	0-7	27-35	1.20-1.40	0.20-0.60	0.16-0.20	Moderate	0.5-2.0	0.43	0.43	5	7
	7-14	35-60	1.30-1.50	0.00-0.06	0.08-0.11	Moderate	0.5-1.0	0.37	---		
	14-44	35-55	1.30-1.50	0.00-0.06	0.06-0.09	Moderate	0.0-0.5	0.37	---		
	44-60	30-50	1.30-1.55	0.00-0.06	0.06-0.09	Moderate	0.0-0.5	0.37	---		
145:											
Round Butte-----	0-7	27-35	1.20-1.40	0.20-0.60	0.16-0.20	Moderate	0.5-2.0	0.43	0.43	5	7
	7-14	35-60	1.30-1.50	0.00-0.06	0.08-0.11	Moderate	0.5-1.0	0.37	---		
	14-44	35-55	1.30-1.50	0.00-0.06	0.06-0.09	Moderate	0.0-0.5	0.37	---		
	44-60	30-50	1.30-1.55	0.00-0.06	0.06-0.09	Moderate	0.0-0.5	0.37	---		
146:											
Round Butte-----	0-7	27-35	1.20-1.40	0.20-0.60	0.16-0.20	Moderate	0.5-2.0	0.43	0.43	5	7
	7-14	35-60	1.30-1.50	0.00-0.06	0.08-0.11	Moderate	0.5-1.0	0.37	---		
	14-44	35-55	1.30-1.50	0.00-0.06	0.06-0.09	Moderate	0.0-0.5	0.37	---		
	44-60	30-50	1.30-1.55	0.00-0.06	0.06-0.09	Moderate	0.0-0.5	0.37	---		

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
147:											
Round Butte-----	0-7	27-35	1.20-1.40	0.20-0.60	0.16-0.20	Moderate	0.5-2.0	0.43	0.43	5	7
	7-14	35-60	1.30-1.50	0.00-0.06	0.08-0.11	Moderate	0.5-1.0	0.37	---		
	14-44	35-55	1.30-1.50	0.00-0.06	0.06-0.09	Moderate	0.0-0.5	0.37	---		
	44-60	30-50	1.30-1.55	0.00-0.06	0.06-0.09	Moderate	0.0-0.5	0.37	---		
148:											
Round Butte-----	0-7	27-35	1.20-1.40	0.20-0.60	0.16-0.20	Moderate	0.5-2.0	0.43	0.43	5	7
	7-14	35-60	1.30-1.50	0.00-0.06	0.08-0.11	Moderate	0.5-1.0	0.37	---		
	14-44	35-55	1.30-1.50	0.00-0.06	0.06-0.09	Moderate	0.0-0.5	0.37	---		
	44-60	30-50	1.30-1.55	0.00-0.06	0.06-0.09	Moderate	0.0-0.5	0.37	---		
Irvine----------	0-5	35-40	1.20-1.40	0.20-0.60	0.18-0.20	Low	0.5-2.0	0.43	0.43	5	4L
	5-10	35-50	1.30-1.50	0.06-0.20	0.10-0.12	Moderate	0.5-1.0	0.43	---		
	10-60	35-50	1.40-1.60	0.00-0.06	0.07-0.09	Moderate	0.0-0.5	0.43	---		
149:											
Round Butte-----	0-7	27-35	1.20-1.40	0.20-0.60	0.16-0.20	Moderate	0.5-2.0	0.43	0.43	5	7
	7-14	35-60	1.30-1.50	0.00-0.06	0.08-0.11	Moderate	0.5-1.0	0.37	---		
	14-44	35-55	1.30-1.50	0.00-0.06	0.06-0.09	Moderate	0.0-0.5	0.37	---		
	44-60	30-50	1.30-1.55	0.00-0.06	0.06-0.09	Moderate	0.0-0.5	0.37	---		
Irvine----------	0-5	35-40	1.20-1.40	0.20-0.60	0.18-0.20	Low	0.5-2.0	0.43	0.43	5	4L
	5-10	35-50	1.30-1.50	0.06-0.20	0.10-0.12	Moderate	0.5-1.0	0.43	---		
	10-60	35-50	1.40-1.60	0.00-0.06	0.07-0.09	Moderate	0.0-0.5	0.43	---		
150:											
Rumblecreek-----	0-8	10-20	1.15-1.35	0.60-2.00	0.12-0.15	Low	2.0-5.0	0.17	0.37	3	5
	8-20	10-20	1.25-1.50	0.60-2.00	0.11-0.14	Low	1.0-2.0	0.20	---		
	20-32	20-35	1.30-1.55	0.20-0.60	0.07-0.08	Low	0.5-1.0	0.10	---		
	32-60	20-35	1.35-1.60	0.20-0.60	0.07-0.08	Low	0.0-0.5	0.10	---		
151:											
Rumblecreek-----	0-5	10-20	1.15-1.35	0.60-2.00	0.12-0.15	Low	2.0-5.0	0.17	0.37	3	5
	5-18	10-20	1.25-1.50	0.60-2.00	0.11-0.14	Low	1.0-2.0	0.20	---		
	18-22	20-35	1.30-1.55	0.20-0.60	0.07-0.08	Low	0.5-1.0	0.10	---		
	22-60	20-35	1.35-1.60	0.20-0.60	0.07-0.08	Low	0.0-0.5	0.10	---		
152:											
Rumblecreek-----	0-5	10-20	1.15-1.35	0.60-2.00	0.12-0.15	Low	2.0-5.0	0.17	0.37	3	5
	5-18	10-20	1.25-1.50	0.60-2.00	0.11-0.14	Low	1.0-2.0	0.20	---		
	18-22	20-35	1.30-1.55	0.20-0.60	0.07-0.08	Low	0.5-1.0	0.10	---		
	22-60	20-35	1.35-1.60	0.20-0.60	0.07-0.08	Low	0.0-0.5	0.10	---		
153:											
Rumblecreek-----	0-5	10-20	1.15-1.35	0.60-2.00	0.12-0.15	Low	2.0-5.0	0.17	0.37	3	5
	5-18	10-20	1.25-1.50	0.60-2.00	0.11-0.14	Low	1.0-2.0	0.20	---		
	18-22	20-35	1.30-1.55	0.20-0.60	0.07-0.08	Low	0.5-1.0	0.10	---		
	22-60	20-35	1.35-1.60	0.20-0.60	0.07-0.08	Low	0.0-0.5	0.10	---		
154:											
Sacheen---------	0-4	3-8	1.45-1.55	>20.00	0.09-0.10	Low	0.5-1.0	0.20	0.20	5	1
	4-60	3-8	1.50-1.65	>20.00	0.09-0.11	Low	0.0-0.5	0.17	---		
155:											
Sacheen---------	0-3	3-8	1.45-1.55	>20.00	0.11-0.12	Low	0.5-1.0	0.20	0.20	5	2
	3-60	3-8	1.50-1.65	>20.00	0.09-0.11	Low	0.0-0.5	0.17	---		
156:											
Selon----------	0-7	10-18	1.20-1.40	2.00-6.00	0.12-0.15	Low	3.0-5.0	0.15	0.15	5	3
	7-60	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.24	---		
157:											
Selon----------	0-7	10-18	1.20-1.40	2.00-6.00	0.12-0.15	Low	3.0-5.0	0.15	0.15	5	3
	7-60	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.24	---		
158:											
Selon----------	0-4	10-18	1.20-1.40	2.00-6.00	0.12-0.15	Low	3.0-5.0	0.15	0.15	5	3
	4-60	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.24	---		
159:											
Selon----------	0-8	10-18	1.20-1.40	2.00-6.00	0.12-0.15	Low	3.0-5.0	0.15	0.20	5	3
	8-60	10-18	1.40-1.60	2.00-6.00	0.12-0.15	Low	0.0-0.5	0.24	---		

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
160:											
Selow----------	0-9	27-35	1.20-1.40	0.60-2.00	0.15-0.19	Low	1.0-2.0	0.49	0.49	5	7
	9-15	27-35	1.20-1.40	0.01-0.06	0.12-0.16	Moderate	0.5-1.0	0.43	---		
	15-20	27-40	1.20-1.40	0.01-0.06	0.12-0.16	Moderate	0.0-0.5	0.43	---		
	20-28	0-10	1.25-1.45	0.60-2.00	0.14-0.18	Low	0.0-0.5	0.37	---		
	28-60	0-10	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.0-0.5	0.37	---		
161:											
Selow----------	0-9	27-35	1.20-1.40	0.60-2.00	0.15-0.19	Low	1.0-2.0	0.49	0.49	5	7
	9-15	27-35	1.20-1.40	0.01-0.06	0.12-0.16	Moderate	0.5-1.0	0.43	---		
	15-20	27-40	1.20-1.40	0.01-0.06	0.12-0.16	Moderate	0.0-0.5	0.43	---		
	20-28	0-10	1.25-1.45	0.60-2.00	0.14-0.18	Low	0.0-0.5	0.37	---		
	28-60	0-10	1.30-1.50	0.60-2.00	0.14-0.18	Low	0.0-0.5	0.37	---		
162:											
Tevis----------	0-7	10-15	1.20-1.40	2.00-6.00	0.10-0.13	Low	0.5-2.0	0.15	0.37	3	5
	7-14	5-10	1.30-1.50	2.00-6.00	0.06-0.08	Low	0.5-2.0	0.10	---		
	14-33	5-10	1.30-1.50	2.00-6.00	0.03-0.04	Low	0.5-1.0	0.05	---		
	33-60	5-10	1.30-1.50	2.00-6.00	0.03-0.04	Low	0.0-0.5	0.05	---		
163:											
Trapps----------	0-12	10-15	1.10-1.30	0.60-2.00	0.13-0.16	Low	2.0-5.0	0.17	0.37	3	5
	12-27	27-35	1.15-1.35	0.20-0.60	0.08-0.09	Moderate	1.0-2.0	0.15	---		
	27-60	10-15	1.30-1.50	0.60-2.00	0.09-0.10	Low	0.5-1.0	0.10	---		
164:											
Trapps----------	0-13	10-15	1.10-1.30	0.60-2.00	0.13-0.16	Low	2.0-5.0	0.17	0.37	3	5
	13-27	27-35	1.15-1.35	0.20-0.60	0.08-0.09	Moderate	1.0-2.0	0.15	---		
	27-60	10-15	1.30-1.50	0.60-2.00	0.09-0.10	Low	0.5-1.0	0.10	---		
165:											
Truscreek-------	0-9	18-27	1.05-1.25	0.60-2.00	0.16-0.20	Low	2.0-4.0	0.32	0.32	5	6
	9-12	18-27	1.15-1.30	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	---		
	12-25	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	0.5-1.0	0.37	---		
	25-32	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	0.5-1.0	0.37	---		
	32-60	12-27	1.30-1.50	0.60-2.00	0.16-0.20	Low	0.0-0.5	0.37	---		
166:											
Truscreek-------	0-9	18-27	1.05-1.25	0.60-2.00	0.16-0.20	Low	2.0-4.0	0.32	0.32	5	6
	9-12	18-27	1.15-1.30	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	---		
	12-25	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	0.5-1.0	0.37	---		
	25-32	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	0.5-1.0	0.37	---		
	32-60	12-27	1.30-1.50	0.60-2.00	0.16-0.20	Low	0.0-0.5	0.37	---		
Polson----------	0-7	15-25	1.15-1.35	2.00-6.00	0.15-0.19	Low	3.0-5.0	0.28	0.28	5	5
	7-15	15-35	1.30-1.60	0.20-0.60	0.12-0.15	Low	1.0-3.0	0.37	---		
	15-60	15-30	1.30-1.60	0.20-0.60	0.12-0.15	Low	0.0-1.0	0.37	---		
167:											
Truscreek-------	0-8	18-27	1.05-1.25	0.60-2.00	0.16-0.20	Low	2.0-4.0	0.32	0.32	5	6
	8-12	18-27	1.15-1.30	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	---		
	12-24	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	0.5-1.0	0.37	---		
	24-32	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	0.5-1.0	0.37	---		
	32-60	12-27	1.30-1.50	0.60-2.00	0.16-0.20	Low	0.0-0.5	0.37	---		
Polson----------	0-7	15-25	1.15-1.35	2.00-6.00	0.15-0.19	Low	3.0-5.0	0.28	0.28	5	5
	7-15	15-35	1.30-1.60	0.20-0.60	0.12-0.15	Low	1.0-3.0	0.37	---		
	15-60	15-30	1.30-1.60	0.20-0.60	0.12-0.15	Low	0.0-1.0	0.37	---		
168:											
Truscreek-------	0-8	18-27	1.05-1.25	0.60-2.00	0.16-0.20	Low	2.0-4.0	0.32	0.32	5	6
	8-12	18-27	1.15-1.30	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	---		
	12-24	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	0.5-1.0	0.37	---		
	24-32	18-27	1.20-1.40	0.60-2.00	0.16-0.20	Low	0.5-1.0	0.37	---		
	32-60	12-27	1.30-1.50	0.60-2.00	0.16-0.20	Low	0.0-0.5	0.37	---		
Polson----------	0-7	15-25	1.15-1.35	2.00-6.00	0.15-0.19	Low	3.0-5.0	0.28	0.28	5	5
	7-15	15-35	1.30-1.60	0.20-0.60	0.12-0.15	Low	1.0-3.0	0.37	---		
	15-60	15-30	1.30-1.60	0.20-0.60	0.12-0.15	Low	0.0-1.0	0.37	---		
169: Typic Haplaquepts.											
170:											
Vincom----------	0-5	15-27	1.10-1.30	0.20-0.60	0.18-0.22	Low	0.5-1.0	0.49	0.49	5	4L
	5-22	18-35	1.25-1.50	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.37	---		
	22-60	18-35	1.30-1.55	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.43	---		

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
171:											
Vincom----------	0-5	15-27	1.10-1.30	0.20-0.60	0.18-0.22	Low	0.5-1.0	0.49	0.49	5	4L
	5-22	18-35	1.25-1.50	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.37	---		
	22-60	18-35	1.30-1.55	0.06-0.20	0.13-0.16	Low	0.0-0.5	0.43	---		
Lonepine--------	0-6	12-25	1.15-1.35	0.60-2.00	0.16-0.20	Low	1.0-2.0	0.37	0.37	5	5
	6-14	18-35	1.25-1.50	0.60-2.00	0.17-0.20	Moderate	0.5-1.0	0.37	---		
	14-60	18-35	1.35-1.60	0.20-0.60	0.16-0.20	Moderate	0.0-0.5	0.37	---		
172:											
Waldbillig------	0-9	5-15	0.65-0.95	0.60-2.00	0.13-0.16	Low	1.0-4.0	0.20	0.37	3	5
	9-25	7-18	1.40-1.65	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.10	---		
	25-60	7-18	1.40-1.65	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
173:											
Waldbillig------	0-9	5-15	0.65-0.95	0.60-2.00	0.13-0.16	Low	1.0-4.0	0.20	0.37	3	5
	9-25	7-18	1.40-1.65	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.10	---		
	25-60	7-18	1.40-1.65	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
174:											
Walstead--------	0-13	15-25	1.10-1.30	0.60-2.00	0.12-0.15	Low	3.0-6.0	0.15	0.37	3	5
	13-32	10-25	1.30-1.50	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.15	---		
	32-60	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
175:											
Walstead--------	0-8	15-25	1.10-1.30	0.60-2.00	0.12-0.15	Low	3.0-6.0	0.15	0.37	3	5
	8-15	15-25	1.20-1.40	0.60-2.00	0.11-0.14	Low	1.0-3.0	0.15	---		
	15-36	10-25	1.30-1.50	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.15	---		
	36-60	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
176:											
Walstead--------	0-8	15-25	1.10-1.30	0.60-2.00	0.12-0.15	Low	3.0-6.0	0.15	0.37	3	5
	8-15	15-25	1.20-1.40	0.60-2.00	0.11-0.14	Low	1.0-3.0	0.15	---		
	15-36	10-25	1.30-1.50	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.15	---		
	36-60	10-25	1.30-1.55	0.60-2.00	0.05-0.06	Low	0.0-0.5	0.10	---		
177:											
Walstead--------	0-6	15-25	1.10-1.30	0.60-2.00	0.12-0.15	Low	3.0-6.0	0.15	0.37	3	5
	6-15	15-25	1.20-1.40	0.60-2.00	0.12-0.15	Low	1.0-3.0	0.20	---		
	15-24	15-25	1.30-1.50	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.10	---		
	24-60	10-25	1.30-1.55	0.60-2.00	0.06-0.08	Low	0.0-0.5	0.10	---		
Rock outcrop.											
178:											
Whitearth-------	0-5	18-27	1.10-1.30	0.20-0.60	0.15-0.19	Low	2.0-3.0	0.43	0.43	5	6
	5-9	27-35	1.30-1.60	0.06-0.20	0.08-0.10	Moderate	1.0-2.0	0.37	---		
	9-32	27-35	1.30-1.50	0.06-0.20	0.10-0.12	Moderate	0.5-1.0	0.37	---		
	32-49	10-27	1.30-1.50	0.20-0.60	0.10-0.12	Low	0.0-0.5	0.43	---		
	49-60	10-27	1.30-1.50	0.20-0.60	0.08-0.10	Low	0.0-0.5	0.43	---		
Esteslake-------	0-4	18-35	1.20-1.40	0.20-0.60	0.10-0.12	Moderate	1.0-2.0	0.43	0.43	5	4L
	4-12	35-50	1.30-1.50	0.06-0.20	0.06-0.08	Moderate	0.5-1.0	0.37	---		
	12-19	35-50	1.30-1.55	0.00-0.06	0.06-0.08	Moderate	0.0-0.5	0.43	---		
	19-60	35-50	1.30-1.55	0.00-0.06	0.06-0.08	Moderate	0.0-0.5	0.43	---		
179:											
Wildgen---------	0-6	15-25	1.10-1.30	0.60-2.00	0.12-0.15	Low	4.0-6.0	0.10	0.37	3	6
	6-17	15-25	1.35-1.55	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.15	---		
	17-60	10-25	1.40-1.60	0.60-2.00	0.07-0.08	Low	0.0-0.5	0.10	---		
180:											
Wildgen---------	0-7	15-25	1.15-1.35	0.60-2.00	0.09-0.11	Low	4.0-6.0	0.02	0.37	3	6
	7-15	15-25	1.35-1.55	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.15	---		
	15-60	10-25	1.40-1.60	0.60-2.00	0.07-0.08	Low	0.0-0.5	0.10	---		
181:											
Wildgen---------	0-6	15-25	1.10-1.30	0.60-2.00	0.12-0.15	Low	4.0-6.0	0.10	0.37	3	6
	6-17	15-25	1.35-1.55	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.15	---		
	17-60	10-25	1.40-1.60	0.60-2.00	0.07-0.08	Low	0.0-0.5	0.10	---		
Finleypoint-----	0-10	15-25	1.10-1.30	0.60-2.00	0.12-0.14	Low	3.0-5.0	0.20	0.37	3	5
	10-22	15-25	1.30-1.50	0.60-2.00	0.09-0.11	Low	1.0-3.0	0.15	---		
	22-34	10-25	1.30-1.55	0.60-2.00	0.08-0.10	Low	0.5-1.0	0.10	---		
	34-60	15-25	1.35-1.60	0.60-2.00	0.08-0.10	Low	0.0-0.5	0.10	---		
182:											
Winfall---------	0-19	10-20	1.20-1.40	0.60-2.00	0.09-0.12	Low	0.5-2.0	0.10	0.37	3	5
	19-60	10-20	1.40-1.60	0.60-2.00	0.08-0.09	Low	0.0-0.5	0.15	---		

PHYSICAL PROPERTIES OF SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Shrink-swell potential	Organic matter	Erosion factors K	Erosion factors Kf	Erosion factors T	Wind erodi-bility group
	In	Pct	g/cc	In/hr	In/in		Pct				
183:											
Winfall---------	0-15	10-20	1.20-1.40	0.60-2.00	0.09-0.12	Low	0.5-2.0	0.10	0.37	3	5
	15-60	10-20	1.40-1.60	0.60-2.00	0.08-0.09	Low	0.0-0.5	0.15	---		
184:											
Winfall---------	0-15	10-20	1.20-1.40	0.60-2.00	0.09-0.12	Low	0.5-2.0	0.10	0.37	3	5
	15-60	10-20	1.40-1.60	0.60-2.00	0.08-0.09	Low	0.0-0.5	0.15	---		
185:											
Winkler---------	0-4	7-15	1.20-1.40	2.00-6.00	0.07-0.09	Low	2.0-4.0	0.05	0.37	3	5
	4-24	5-15	1.40-1.60	2.00-6.00	0.05-0.06	Low	0.5-1.0	0.05	---		
	24-60	5-15	1.40-1.60	2.00-6.00	0.04-0.05	Low	0.0-0.5	0.05	---		
Rock outcrop.											
186:											
Winkler---------	0-4	7-15	1.20-1.40	2.00-6.00	0.07-0.09	Low	2.0-4.0	0.05	0.37	3	5
	4-24	5-15	1.40-1.60	2.00-6.00	0.05-0.06	Low	0.5-1.0	0.05	---		
	24-60	5-15	1.40-1.60	2.00-6.00	0.04-0.05	Low	0.0-0.5	0.05	---		
187:											
Winkler---------	0-4	7-15	1.20-1.40	2.00-6.00	0.07-0.09	Low	2.0-4.0	0.05	0.37	3	5
	4-24	5-15	1.40-1.60	2.00-6.00	0.05-0.06	Low	0.5-1.0	0.05	---		
	24-60	5-15	1.40-1.60	2.00-6.00	0.04-0.05	Low	0.0-0.5	0.05	---		
Sharrott--------	0-4	10-15	1.20-1.40	0.60-2.00	0.09-0.11	Low	0.5-2.0	0.10	0.37	1	5
	4-11	10-15	1.30-1.50	0.60-2.00	0.09-0.11	Low	0.5-1.0	0.10	---		
	11-19	10-15	1.30-1.55	0.60-2.00	0.04-0.05	Low	0.0-0.5	0.10	---		
	19-60	---	---	---	---	---	---	---	---		
Rock outcrop.											
188:											
Xerofluvents.											
189:											
Xerofluvents.											
190:											
Yellowbay-------	0-3	7-15	1.15-1.35	2.00-6.00	0.08-0.11	Low	3.0-5.0	0.02	0.37	3	5
	3-22	5-10	1.35-1.60	2.00-6.00	0.04-0.05	Low	0.5-2.0	0.05	---		
	22-60	2-5	1.40-1.60	6.00-20.00	0.03-0.04	Low	0.0-0.5	0.02	---		
191:											
Yellowbay-------	0-8	7-15	1.15-1.35	2.00-6.00	0.08-0.11	Low	3.0-5.0	0.02	0.37	3	5
	8-18	5-10	1.35-1.60	2.00-6.00	0.04-0.05	Low	0.5-2.0	0.05	---		
	18-60	2-5	1.40-1.60	6.00-20.00	0.03-0.04	Low	0.0-0.5	0.02	---		
192:											
Yellowbay-------	0-4	7-15	1.15-1.35	2.00-6.00	0.08-0.11	Low	3.0-5.0	0.02	0.37	3	5
	4-14	5-10	1.35-1.60	2.00-6.00	0.04-0.05	Low	0.5-2.0	0.05	---		
	14-60	2-5	1.40-1.60	6.00-20.00	0.03-0.04	Low	0.0-0.5	0.02	---		

CHEMICAL PROPERTIES OF THE SOILS

(Absence of an entry indicates that the data were not available or were not estimated.)

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
1: Aeric Haplaquepts.							
2: Badland.							
3:							
Bata----------	0-9	5-15	25.0-30.0	5.1-6.5	---	---	---
	9-25	12-25	10.0-15.0	5.6-6.5	---	---	---
	25-60	20-35	10.0-15.0	5.6-6.5	---	---	---
4:							
Bata----------	0-9	5-15	25.0-30.0	5.1-6.5	---	---	---
	9-25	12-25	10.0-15.0	5.6-6.5	---	---	---
	25-60	20-35	10.0-15.0	5.6-6.5	---	---	---
5:							
Belton----------	0-8	18-27	10.0-15.0	6.6-7.3	---	---	---
	8-10	27-40	10.0-15.0	6.6-7.8	---	---	5-10
	10-19	35-60	10.0-15.0	8.5-9.0	---	2-4	13-40
	19-29	30-55	10.0-15.0	8.5-9.0	10-15	2-4	13-30
	29-60	20-40	5.0-10.0	7.9-9.0	5-10	2-4	10-30
6:							
Belton----------	0-9	18-27	10.0-15.0	6.6-7.3	---	---	---
	9-14	35-60	10.0-15.0	8.5-9.0	---	2-4	13-40
	14-20	30-55	10.0-15.0	8.5-9.0	10-15	2-4	13-30
	20-60	20-40	5.0-10.0	7.9-9.0	5-10	2-4	10-30
7:							
Belton----------	0-9	18-27	10.0-15.0	6.6-7.3	---	---	---
	9-14	35-60	10.0-15.0	8.5-9.0	---	2-4	13-40
	14-20	30-55	10.0-15.0	8.5-9.0	10-15	2-4	13-30
	20-60	20-40	5.0-10.0	7.9-9.0	5-10	2-4	10-30
8:							
Belton----------	0-8	18-27	10.0-15.0	6.6-7.3	---	---	---
	8-10	27-40	10.0-15.0	6.6-7.8	---	---	5-10
	10-19	35-60	10.0-15.0	8.5-9.0	---	2-4	13-40
	19-29	30-55	10.0-15.0	8.5-9.0	10-15	2-4	13-30
	29-60	20-40	5.0-10.0	7.9-9.0	5-10	2-4	10-30
Kerl----------	0-7	18-27	15.0-20.0	6.6-7.3	---	---	---
	7-20	18-27	10.0-15.0	6.6-8.4	---	---	---
	20-60	18-30	10.0-15.0	7.9-9.0	5-15	0-2	---
9:							
Belton----------	0-9	18-27	10.0-15.0	6.6-7.3	---	---	---
	9-13	35-60	10.0-15.0	8.5-9.0	---	2-4	13-40
	13-29	30-55	10.0-15.0	8.5-9.0	10-15	2-4	13-30
	29-60	20-40	5.0-10.0	7.9-9.0	5-10	2-4	10-30
Kerl----------	0-7	18-27	15.0-20.0	6.6-7.3	---	---	---
	7-20	18-27	10.0-15.0	6.6-8.4	---	---	---
	20-60	18-30	10.0-15.0	7.9-9.0	5-15	0-2	---
10:							
Bigarm----------	0-10	7-18	10.0-15.0	6.6-7.3	---	---	---
	10-16	5-18	5.0-10.0	6.6-7.3	---	---	---
	16-60	5-18	5.0-10.0	6.6-7.3	---	---	---
11:							
Bigarm----------	0-9	7-18	10.0-15.0	6.6-7.3	---	---	---
	9-18	5-18	5.0-10.0	6.6-7.3	---	---	---
	18-60	5-18	5.0-10.0	6.6-7.3	---	---	---
12:							
Bigarm----------	0-12	7-18	10.0-15.0	6.6-7.3	---	---	---
	12-22	5-18	5.0-10.0	6.6-7.3	---	---	---
	22-60	5-18	5.0-10.0	6.6-7.3	---	---	---
13:							
Bigarm----------	0-10	7-18	10.0-15.0	6.6-7.3	---	---	---
	10-24	5-18	5.0-10.0	6.6-7.3	---	---	---
	24-39	5-18	5.0-10.0	6.6-7.3	---	---	---
	39-60	5-18	2.0-5.0	6.6-7.3	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
13 (con.):							
Hogsby----------	0-5	10-20	5.0-15.0	6.6-7.3	---	---	---
	5-18	10-20	5.0-10.0	6.6-7.3	---	---	---
	18-60	---	---	---	---	---	---
Rock outcrop.							
14:							
Bigarm----------	0-10	7-18	10.0-15.0	6.6-7.3	---	---	---
	10-16	5-18	5.0-10.0	6.6-7.3	---	---	---
	16-60	5-18	2.0-5.0	6.6-7.3	---	---	---
Rubble land.							
15:							
Bigarm----------	0-12	7-18	10.0-15.0	6.6-7.3	---	---	---
	12-18	5-18	5.0-10.0	6.6-7.3	---	---	---
	18-38	5-18	5.0-10.0	6.6-7.3	---	---	---
	38-60	5-18	2.0-5.0	6.6-7.3	---	---	---
Hogsby----------	0-6	10-20	5.0-15.0	6.6-7.3	---	---	---
	6-15	10-20	5.0-10.0	6.6-7.3	---	---	---
	15-60	---	---	---	---	---	---
Rock outcrop.							
16:							
Bigarm----------	0-12	7-18	10.0-15.0	6.6-7.3	---	---	---
	12-18	5-18	5.0-10.0	6.6-7.3	---	---	---
	18-60	5-18	2.0-5.0	6.6-7.3	---	---	---
Rock outcrop.							
Rubble land.							
17:							
Bohnly----------	0-8	18-27	20.0-25.0	6.6-7.8	---	---	---
	8-36	18-27	15.0-20.0	6.6-7.8	---	---	---
	36-46	18-32	15.0-20.0	6.6-7.8	---	---	---
	46-60	5-15	5.0-10.0	6.6-7.8	---	---	---
18:							
Bolack----------	0-10	18-27	20.0-25.0	6.6-7.3	---	---	---
	10-14	27-45	20.0-25.0	6.6-7.3	---	---	---
	14-44	40-60	20.0-25.0	7.4-7.8	---	---	---
	44-60	40-60	15.0-20.0	7.4-8.4	---	---	---
19:							
Borohemists.							
20:							
Bowlake---------	0-9	20-27	15.0-20.0	6.6-7.8	---	---	---
	9-11	30-40	10.0-15.0	6.6-7.8	---	---	---
	11-19	35-60	15.0-20.0	7.4-8.4	---	0-2	---
	19-22	30-45	10.0-15.0	7.4-8.4	5-15	0-2	---
	22-60	20-45	10.0-15.0	7.9-8.4	1-5	0-2	---
21:							
Bowlake---------	0-11	20-27	15.0-20.0	6.6-7.8	---	---	---
	11-19	30-40	10.0-15.0	6.6-7.8	---	---	---
	19-32	35-60	15.0-20.0	7.4-8.4	---	0-2	---
	32-51	30-45	10.0-15.0	7.4-8.4	5-15	0-2	---
	51-60	20-45	10.0-15.0	7.9-8.4	1-5	0-2	---
Minesinger------	0-14	18-27	15.0-20.0	6.6-7.3	---	---	---
	14-24	18-27	15.0-20.0	6.6-7.3	---	---	---
	24-32	18-35	10.0-15.0	6.6-7.3	---	---	---
	32-39	35-50	15.0-20.0	6.6-7.8	---	---	---
	39-60	27-40	10.0-15.0	7.4-8.4	3-8	0-2	---
22:							
Colake----------	0-10	18-27	10.0-25.0	7.4-8.4	5-10	---	---
	10-19	18-27	5.0-10.0	7.4-8.4	15-40	---	---
	19-60	18-27	5.0-10.0	7.4-8.4	10-30	---	---
23:							
Colake----------	0-10	18-27	10.0-25.0	7.4-8.4	5-10	---	---
	10-19	18-27	5.0-10.0	7.4-8.4	15-40	---	---
	19-60	18-27	5.0-10.0	7.4-8.4	10-30	---	---

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
24:							
Colake----------	0-10	18-27	10.0-25.0	7.4-8.4	5-10	---	---
	10-19	18-27	5.0-10.0	7.4-8.4	15-40	---	---
	19-60	18-27	5.0-10.0	7.4-8.4	10-30	---	---
Sacheen---------	0-4	3-8	5.0-10.0	6.1-7.3	---	---	---
	4-60	3-8	5.0-10.0	6.1-7.3	---	---	---
25:							
Connah----------	0-6	10-27	10.0-15.0	5.6-6.5	---	0-2	---
	6-12	35-45	10.0-15.0	5.6-6.5	---	0-2	---
	12-38	40-60	10.0-15.0	5.6-7.3	---	0-2	---
	38-60	35-50	10.0-15.0	7.4-8.4	5-15	0-2	---
26:							
Connah----------	0-7	10-27	10.0-15.0	5.6-6.5	---	0-2	---
	7-14	35-45	10.0-15.0	5.6-6.5	---	0-2	---
	14-34	40-60	10.0-15.0	5.6-7.3	---	0-2	---
	34-60	35-50	10.0-15.0	7.4-8.4	5-15	0-2	---
27:							
Connah----------	0-7	27-35	15.0-20.0	5.6-6.5	---	0-2	---
	7-13	35-45	10.0-15.0	5.6-6.5	---	0-2	---
	13-32	40-60	10.0-15.0	5.6-7.3	---	0-2	---
	32-60	35-50	10.0-15.0	7.4-8.4	5-15	0-2	---
Water.							
28:							
Courville-------	0-14	7-15	25.0-30.0	5.6-6.5	---	---	---
	14-32	5-18	5.0-10.0	5.6-7.3	---	---	---
	32-60	10-25	5.0-10.0	5.6-7.3	---	---	---
29:							
Courville-------	0-14	7-15	25.0-30.0	5.6-6.5	---	---	---
	14-32	5-18	5.0-10.0	5.6-7.3	---	---	---
	32-60	10-25	5.0-10.0	5.6-7.3	---	---	---
30:							
Courville-------	0-13	7-15	25.0-30.0	5.6-6.5	---	---	---
	13-32	5-18	5.0-10.0	5.6-7.3	---	---	---
	32-60	10-25	5.0-10.0	5.6-7.3	---	---	---
31:							
Courville-------	0-9	7-15	25.0-30.0	5.6-6.5	---	---	---
	9-19	5-18	5.0-10.0	5.6-7.3	---	---	---
	19-60	10-25	5.0-10.0	5.6-7.3	---	---	---
32:							
Courville-------	0-9	7-15	25.0-30.0	5.6-6.5	---	---	---
	9-19	5-18	5.0-10.0	5.6-7.3	---	---	---
	19-60	10-25	5.0-10.0	5.6-7.3	---	---	---
33:							
Courville-------	0-9	7-15	25.0-30.0	5.6-6.5	---	---	---
	9-19	5-18	5.0-10.0	5.6-7.3	---	---	---
	19-60	10-25	5.0-10.0	5.6-7.3	---	---	---
34:							
Courville-------	0-14	7-15	25.0-30.0	5.6-6.5	---	---	---
	14-32	5-18	5.0-10.0	5.6-7.3	---	---	---
	32-60	10-25	5.0-10.0	5.6-7.3	---	---	---
Rumblecreek-----	0-12	10-20	10.0-15.0	5.1-7.3	---	---	---
	12-18	10-20	10.0-15.0	5.1-7.3	---	---	---
	18-22	20-35	10.0-15.0	5.6-6.5	---	---	---
	22-60	20-35	10.0-15.0	5.6-6.5	---	---	---
35:							
Craddock--------	0-12	5-10	25.0-30.0	5.6-6.5	---	---	---
	12-20	5-10	5.0-10.0	5.6-6.5	---	---	---
	20-60	5-10	5.0-10.0	5.6-6.5	---	---	---
36:							
Craddock--------	0-10	5-10	25.0-30.0	5.6-6.5	---	---	---
	10-33	5-10	5.0-10.0	5.6-6.5	---	---	---
	33-60	5-10	5.0-10.0	5.6-6.5	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
37:							
Craddock--------	0-10	5-10	25.0-30.0	5.6-6.5	---	---	---
	10-33	5-10	5.0-10.0	5.6-6.5	---	---	---
	33-60	5-10	5.0-10.0	5.6-6.5	---	---	---
38:							
Doker----------	0-7	18-27	25.0-30.0	6.1-7.3	---	---	---
	7-15	5-10	25.0-30.0	6.1-7.3	---	---	---
	15-60	8-18	1.0-5.0	6.1-7.3	---	---	---
39:							
Dryfork---------	0-10	10-15	10.0-15.0	6.6-7.3	---	0-2	4-13
	10-16	10-18	5.0-10.0	7.9-9.0	---	2-4	13-40
	16-31	5-18	5.0-10.0	7.8-9.6	5-15	2-4	13-40
	31-60	5-18	1.0-5.0	7.8-9.6	5-10	0-4	4-30
40:							
Dryfork---------	0-10	10-15	10.0-15.0	6.6-7.3	---	0-2	4-13
	10-16	10-18	5.0-10.0	7.9-9.0	---	2-4	13-40
	16-31	5-18	5.0-10.0	7.8-9.6	5-15	2-4	13-40
	31-60	5-18	1.0-5.0	7.8-9.6	5-10	0-4	4-30
Selow----------	0-8	27-35	10.0-15.0	6.6-7.8	---	0-2	4-13
	8-14	27-35	10.0-15.0	7.9-9.0	---	1-4	13-40
	14-20	27-40	10.0-15.0	8.5-9.0	5-10	1-4	13-40
	20-28	0-10	1.0-5.0	7.4-9.0	5-10	0-2	4-30
	28-60	0-10	1.0-5.0	7.4-9.0	1-5	0-2	4-25
41:							
Dryfork---------	0-10	10-15	10.0-15.0	6.6-7.3	---	0-2	4-13
	10-16	10-18	5.0-10.0	7.9-9.0	---	2-4	13-40
	16-31	5-18	5.0-10.0	7.8-9.6	5-15	2-4	13-40
	31-60	5-18	1.0-5.0	7.8-9.6	5-10	0-4	4-30
Selow----------	0-9	27-35	10.0-15.0	6.6-7.8	---	0-2	4-13
	9-14	27-35	10.0-15.0	7.9-9.0	---	1-4	13-40
	14-20	27-40	10.0-15.0	8.5-9.0	5-10	1-4	13-40
	20-28	0-10	1.0-5.0	7.4-9.0	5-10	0-2	4-30
	28-60	0-10	1.0-5.0	7.4-9.0	1-5	0-2	4-25
42:							
Dubay----------	0-5	10-18	10.0-15.0	6.1-7.3	---	---	---
	5-30	5-15	5.0-10.0	6.1-7.3	---	---	---
	30-60	5-15	2.0-5.0	6.6-7.8	---	---	---
43:							
Dubay----------	0-5	10-18	10.0-15.0	6.1-7.3	---	---	---
	5-30	5-15	5.0-10.0	6.1-7.3	---	---	---
	30-60	5-15	2.0-5.0	6.6-7.8	---	---	---
44:							
Eaglewing-------	0-11	18-27	15.0-20.0	6.6-7.3	---	---	---
	11-20	18-27	10.0-15.0	6.6-7.3	---	---	---
	20-60	18-27	10.0-15.0	7.9-8.4	20-40	0-2	---
45:							
Eaglewing-------	0-11	18-27	15.0-20.0	6.6-7.3	---	---	---
	11-20	18-27	10.0-15.0	6.6-7.3	---	---	---
	20-36	18-27	10.0-15.0	7.9-8.4	20-40	0-2	---
46:							
Eaglewing-------	0-17	18-27	15.0-20.0	6.6-7.3	---	---	---
	17-26	18-27	10.0-15.0	6.6-7.3	---	---	---
	26-60	18-27	10.0-15.0	7.9-8.4	20-40	0-2	---
47:							
Esteslake-------	0-3	18-35	15.0-20.0	8.5-9.0	5-10	0-4	20-45
	3-12	35-50	10.0-20.0	9.0-9.6	5-10	8-12	45-275
	12-19	35-50	10.0-15.0	9.0-9.6	10-15	8-12	45-275
	19-60	35-50	5.0-10.0	9.0-9.6	5-10	0-4	30-100
Slickspots.							
48:							
Felan----------	0-8	5-15	25.0-30.0	5.1-6.5	---	---	---
	8-16	5-15	15.0-20.0	5.1-7.3	---	---	---
	16-60	5-15	15.0-20.0	6.6-8.4	---	0-2	---

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
49:							
Felan----------	0-7	5-15	25.0-30.0	5.1-6.5	---	---	---
	7-23	5-15	15.0-20.0	5.1-7.3	---	---	---
	23-60	5-15	15.0-20.0	6.6-8.4	---	0-2	---
50:							
Finleypoint-----	0-9	15-25	15.0-20.0	6.1-7.3	---	---	---
	9-30	15-25	15.0-20.0	6.1-7.3	---	---	---
	30-42	10-25	10.0-15.0	6.1-7.3	---	---	---
	42-60	15-25	10.0-15.0	6.1-7.3	---	---	---
51:							
Finleypoint-----	0-9	15-25	15.0-20.0	6.1-7.3	---	---	---
	9-30	15-25	15.0-20.0	6.1-7.3	---	---	---
	30-42	10-25	10.0-15.0	6.1-7.3	---	---	---
	42-60	15-25	10.0-15.0	6.1-7.3	---	---	---
52:							
Finleypoint-----	0-10	15-25	15.0-20.0	6.1-7.3	---	---	---
	10-22	15-25	15.0-20.0	6.1-7.3	---	---	---
	22-34	10-25	10.0-15.0	6.1-7.3	---	---	---
	34-60	15-25	10.0-15.0	6.1-7.3	---	---	---
53:							
Finleypoint-----	0-10	15-25	15.0-20.0	6.1-7.3	---	---	---
	10-22	15-25	15.0-20.0	6.1-7.3	---	---	---
	22-34	10-25	10.0-15.0	6.1-7.3	---	---	---
	34-60	15-25	10.0-15.0	6.1-7.3	---	---	---
54:							
Finleypoint-----	0-8	15-25	15.0-20.0	6.1-7.3	---	---	---
	8-30	15-25	15.0-20.0	6.1-7.3	---	---	---
	30-42	10-25	10.0-15.0	6.1-7.3	---	---	---
	42-60	15-25	10.0-15.0	6.1-7.3	---	---	---
55:							
Finleypoint-----	0-8	15-25	15.0-20.0	6.1-7.3	---	---	---
	8-30	15-25	15.0-20.0	6.1-7.3	---	---	---
	30-42	10-25	10.0-15.0	6.1-7.3	---	---	---
	42-60	15-25	10.0-15.0	6.1-7.3	---	---	---
56:							
Finleypoint-----	0-10	15-25	15.0-20.0	6.1-7.3	---	---	---
	10-13	15-25	15.0-20.0	6.1-7.3	---	---	---
	13-34	10-25	10.0-15.0	6.1-7.3	---	---	---
	34-60	15-25	10.0-15.0	6.1-7.3	---	---	---
Wildgen---------	0-6	15-25	15.0-20.0	6.1-7.3	---	---	---
	6-17	15-25	10.0-15.0	6.1-7.3	---	---	---
	17-60	10-25	5.0-10.0	6.1-7.3	---	---	---
57:							
Flott----------	0-10	10-27	15.0-20.0	6.1-7.3	---	---	---
	10-23	10-27	15.0-20.0	6.1-7.3	---	---	---
	23-44	18-30	10.0-15.0	6.6-7.8	---	0-2	---
	44-60	18-30	10.0-15.0	7.9-8.4	15-40	0-2	---
58:							
Flott----------	0-10	10-27	15.0-20.0	6.1-7.3	---	---	---
	10-23	10-27	15.0-20.0	6.1-7.3	---	---	---
	23-44	18-30	10.0-15.0	6.6-7.8	---	0-2	---
	44-60	18-30	10.0-15.0	7.9-8.4	15-40	0-2	---
59:							
Flott----------	0-8	10-27	15.0-20.0	6.1-7.3	---	---	---
	8-18	10-27	15.0-20.0	6.1-7.3	---	---	---
	18-32	18-30	10.0-15.0	6.6-7.8	---	0-2	---
	32-60	18-30	10.0-15.0	7.9-8.4	15-40	0-2	---
60:							
Flott----------	0-13	10-27	15.0-20.0	6.1-7.3	---	---	---
	13-18	10-27	15.0-20.0	6.1-7.3	---	---	---
	18-23	18-30	10.0-15.0	6.6-7.8	---	0-2	---
	23-60	18-30	10.0-15.0	7.9-8.4	15-40	0-2	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
61:							
Flott----------	0-10	10-27	15.0-20.0	6.1-7.3	---	---	---
	10-18	10-27	15.0-20.0	6.1-7.3	---	---	---
	18-23	18-30	10.0-15.0	6.6-7.8	---	0-2	---
	23-60	18-30	10.0-15.0	7.9-8.4	15-40	0-2	---
62:							
Gardencreek-----	0-6	27-35	20.0-25.0	6.6-7.8	0-1	0-2	0-4
	6-20	30-40	25.0-30.0	6.6-7.8	0-1	0-2	1-5
	20-60	35-60	25.0-30.0	7.4-8.4	0-1	0-2	5-10
63:							
Gird----------	0-10	10-18	15.0-20.0	6.6-7.3	---	---	---
	10-17	10-18	10.0-15.0	6.6-7.8	---	---	---
	17-60	10-18	10.0-15.0	7.4-8.4	3-10	0-2	---
64:							
Gird----------	0-8	10-18	15.0-20.0	6.6-7.3	---	---	---
	8-20	10-18	10.0-15.0	6.6-7.8	---	---	---
	20-60	10-18	10.0-15.0	7.4-8.4	3-10	0-2	---
65:							
Gird----------	0-8	10-18	15.0-20.0	6.6-7.3	---	0-4	---
	8-28	10-18	10.0-15.0	6.6-7.8	---	0-4	---
	28-60	10-18	10.0-15.0	7.4-8.4	3-10	0-4	---
Dryfork---------	0-13	10-15	10.0-15.0	7.4-7.8	---	0-2	4-13
	13-24	10-18	5.0-10.0	7.9-9.0	---	2-4	13-40
	24-60	5-18	1.0-5.0	7.9-9.0	5-10	2-4	4-30
66:							
Gird----------	0-8	10-18	15.0-20.0	6.6-7.3	---	---	---
	8-17	10-18	10.0-15.0	6.6-7.8	---	---	---
	17-60	10-18	10.0-15.0	7.4-8.4	3-10	0-2	---
Vincom----------	0-5	15-27	10.0-15.0	7.9-8.4	---	0-2	0-13
	5-22	18-35	10.0-15.0	8.4-9.6	2-8	0-2	0-20
	22-60	18-35	5.0-10.0	8.4-9.6	1-5	0-2	0-20
67:							
Gird----------	0-7	10-18	15.0-20.0	6.6-7.3	---	---	---
	7-29	10-18	10.0-15.0	6.6-7.8	---	---	---
	29-60	10-18	10.0-15.0	7.4-8.4	3-10	0-2	---
Vincom----------	0-5	15-27	10.0-15.0	7.9-8.4	---	0-2	0-13
	5-22	18-35	10.0-15.0	8.4-9.6	2-8	0-2	0-20
	22-60	18-35	5.0-10.0	8.4-9.6	1-5	0-2	0-20
68:							
Glaciercreek----	0-11	5-15	20.0-25.0	5.6-7.3	---	---	---
	11-60	0-10	1.0-5.0	5.6-7.3	---	---	---
69:							
Half Moon-------	0-11	15-25	15.0-20.0	4.5-7.3	---	---	---
	11-16	25-35	15.0-20.0	6.1-7.8	---	---	---
	16-26	25-35	10.0-15.0	6.1-7.8	---	0-4	---
	26-60	20-30	5.0-10.0	7.4-9.0	5-15	0-4	---
70:							
Half Moon-------	0-11	15-25	15.0-20.0	4.5-7.3	---	---	---
	11-31	25-35	15.0-20.0	6.1-7.8	---	---	---
	31-60	25-30	10.0-15.0	7.4-9.0	5-15	0-4	---
Courville-------	0-14	7-15	25.0-30.0	5.6-6.5	---	---	---
	14-32	5-18	5.0-10.0	5.6-7.3	---	---	---
	32-60	10-25	5.0-10.0	5.6-7.3	---	---	---
71:							
Hogsby----------	0-8	10-20	5.0-15.0	6.6-7.3	---	---	---
	8-13	10-20	5.0-10.0	6.6-7.3	---	---	---
	13-60	---	---	---	---	---	---
Finleypoint-----	0-13	15-25	15.0-20.0	6.1-7.3	---	---	---
	13-30	10-25	10.0-15.0	6.1-7.3	---	---	---
	30-60	15-25	10.0-15.0	6.1-7.3	---	---	---

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
72:							
Hogsby----------	0-5	10-20	5.0-15.0	6.6-7.3	---	---	---
	5-18	10-20	5.0-10.0	6.6-7.3	---	---	---
	18-60	---	---	---	---	---	---
Rock outcrop.							
73:							
Holloway--------	0-9	5-15	25.0-30.0	5.1-6.5	---	---	---
	9-25	5-15	10.0-15.0	5.1-6.5	---	---	---
	25-60	5-15	5.0-10.0	5.1-6.5	---	---	---
74:							
Holloway--------	0-10	5-15	25.0-30.0	5.1-6.5	---	---	---
	10-26	5-15	10.0-15.0	5.1-6.5	---	---	---
	26-60	5-15	5.0-10.0	5.1-6.5	---	---	---
75:							
Holloway--------	0-9	5-15	25.0-30.0	5.1-6.5	---	---	---
	9-20	5-15	10.0-15.0	5.1-6.5	---	---	---
	20-46	5-15	5.0-10.0	5.1-6.5	---	---	---
	46-60	5-15	5.0-10.0	5.1-6.5	---	---	---
76:							
Holloway--------	0-9	5-15	25.0-30.0	5.1-6.5	---	---	---
	9-20	5-15	10.0-15.0	5.1-6.5	---	---	---
	20-60	5-15	5.0-10.0	5.1-6.5	---	---	---
77:							
Holloway--------	0-10	5-15	25.0-30.0	5.1-6.5	---	---	---
	10-17	5-15	10.0-15.0	5.1-6.5	---	---	---
	17-60	5-15	5.0-10.0	5.1-6.5	---	---	---
Rock outcrop.							
78:							
Holloway--------	0-9	5-15	25.0-30.0	5.1-6.5	---	---	---
	9-17	5-15	10.0-15.0	5.1-6.5	---	---	---
	17-60	5-15	5.0-10.0	5.1-6.5	---	---	---
Rubble land.							
79:							
Irvine----------	0-8	40-50	15.0-20.0	7.4-8.4	5-10	0-4	3-13
	8-14	35-50	10.0-15.0	7.9-8.4	5-10	4-8	8-13
	14-60	35-50	10.0-15.0	7.9-9.0	5-10	4-8	8-13
80:							
Irvine----------	0-8	40-50	10.0-15.0	7.4-8.4	5-10	0-4	3-13
	8-14	35-50	10.0-15.0	7.9-8.4	5-10	4-8	8-13
	14-60	35-50	10.0-15.0	7.9-9.0	5-10	4-8	8-13
81:							
Jocko----------	0-13	10-25	10.0-15.0	6.1-7.3	---	---	---
	13-19	5-15	5.0-10.0	6.6-7.8	---	---	---
	19-25	0-5	1.0-5.0	6.6-7.8	---	---	---
	25-60	0-5	1.0-5.0	6.6-7.8	3-15	---	---
82:							
Jocko----------	0-7	10-25	10.0-15.0	6.1-7.3	---	---	---
	7-16	5-15	5.0-10.0	6.6-7.8	---	---	---
	16-22	0-5	1.0-5.0	6.6-7.8	---	---	---
	22-60	0-5	1.0-5.0	6.6-7.8	3-15	---	---
83:							
Jocko----------	0-7	10-18	10.0-15.0	6.1-7.3	---	---	---
	7-18	5-15	5.0-10.0	6.6-7.8	---	---	---
	18-60	0-5	1.0-5.0	6.6-7.8	3-15	---	---
84:							
Kerl----------	0-7	18-27	15.0-20.0	6.6-7.3	---	---	---
	7-20	18-27	10.0-15.0	6.6-8.4	---	---	---
	20-60	18-30	10.0-15.0	7.9-8.4	5-15	0-2	---
85:							
Kerl----------	0-7	18-27	15.0-20.0	6.6-7.3	---	---	---
	7-20	18-27	10.0-15.0	6.6-8.4	---	---	---
	20-60	18-30	10.0-15.0	7.9-9.0	5-15	0-2	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
86:							
Kerrdam---------	0-5	5-15	5.0-10.0	6.6-7.3	---	---	---
	5-12	5-15	5.0-10.0	6.6-7.8	---	---	---
	12-34	0-15	2.0-5.0	7.4-8.4	5-15	0-2	---
	34-60	0-5	1.0-5.0	7.4-8.4	2-10	0-2	13-20
87:							
Kerrdam---------	0-5	5-15	5.0-10.0	6.6-7.3	---	---	---
	5-12	5-15	5.0-10.0	6.6-7.8	---	---	---
	12-34	0-15	2.0-5.0	7.4-8.4	5-15	0-2	---
	34-60	0-5	1.0-5.0	7.4-8.4	2-10	0-2	13-20
88:							
Kerrdam---------	0-5	5-15	5.0-10.0	6.6-7.3	---	---	---
	5-12	5-15	5.0-10.0	6.6-7.8	---	---	---
	12-34	0-15	2.0-5.0	7.4-8.4	5-15	0-2	---
	34-60	0-5	1.0-5.0	7.4-8.4	2-10	0-2	13-20
Vincom----------	0-5	15-27	10.0-15.0	7.9-8.4	---	0-2	0-13
	5-22	18-35	10.0-15.0	8.4-9.6	2-8	0-2	0-20
	22-60	18-35	5.0-10.0	8.4-9.6	1-5	0-2	0-20
89:							
Kerrdam---------	0-8	5-15	5.0-10.0	6.6-7.3	---	---	---
	8-12	5-15	5.0-10.0	6.6-7.8	---	---	---
	12-34	0-15	2.0-5.0	7.4-8.4	5-15	0-2	---
	34-60	0-5	1.0-5.0	7.4-8.4	2-10	0-2	13-20
Vincom----------	0-5	15-27	10.0-15.0	7.9-8.4	---	0-2	0-13
	5-22	18-35	10.0-15.0	8.4-9.6	2-8	0-2	0-20
	22-60	18-35	5.0-10.0	8.4-9.6	1-5	0-2	0-20
90:							
Kingspoint------	0-17	15-27	10.0-15.0	6.6-7.3	---	---	---
	17-33	15-27	10.0-15.0	6.6-7.3	---	---	---
	33-60	15-27	5.0-10.0	7.4-8.4	5-15	0-2	---
91:							
Kingspoint------	0-11	15-27	10.0-15.0	6.6-7.3	---	---	---
	11-22	15-27	10.0-15.0	6.6-7.3	---	---	---
	22-60	15-27	5.0-10.0	7.4-8.4	5-15	0-2	---
92:							
Kingspoint------	0-5	15-27	10.0-15.0	6.6-7.3	---	---	---
	5-17	15-27	10.0-15.0	6.6-7.3	---	---	---
	17-60	15-27	5.0-10.0	7.4-8.4	5-15	0-2	---
93:							
Lamoose---------	0-7	18-27	15.0-20.0	7.4-8.4	5-10	0-2	---
	7-19	18-27	10.0-15.0	6.6-7.8	5-10	---	---
	19-60	0-10	1.0-5.0	6.6-7.8	1-5	---	---
94:							
Lonepine--------	0-6	12-25	10.0-15.0	6.6-7.3	---	---	---
	6-14	18-35	10.0-15.0	6.6-7.3	---	---	---
	14-60	18-35	5.0-10.0	7.9-8.4	10-15	0-4	---
95:							
Lonepine--------	0-6	12-25	10.0-15.0	6.6-7.3	---	---	---
	6-14	18-35	10.0-15.0	6.6-7.3	---	---	---
	14-60	18-35	5.0-10.0	7.9-8.4	10-15	0-4	---
96:							
Lonepine--------	0-6	12-25	10.0-15.0	6.6-7.3	---	---	---
	6-14	18-35	10.0-15.0	6.6-7.3	---	---	---
	14-60	18-35	5.0-10.0	7.9-8.4	10-15	0-4	---
97:							
Lonepine--------	0-6	12-25	10.0-15.0	6.6-7.3	---	---	---
	6-14	18-35	10.0-15.0	6.6-7.3	---	---	---
	14-60	18-35	5.0-10.0	7.9-8.4	10-15	0-4	---
Vincom----------	0-5	15-27	10.0-15.0	7.9-8.4	---	0-2	0-13
	5-22	18-35	10.0-15.0	8.4-9.6	2-8	0-2	0-20
	22-60	18-35	5.0-10.0	8.4-9.6	1-5	0-2	0-20

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
98:							
Lonepine--------	0-6	12-25	10.0-15.0	6.6-7.3	---	---	---
	6-14	18-35	10.0-15.0	6.6-7.3	---	---	---
	14-60	18-35	5.0-10.0	7.9-8.4	10-15	0-4	---
Vincom----------	0-5	15-27	10.0-15.0	7.9-8.4	---	0-2	0-13
	5-22	18-35	10.0-15.0	8.4-9.6	2-8	0-2	0-20
	22-60	18-35	5.0-10.0	8.4-9.6	1-5	0-2	0-20
99:							
Marklepass------	0-9	27-40	15.0-20.0	8.4-9.6	---	0-4	13-75
	9-14	27-40	10.0-15.0	8.4-9.6	---	0-4	45-75
	14-20	35-50	10.0-15.0	8.4-9.6	---	0-4	45-120
	20-60	35-50	10.0-15.0	8.4-9.6	5-10	0-8	13-100
100:							
Marklepass------	0-9	27-40	15.0-20.0	8.4-9.6	---	0-4	13-75
	9-14	27-40	10.0-15.0	8.4-9.6	---	0-4	45-75
	14-20	35-50	10.0-15.0	8.4-9.6	---	0-4	45-120
	20-60	35-50	10.0-15.0	8.4-9.6	5-10	0-8	13-100
Slickspots.							
101:							
McCollum--------	0-7	8-18	10.0-15.0	6.1-7.3	---	---	---
	7-29	8-18	5.0-10.0	6.1-7.3	---	---	---
	29-60	8-18	5.0-10.0	6.6-7.8	---	0-2	---
102:							
McCollum--------	0-7	8-18	10.0-15.0	6.1-7.3	---	---	---
	7-29	8-18	5.0-10.0	6.1-7.3	---	---	---
	29-60	8-18	5.0-10.0	6.6-7.8	---	0-2	---
103:							
McCollum--------	0-7	8-18	10.0-15.0	6.1-7.3	---	---	---
	7-29	8-18	5.0-10.0	6.1-7.3	---	---	---
	29-60	8-18	5.0-10.0	6.6-7.8	---	0-2	---
104:							
McCollum--------	0-7	8-18	10.0-15.0	6.1-7.3	---	---	---
	7-29	8-18	5.0-10.0	6.1-7.3	---	---	---
	29-42	8-18	5.0-10.0	6.6-7.8	---	0-2	---
	42-60	5-15	2.0-5.0	6.6-7.8	---	0-2	---
105:							
McDonald--------	0-10	27-35	25.0-30.0	6.1-7.3	---	---	---
	10-14	15-27	10.0-15.0	6.6-7.3	---	---	---
	14-42	40-60	15.0-20.0	6.6-7.3	---	---	---
	42-60	27-35	10.0-15.0	7.4-8.4	5-11	0-2	---
106:							
McDonald--------	0-10	27-35	25.0-30.0	6.1-7.3	---	---	---
	10-18	15-27	10.0-15.0	6.6-7.3	---	---	---
	18-40	40-60	15.0-20.0	6.6-7.3	---	---	---
	40-60	27-35	10.0-15.0	7.4-8.4	5-11	0-2	---
107:							
McDonald--------	0-13	27-35	25.0-30.0	6.1-7.3	---	---	---
	13-17	15-27	10.0-15.0	6.6-7.3	---	---	---
	17-33	40-60	15.0-20.0	6.6-7.3	---	---	---
	33-60	27-35	10.0-15.0	7.4-8.4	5-11	0-2	---
108:							
McDonald--------	0-10	27-35	25.0-30.0	6.1-7.3	---	---	---
	10-14	15-27	10.0-15.0	6.6-7.3	---	---	---
	14-42	40-60	15.0-20.0	6.6-7.3	---	---	---
	42-60	27-35	10.0-15.0	7.4-8.4	5-11	0-2	---
109:							
Minesinger------	0-6	18-27	15.0-20.0	6.6-7.3	---	---	---
	6-14	18-27	15.0-20.0	6.6-7.3	---	---	---
	14-24	18-35	10.0-15.0	6.6-7.3	---	---	---
	24-39	35-50	15.0-20.0	6.6-7.8	---	---	---
	39-60	27-40	10.0-15.0	7.4-8.4	3-8	0-2	---

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
110:							
Minesinger------	0-6	18-27	15.0-20.0	6.6-7.3	---	---	---
	6-14	18-27	15.0-20.0	6.6-7.3	---	---	---
	14-24	18-35	10.0-15.0	6.6-7.3	---	---	---
	24-39	35-50	15.0-20.0	6.6-7.8	---	---	---
	39-60	27-40	10.0-15.0	7.4-8.4	3-8	0-2	---
Walstead--------	0-8	15-25	15.0-20.0	6.6-7.3	---	---	---
	8-17	15-25	10.0-15.0	6.6-7.3	---	---	---
	17-26	15-25	5.0-10.0	6.6-7.8	---	---	---
	26-60	10-25	5.0-10.0	7.4-8.4	5-30	0-2	---
111:							
Mitten----------	0-12	5-10	20.0-25.0	5.6-6.5	---	---	---
	12-36	5-10	5.0-10.0	5.6-6.5	---	---	---
	36-60	5-10	1.0-5.0	5.6-6.5	---	---	---
112:							
Mitten----------	0-12	5-10	20.0-25.0	5.6-6.5	---	---	---
	12-36	5-10	5.0-10.0	5.6-6.5	---	---	---
	36-60	5-10	1.0-5.0	5.6-6.5	---	---	---
113:							
Mitten----------	0-10	5-10	20.0-25.0	5.6-6.5	---	---	---
	10-36	5-10	5.0-10.0	5.6-6.5	---	---	---
	36-60	5-10	1.0-5.0	5.6-6.5	---	---	---
114:							
Mitten----------	0-10	5-10	20.0-25.0	5.6-6.5	---	---	---
	10-36	5-10	5.0-10.0	5.6-6.5	---	---	---
	36-60	5-10	1.0-5.0	5.6-6.5	---	---	---
Rock outcrop.							
115:							
Moiese----------	0-8	10-22	15.0-20.0	6.1-7.3	---	---	---
	8-13	5-22	5.0-10.0	6.6-7.3	---	---	---
	13-18	5-15	5.0-10.0	6.6-7.8	0-1	---	---
	18-60	0-5	1.0-5.0	7.4-8.4	5-15	0-2	---
116:							
Mollman---------	0-14	10-27	10.0-15.0	6.1-7.3	---	0-2	---
	14-31	10-27	10.0-15.0	6.1-7.3	---	0-2	---
	31-38	15-27	10.0-15.0	7.4-7.8	---	0-2	---
	38-60	15-27	5.0-10.0	7.9-8.4	15-35	0-2	---
117:							
Mollman---------	0-14	10-27	10.0-15.0	6.1-7.3	---	0-2	---
	14-31	10-27	10.0-15.0	6.1-7.3	---	0-2	---
	31-38	15-27	10.0-15.0	7.4-7.8	---	0-2	---
	38-60	15-27	5.0-10.0	7.9-8.4	15-35	0-2	---
118:							
Mollman---------	0-14	10-27	10.0-15.0	6.1-7.3	---	0-2	---
	14-31	10-27	10.0-15.0	6.1-7.3	---	0-2	---
	31-38	15-27	10.0-15.0	7.4-7.8	---	0-2	---
	38-60	15-27	5.0-10.0	7.9-8.4	15-35	0-2	---
119:							
Mollman---------	0-18	10-27	10.0-15.0	6.1-7.3	---	0-2	---
	18-30	15-27	10.0-15.0	7.4-7.8	---	0-2	---
	30-60	15-27	5.0-10.0	7.9-8.4	15-35	0-2	---
120:							
Niarada---------	0-9	15-27	15.0-20.0	6.1-7.3	---	0-2	---
	9-14	15-27	10.0-15.0	6.6-7.8	---	0-2	---
	14-60	10-18	5.0-10.0	7.9-8.4	5-35	0-2	---
121:							
Niarada---------	0-7	15-27	15.0-20.0	6.1-7.3	---	0-2	---
	7-14	15-27	10.0-15.0	6.6-7.8	---	0-2	---
	14-60	10-18	5.0-10.0	7.9-8.4	5-35	0-2	---
122:							
Niarada---------	0-7	15-27	15.0-20.0	6.1-7.3	---	0-2	---
	7-14	15-27	10.0-15.0	6.6-7.8	---	0-2	---
	14-60	10-18	5.0-10.0	7.9-8.4	5-35	0-2	---

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
123:							
Niarada---------	0-7	15-27	15.0-20.0	6.1-7.3	---	0-2	---
	7-14	15-27	15.0-20.0	6.6-7.8	---	0-2	---
	14-18	15-27	10.0-15.0	6.6-7.8	---	0-2	---
	18-60	10-18	5.0-10.0	7.9-8.4	5-35	0-2	---
124:							
Niarada---------	0-7	15-27	15.0-20.0	6.1-7.3	---	0-2	---
	7-14	15-27	15.0-20.0	6.6-7.8	---	0-2	---
	14-18	15-27	10.0-15.0	6.6-7.8	---	0-2	---
	18-60	10-18	5.0-10.0	7.9-8.4	5-35	0-2	---
125:							
Niarada---------	0-10	15-27	15.0-20.0	6.1-7.3	---	0-2	---
	10-22	15-27	10.0-15.0	6.6-7.8	---	0-2	---
	22-60	10-18	5.0-10.0	7.9-8.4	5-35	0-2	---
Kerl----------	0-7	18-27	15.0-20.0	6.6-7.3	---	---	---
	7-20	18-27	10.0-15.0	6.6-8.4	---	---	---
	20-60	18-30	10.0-15.0	7.9-9.0	5-15	0-2	---
126:							
Ninepipe--------	0-10	18-27	15.0-20.0	6.6-7.8	0-5	---	---
	10-28	18-27	15.0-20.0	7.4-8.4	5-10	---	---
	28-41	27-35	15.0-20.0	7.4-8.4	5-10	0-2	---
	41-60	18-35	10.0-15.0	7.4-8.4	5-10	0-2	---
127:							
Phillcher-------	0-11	5-10	25.0-30.0	5.6-6.0	---	---	---
	11-37	0-10	2.0-5.0	5.6-6.0	---	---	---
	37-60	0-10	1.0-5.0	5.6-6.0	---	---	---
128:							
Phillcher-------	0-11	5-10	25.0-30.0	5.6-6.0	---	---	---
	11-37	0-10	2.0-5.0	5.6-6.0	---	---	---
	37-60	0-10	1.0-5.0	5.6-6.0	---	---	---
Rock outcrop.							
129:							
Pits.							
130:							
Polson----------	0-10	15-25	15.0-20.0	7.4-7.8	---	0-2	---
	10-18	18-35	15.0-20.0	7.4-9.0	---	2-4	13-18
	18-60	15-30	10.0-15.0	8.5-9.0	10-15	4-8	15-30
131:							
Polson----------	0-10	15-25	15.0-20.0	7.4-7.8	---	0-2	---
	10-18	18-35	15.0-20.0	7.4-9.0	---	2-4	13-18
	18-60	15-30	10.0-15.0	8.5-9.0	10-15	4-8	15-30
132:							
Polson----------	0-10	15-25	15.0-20.0	7.4-7.8	---	0-2	---
	10-18	18-35	15.0-20.0	7.4-9.0	---	2-4	13-18
	18-60	15-30	10.0-15.0	8.5-9.0	10-15	4-8	15-30
Vincom----------	0-5	15-27	10.0-15.0	7.9-8.4	---	0-2	0-13
	5-22	18-35	10.0-15.0	8.4-9.6	2-8	0-2	0-20
	22-60	18-35	5.0-10.0	8.4-9.6	1-5	0-2	0-20
133:							
Post----------	0-6	20-27	10.0-15.0	6.1-7.3	---	0-2	4-10
	6-9	27-40	10.0-15.0	7.9-9.0	---	0-2	13-20
	9-21	60-80	15.0-20.0	8.5-9.0	---	0-4	15-40
	21-27	60-80	15.0-20.0	7.9-9.0	5-15	2-8	25-45
	27-60	60-70	10.0-15.0	8.5-9.0	5-10	4-8	20-45
134:							
Post----------	0-7	27-35	15.0-20.0	6.1-7.3	---	0-2	4-10
	7-9	27-40	10.0-15.0	7.9-9.0	---	0-2	13-20
	9-20	60-80	15.0-20.0	8.5-9.0	---	0-4	15-40
	20-60	60-80	15.0-20.0	7.9-9.0	5-15	2-8	25-45
135:							
Post----------	0-8	27-35	15.0-20.0	6.1-7.3	---	0-2	4-10
	8-10	27-40	10.0-15.0	7.9-9.0	---	0-2	13-20
	10-21	60-80	15.0-20.0	8.5-9.0	---	0-4	15-40
	21-60	60-80	15.0-20.0	7.9-9.0	5-15	2-8	25-45

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
136:							
Post----------	0-8	20-27	10.0-15.0	6.1-7.3	---	0-2	4-10
	8-13	27-40	10.0-15.0	7.9-9.0	---	0-2	13-20
	13-22	60-80	15.0-20.0	8.5-9.0	---	0-4	15-40
	22-60	60-80	15.0-20.0	7.9-9.0	5-15	2-8	25-45
Ronan----------	0-4	30-40	10.0-15.0	6.6-7.8	---	0-2	2-8
	4-7	60-70	15.0-20.0	7.4-8.4	---	0-2	6-13
	7-16	60-80	15.0-20.0	8.5-9.0	---	0-4	13-22
	16-60	50-75	10.0-15.0	8.5-9.0	8-15	2-8	2-30
Water.							
137:							
Post----------	0-8	20-27	10.0-15.0	6.1-7.3	---	0-2	4-10
	8-13	27-40	10.0-15.0	7.9-9.0	---	0-2	13-20
	13-22	60-80	15.0-20.0	8.5-9.0	---	0-2	15-40
	22-60	60-80	15.0-20.0	7.9-9.0	5-15	2-8	25-45
Ronan----------	0-4	30-40	10.0-15.0	6.6-7.8	---	0-2	2-8
	4-7	60-70	15.0-20.0	7.4-8.4	---	0-2	6-13
	7-16	60-80	15.0-20.0	8.5-9.0	---	0-4	13-22
	16-60	50-75	10.0-15.0	8.5-9.0	8-15	2-8	2-30
Water.							
138:							
Repp----------	0-4	10-20	10.0-15.0	6.1-7.8	0-5	---	---
	4-14	10-20	5.0-10.0	7.4-8.4	5-10	0-2	---
	14-60	10-18	5.0-10.0	7.4-8.4	10-15	0-2	---
139:							
Repp----------	0-12	10-20	10.0-15.0	6.1-7.8	0-5	---	---
	12-25	10-20	5.0-10.0	7.4-8.4	5-10	0-2	---
	25-60	10-18	5.0-10.0	7.4-8.4	10-15	0-2	---
Rock outcrop.							
140:							
Rock outcrop.							
Rubble land.							
141:							
Ronan----------	0-4	30-40	10.0-15.0	6.6-7.8	---	0-2	2-8
	4-7	60-70	15.0-20.0	7.4-8.4	---	0-2	6-13
	7-16	60-80	15.0-20.0	8.5-9.0	---	0-4	13-22
	16-60	50-75	10.0-15.0	8.5-9.0	8-15	2-8	2-30
142:							
Ronan----------	0-4	30-40	10.0-15.0	6.6-7.8	---	0-2	2-8
	4-7	60-70	15.0-20.0	7.4-8.4	---	0-2	6-13
	7-16	60-80	15.0-20.0	8.5-9.0	---	0-4	13-22
	16-60	50-75	10.0-15.0	8.5-9.0	8-15	2-8	2-30
143:							
Ronan----------	0-4	30-40	10.0-15.0	6.6-7.8	---	0-2	2-8
	4-7	60-70	15.0-20.0	7.4-8.4	---	0-2	6-13
	7-16	60-80	15.0-20.0	8.5-9.0	---	0-4	13-22
	16-60	50-75	10.0-15.0	8.5-9.0	8-15	2-8	2-30
144:							
Round Butte-----	0-7	27-35	10.0-15.0	6.5-9.6	---	0-2	3-13
	7-14	35-60	10.0-20.0	7.8-9.6	---	0-4	13-60
	14-44	35-55	5.0-10.0	7.8-9.6	8-15	0-4	13-60
	44-60	30-50	1.0-5.0	7.8-9.6	1-5	0-4	13-60
145:							
Round Butte-----	0-7	27-35	10.0-15.0	6.5-9.6	---	0-2	3-13
	7-14	35-60	10.0-20.0	7.8-9.6	---	0-4	13-60
	14-44	35-55	5.0-10.0	7.8-9.6	8-15	0-4	13-60
	44-60	30-50	1.0-5.0	7.8-9.6	1-5	0-4	13-60
146:							
Round Butte-----	0-7	27-35	10.0-15.0	6.5-9.6	---	0-2	3-13
	7-14	35-60	10.0-20.0	7.8-9.6	---	0-4	13-60
	14-44	35-55	5.0-10.0	7.8-9.6	8-15	0-4	13-60
	44-60	30-50	1.0-5.0	7.8-9.6	1-5	0-4	13-60

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
147:							
Round Butte-----	0-7	27-35	10.0-15.0	6.5-9.6	---	0-2	3-13
	7-14	35-60	10.0-20.0	7.8-9.6	---	0-4	13-60
	14-44	35-55	5.0-10.0	7.8-9.6	8-15	0-4	13-60
	44-60	30-50	1.0-5.0	7.8-9.6	1-5	0-4	13-60
148:							
Round Butte-----	0-7	27-35	10.0-15.0	6.5-9.6	---	0-2	3-13
	7-14	35-60	10.0-20.0	7.8-9.6	---	0-4	13-60
	14-44	35-55	5.0-10.0	7.8-9.6	8-15	0-4	13-60
	44-60	30-50	1.0-5.0	7.8-9.6	1-5	0-4	13-60
Irvine----------	0-5	35-40	10.0-15.0	7.4-8.4	5-10	0-4	3-13
	5-10	35-50	10.0-15.0	7.9-8.4	5-10	4-8	8-13
	10-60	35-50	10.0-15.0	7.9-9.0	5-10	4-8	8-13
149:							
Round Butte-----	0-7	27-35	10.0-15.0	6.5-9.6	---	0-2	3-13
	7-14	35-60	10.0-20.0	7.8-9.6	---	0-4	13-60
	14-44	35-55	5.0-10.0	7.8-9.6	8-15	0-4	13-60
	44-60	30-50	1.0-5.0	7.8-9.6	1-5	0-4	13-60
Irvine----------	0-5	35-40	10.0-15.0	7.4-8.4	5-10	0-4	3-13
	5-10	35-50	10.0-15.0	7.9-8.4	5-10	4-8	8-13
	10-60	35-50	10.0-15.0	7.9-9.0	5-10	4-8	8-13
150:							
Rumblecreek-----	0-8	10-20	10.0-15.0	5.1-7.3	---	---	---
	8-20	10-20	10.0-15.0	5.1-7.3	---	---	---
	20-32	20-35	10.0-15.0	5.6-6.5	---	---	---
	32-60	20-35	10.0-15.0	5.6-6.5	---	---	---
151:							
Rumblecreek-----	0-5	10-20	10.0-15.0	5.1-7.3	---	---	---
	5-18	10-20	10.0-15.0	5.1-7.3	---	---	---
	18-22	20-35	10.0-15.0	5.6-6.5	---	---	---
	22-60	20-35	10.0-15.0	5.6-6.5	---	---	---
152:							
Rumblecreek-----	0-5	10-20	10.0-15.0	5.1-7.3	---	---	---
	5-18	10-20	10.0-15.0	5.1-7.3	---	---	---
	18-22	20-35	10.0-15.0	5.6-6.5	---	---	---
	22-60	20-35	10.0-15.0	5.6-6.5	---	---	---
153:							
Rumblecreek-----	0-5	10-20	10.0-15.0	5.1-7.3	---	---	---
	5-18	10-20	10.0-15.0	5.1-7.3	---	---	---
	18-22	20-35	10.0-15.0	5.6-6.5	---	---	---
	22-60	20-35	10.0-15.0	5.6-6.5	---	---	---
154:							
Sacheen---------	0-4	3-8	5.0-10.0	6.1-7.3	---	---	---
	4-60	3-8	5.0-10.0	6.1-7.3	---	---	---
155:							
Sacheen---------	0-3	3-8	5.0-10.0	6.1-7.3	---	---	---
	3-60	3-8	5.0-10.0	6.1-7.3	---	---	---
156:							
Selon----------	0-7	10-18	10.0-15.0	6.1-7.3	---	---	---
	7-60	10-18	5.0-10.0	6.1-7.3	---	---	---
157:							
Selon----------	0-7	10-18	10.0-15.0	6.1-7.3	---	---	---
	7-60	10-18	5.0-10.0	6.1-7.3	---	---	---
158:							
Selon----------	0-4	10-18	10.0-15.0	6.1-7.3	---	---	---
	4-60	10-18	5.0-10.0	6.1-7.3	---	---	---
159:							
Selon----------	0-8	10-18	10.0-15.0	6.1-7.3	---	---	---
	8-60	10-18	5.0-10.0	6.1-7.3	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
160:							
Selow----------	0-9	27-35	10.0-15.0	6.6-7.8	---	0-2	4-13
	9-15	27-35	10.0-15.0	7.9-9.0	---	1-4	13-40
	15-20	27-40	10.0-15.0	8.5-9.0	5-10	1-4	13-40
	20-28	0-10	1.0-5.0	7.4-9.0	5-10	0-2	4-30
	28-60	0-10	1.0-5.0	7.4-9.0	1-5	0-2	4-25
161:							
Selow----------	0-9	27-35	10.0-15.0	6.6-7.8	---	0-2	4-13
	9-15	27-35	10.0-15.0	7.9-9.0	---	1-4	13-40
	15-20	27-40	10.0-15.0	8.5-9.0	5-10	1-4	13-40
	20-28	0-10	1.0-5.0	7.4-9.0	5-10	0-2	4-30
	28-60	0-10	1.0-5.0	7.4-9.0	1-5	0-2	4-25
162:							
Tevis----------	0-7	10-15	5.0-10.0	5.6-7.3	---	---	---
	7-14	5-10	2.0-5.0	5.6-7.3	---	---	---
	14-33	5-10	1.0-5.0	5.6-7.3	---	---	---
	33-60	5-10	1.0-5.0	6.1-7.3	---	---	---
163:							
Trapps----------	0-12	10-15	10.0-15.0	5.6-7.3	---	---	---
	12-27	27-35	15.0-20.0	6.6-8.4	---	0-2	---
	27-60	10-15	5.0-10.0	7.9-8.4	15-40	0-2	---
164:							
Trapps----------	0-13	10-15	10.0-15.0	5.6-7.3	---	---	---
	13-27	27-35	15.0-20.0	6.6-8.4	---	0-2	---
	27-60	10-15	5.0-10.0	7.9-8.4	15-40	0-2	---
165:							
Truscreek-------	0-9	18-27	15.0-20.0	6.1-7.3	---	---	---
	9-12	18-27	10.0-15.0	6.6-7.3	---	---	---
	12-25	18-27	10.0-15.0	7.4-7.8	---	---	---
	25-32	18-27	10.0-15.0	7.9-8.4	15-20	0-2	---
	32-60	12-27	5.0-10.0	7.9-8.4	5-15	0-2	---
166:							
Truscreek-------	0-9	18-27	15.0-20.0	6.1-7.3	---	---	---
	9-12	18-27	10.0-15.0	6.6-7.3	---	---	---
	12-25	18-27	10.0-15.0	7.4-7.8	---	---	---
	25-32	18-27	10.0-15.0	7.9-8.4	15-20	0-2	---
	32-60	12-27	5.0-10.0	7.9-8.4	5-15	0-2	---
Polson----------	0-7	15-25	15.0-20.0	7.4-7.8	---	0-2	---
	7-15	15-35	15.0-20.0	7.4-9.0	---	2-4	13-18
	15-60	15-30	10.0-15.0	8.5-9.0	10-15	4-8	15-30
167:							
Truscreek-------	0-8	18-27	15.0-20.0	6.1-7.3	---	---	---
	8-12	18-27	10.0-15.0	6.6-7.3	---	---	---
	12-24	18-27	10.0-15.0	7.4-7.8	---	---	---
	24-32	18-27	10.0-15.0	7.9-8.4	15-20	0-2	---
	32-60	12-27	5.0-10.0	7.9-8.4	5-15	0-2	---
Polson----------	0-7	15-25	15.0-20.0	7.4-7.8	---	0-2	---
	7-15	15-35	15.0-20.0	7.4-9.0	---	2-4	13-18
	15-60	15-30	10.0-15.0	8.5-9.0	10-15	4-8	15-30
168:							
Truscreek-------	0-8	18-27	15.0-20.0	6.1-7.3	---	---	---
	8-12	18-27	10.0-15.0	6.6-7.3	---	---	---
	12-24	18-27	10.0-15.0	7.4-7.8	---	---	---
	24-32	18-27	10.0-15.0	7.9-8.4	15-20	0-2	---
	32-60	12-27	5.0-10.0	7.9-8.4	5-15	0-2	---
Polson----------	0-7	15-25	15.0-20.0	7.4-7.8	---	0-2	---
	7-15	15-35	15.0-20.0	7.4-9.0	---	2-4	13-18
	15-60	15-30	10.0-15.0	8.5-9.0	10-15	4-8	15-30
169: Typic Haplaquepts.							
170:							
Vincom----------	0-5	15-27	10.0-15.0	7.9-8.4	---	0-2	0-13
	5-22	18-35	10.0-15.0	8.4-9.6	2-8	0-2	0-20
	22-60	18-35	5.0-10.0	8.4-9.6	1-5	0-2	0-20

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
171:							
Vincom----------	0-5	15-27	10.0-15.0	7.9-8.4	---	0-2	0-13
	5-22	18-35	10.0-15.0	8.4-9.6	2-8	0-2	0-20
	22-60	18-35	5.0-10.0	8.4-9.6	1-5	0-2	0-20
Lonepine--------	0-6	12-25	10.0-15.0	6.6-7.3	---	---	---
	6-14	18-35	10.0-15.0	6.6-7.3	---	---	---
	14-60	18-35	5.0-10.0	7.9-8.4	10-15	0-4	---
172:							
Waldbillig------	0-9	5-15	25.0-30.0	5.6-6.5	---	---	---
	9-25	7-18	15.0-20.0	5.6-6.5	---	---	---
	25-60	7-18	10.0-15.0	5.6-7.3	---	---	---
173:							
Waldbillig------	0-9	5-15	25.0-30.0	5.6-6.5	---	---	---
	9-25	7-18	15.0-20.0	5.6-6.5	---	---	---
	25-60	7-18	10.0-15.0	5.6-7.3	---	---	---
174:							
Walstead--------	0-13	15-25	15.0-20.0	6.6-7.3	---	---	---
	13-32	10-25	5.0-10.0	6.6-7.8	---	---	---
	32-60	10-25	5.0-10.0	7.4-8.4	5-30	0-2	---
175:							
Walstead--------	0-8	15-25	15.0-20.0	6.6-7.3	---	---	---
	8-15	15-25	10.0-15.0	6.6-7.3	---	---	---
	15-36	10-25	5.0-10.0	6.6-7.8	---	---	---
	36-60	10-25	5.0-10.0	7.4-8.4	5-30	0-2	---
176:							
Walstead--------	0-8	15-25	15.0-20.0	6.6-7.3	---	---	---
	8-15	15-25	10.0-15.0	6.6-7.3	---	---	---
	15-36	10-25	5.0-10.0	6.6-7.8	---	---	---
	36-60	10-25	5.0-10.0	7.4-8.4	5-30	0-2	---
177:							
Walstead--------	0-6	15-25	15.0-20.0	6.6-7.3	---	---	---
	6-15	15-25	10.0-15.0	6.6-7.3	---	---	---
	15-24	15-25	5.0-10.0	6.6-7.8	---	---	---
	24-60	10-25	5.0-10.0	7.4-8.4	5-30	0-2	---
Rock outcrop.							
178:							
Whitearth-------	0-5	18-27	10.0-15.0	7.9-8.4	---	0-4	5-40
	5-9	27-35	10.0-15.0	8.4-9.6	---	4-8	40-60
	9-32	27-35	5.0-10.0	8.4-9.6	10-15	4-8	20-60
	32-49	10-27	3.0-10.0	8.4-9.6	5-10	4-8	20-60
	49-60	10-27	3.0-10.0	8.4-9.6	5-10	4-16	60-75
Esteslake-------	0-4	18-35	15.0-20.0	8.5-9.0	5-10	0-4	20-45
	4-12	35-50	10.0-20.0	9.0-9.6	5-10	8-12	45-275
	12-19	35-50	10.0-15.0	9.0-9.6	10-15	8-12	45-275
	19-60	35-50	5.0-10.0	9.0-9.6	5-10	0-4	30-100
179:							
Wildgen---------	0-6	15-25	15.0-20.0	6.1-7.3	---	---	---
	6-17	15-25	10.0-15.0	6.1-7.3	---	---	---
	17-60	10-25	5.0-10.0	6.1-7.3	---	---	---
180:							
Wildgen---------	0-7	15-25	15.0-20.0	6.1-7.3	---	---	---
	7-15	15-25	10.0-15.0	6.1-7.3	---	---	---
	15-60	10-25	5.0-10.0	6.1-7.3	---	---	---
181:							
Wildgen---------	0-6	15-25	15.0-20.0	6.1-7.3	---	---	---
	6-17	15-25	10.0-15.0	6.1-7.3	---	---	---
	17-60	10-25	5.0-10.0	6.1-7.3	---	---	---
Finleypoint-----	0-10	15-25	15.0-20.0	6.1-7.3	---	---	---
	10-22	15-25	15.0-20.0	6.1-7.3	---	---	---
	22-34	10-25	10.0-15.0	6.1-7.3	---	---	---
	34-60	15-25	10.0-15.0	6.1-7.3	---	---	---
182:							
Winfall---------	0-19	10-20	5.0-10.0	5.1-6.5	---	---	---
	19-60	10-20	5.0-10.0	5.1-6.5	---	---	---

CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Cation exchange capacity	Soil reaction	Calcium carbonate	Salinity	Sodium adsorption ratio
	In	Pct	meq/100g	pH	Pct	mmhos/cm	
183:							
Winfall---------	0-15	10-20	5.0-10.0	5.1-6.5	---	---	---
	15-60	10-20	5.0-10.0	5.1-6.5	---	---	---
184:							
Winfall---------	0-15	10-20	5.0-10.0	5.1-6.5	---	---	---
	15-60	10-20	5.0-10.0	5.1-6.5	---	---	---
185:							
Winkler---------	0-4	7-15	10.0-15.0	6.1-7.3	---	---	---
	4-24	5-15	5.0-10.0	5.6-7.3	---	---	---
	24-60	5-15	5.0-10.0	5.6-6.5	---	---	---
Rock outcrop.							
186:							
Winkler---------	0-4	7-15	10.0-15.0	6.1-7.3	---	---	---
	4-24	5-15	5.0-10.0	5.6-7.3	---	---	---
	24-60	5-15	5.0-10.0	5.6-6.5	---	---	---
187:							
Winkler---------	0-4	7-15	10.0-15.0	6.1-7.3	---	---	---
	4-24	5-15	5.0-10.0	5.6-7.3	---	---	---
	24-60	5-15	5.0-10.0	5.6-6.5	---	---	---
Sharrott--------	0-4	10-15	10.0-15.0	5.6-7.3	---	---	---
	4-11	10-15	5.0-10.0	5.6-7.3	---	---	---
	11-19	10-15	5.0-10.0	5.6-7.3	---	---	---
	19-60	---	---	---	---	---	---
Rock outcrop.							
188:							
Xerofluvents.							
189:							
Xerofluvents.							
190:							
Yellowbay-------	0-3	7-15	---	6.1-7.3	---	---	---
	3-22	5-10	---	6.1-7.3	---	---	---
	22-60	2-5	---	6.1-7.3	---	---	---
191:							
Yellowbay-------	0-8	7-15	---	6.1-7.3	---	---	---
	8-18	5-10	---	6.1-7.3	---	---	---
	18-60	2-5	---	6.1-7.3	---	---	---
192:							
Yellowbay-------	0-4	7-15	---	6.1-7.3	---	---	---
	4-14	5-10	---	6.1-7.3	---	---	---
	14-60	2-5	---	6.1-7.3	---	---	---

WATER FEATURES

Map symbol and soil name	Hydrologic group	Flooding			High water table		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
1: Aeric Haplaquepts----	---	Frequent	Brief	Apr-Jun	0.5-1.5	Apparent	Jan-Dec
2: Badland.							
3: Bata----------	B	None	---	---	>6.0	---	---
4: Bata----------	B	None	---	---	>6.0	---	---
5: Belton----------	C	None	---	---	>6.0	---	---
6: Belton----------	C	None	---	---	>6.0	---	---
7: Belton----------	C	None	---	---	>6.0	---	---
8: Belton----------	C	None	---	---	>6.0	---	---
Kerl----------	B	None	---	---	>6.0	---	---
9: Belton----------	C	None	---	---	>6.0	---	---
Kerl----------	B	None	---	---	>6.0	---	---
10: Bigarm----------	B	None	---	---	>6.0	---	---
11: Bigarm----------	B	None	---	---	>6.0	---	---
12: Bigarm----------	B	None	---	---	>6.0	---	---
13: Bigarm----------	B	None	---	---	>6.0	---	---
Hogsby----------	D	None	---	---	>6.0	---	---
Rock outcrop.							
14: Bigarm----------	B	None	---	---	>6.0	---	---
Rubble land.							
15: Bigarm----------	B	None	---	---	>6.0	---	---
Hogsby----------	D	None	---	---	>6.0	---	---
Rock outcrop.							
16: Bigarm----------	B	None	---	---	>6.0	---	---
Rock outcrop.							
Rubble land.							
17: Bohnly----------	D	Occasional	Brief	Apr-Jun	0.5-2.0	Apparent	Apr-Sep
18: Bolack----------	D	Occasional	Brief	Feb-May	1.0-3.0	Apparent	May-Jul
19: Borohemists-----	---	Frequent	Long	Mar-Jul	0.0-1.0	Apparent	Jan-Dec
20: Bowlake---------	C	None	---	---	>6.0	---	---

Map symbol and soil name	Hydro-logic group	Flooding			High water table and p		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
21:							
Bowlake---------	C	None	---	---	>6.0	---	---
Minesinger------	C	None	---	---	>6.0	---	---
22:							
Colake----------	C/D	None	---	---	1.0-2.0	Apparent	Apr-Jul
23:							
Colake----------	C	None	---	---	2.0-3.0	Apparent	Apr-Jul
24:							
Colake----------	C/D	None	---	---	1.0-2.0	Apparent	Apr-Jul
Sacheen---------	A	None	---	---	>6.0	---	---
25:							
Connah----------	D	None	---	---	>6.0	---	---
26:							
Connah----------	D	None	---	---	>6.0	---	---
27:							
Connah----------	D	None	---	---	>6.0	---	---
Water.							
28:							
Courville-------	B	None	---	---	>6.0	---	---
29:							
Courville-------	B	None	---	---	>6.0	---	---
30:							
Courville-------	B	None	---	---	>6.0	---	---
31:							
Courville-------	B	None	---	---	>6.0	---	---
32:							
Courville-------	B	None	---	---	>6.0	---	---
33:							
Courville-------	B	None	---	---	>6.0	---	---
34:							
Courville-------	B	None	---	---	>6.0	---	---
Rumblecreek-----	B	None	---	---	>6.0	---	---
35:							
Craddock--------	B	None	---	---	>6.0	---	---
36:							
Craddock--------	B	None	---	---	>6.0	---	---
37:							
Craddock--------	B	None	---	---	>6.0	---	---
38:							
Doker-----------	C	Occasional	Brief	Apr-Jun	0.0-2.0	Apparent	Apr-Sep
39:							
Dryfork---------	B	None	---	---	>6.0	---	---
40:							
Dryfork---------	B	None	---	---	>6.0	---	---
Selow-----------	D	None	---	---	>6.0	---	---
41:							
Dryfork---------	B	None	---	---	>6.0	---	---
Selow-----------	D	None	---	---	>6.0	---	---
42:							
Dubay-----------	B	None	---	---	>6.0	---	---

Map symbol and soil name	Hydro-logic group	Flooding			High water table and p		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
43:							
Dubay----------	B	None	---	---	>6.0	---	---
44:							
Eaglewing-------	B	None	---	---	>6.0	---	---
45:							
Eaglewing-------	B	None	---	---	>6.0	---	---
46:							
Eaglewing-------	B	None	---	---	>6.0	---	---
47:							
Esteslake-------	D	None	---	---	>6.0	---	---
Slickspots.							
48:							
Felan----------	B	None	---	---	>6.0	---	---
49:							
Felan----------	B	None	---	---	>6.0	---	---
50:							
Finleypoint-----	B	None	---	---	>6.0	---	---
51:							
Finleypoint-----	B	None	---	---	>6.0	---	---
52:							
Finleypoint-----	B	None	---	---	>6.0	---	---
53:							
Finleypoint-----	B	None	---	---	>6.0	---	---
54:							
Finleypoint-----	B	None	---	---	>6.0	---	---
55:							
Finleypoint-----	B	None	---	---	>6.0	---	---
56:							
Finleypoint-----	B	None	---	---	>6.0	---	---
Wildgen---------	B	None	---	---	>6.0	---	---
57:							
Flott----------	B	None	---	---	>6.0	---	---
58:							
Flott----------	B	None	---	---	>6.0	---	---
59:							
Flott----------	B	None	---	---	>6.0	---	---
60:							
Flott----------	B	None	---	---	>6.0	---	---
61:							
Flott----------	B	None	---	---	>6.0	---	---
62:							
Gardencreek-----	D	Rare	Brief	Jan-Jul	4.0-6.0	Apparent	Mar-Jun
63:							
Gird----------	B	None	---	---	>6.0	---	---
64:							
Gird----------	B	None	---	---	>6.0	---	---
65:							
Gird----------	B	Rare	Brief	Jan-Jul	3.0-4.0	Apparent	Jun-Aug
Dryfork---------	B	Rare	Brief	Jan-Jul	3.0-4.0	Apparent	Jun-Aug

Map symbol and soil name	Hydro-logic group	Flooding			High water table and p		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
66:							
Gird----------	B	None	---	---	>6.0	---	---
Vincom----------	C	None	---	---	>6.0	---	---
67:							
Gird----------	B	None	---	---	>6.0	---	---
Vincom----------	C	None	---	---	>6.0	---	---
68:							
Glaciercreek----	A	None	---	---	>6.0	---	---
69:							
Half Moon-------	B	None	---	---	>6.0	---	---
70:							
Half Moon-------	B	None	---	---	>6.0	---	---
Courville-------	B	None	---	---	>6.0	---	---
71:							
Hogsby----------	D	None	---	---	>6.0	---	---
Finleypoint-----	B	None	---	---	>6.0	---	---
72:							
Hogsby----------	D	None	---	---	>6.0	---	---
Rock outcrop.							
73:							
Holloway--------	B	None	---	---	>6.0	---	---
74:							
Holloway--------	B	None	---	---	>6.0	---	---
75:							
Holloway--------	B	None	---	---	>6.0	---	---
76:							
Holloway--------	B	None	---	---	>6.0	---	---
77:							
Holloway--------	B	None	---	---	>6.0	---	---
Rock outcrop.							
78:							
Holloway--------	B	None	---	---	>6.0	---	---
Rubble land.							
79:							
Irvine----------	D	None	---	---	>6.0	---	---
80:							
Irvine----------	D	None	---	---	>6.0	---	---
81:							
Jocko-----------	A	None	---	---	>6.0	---	---
82:							
Jocko-----------	A	None	---	---	>6.0	---	---
83:							
Jocko-----------	A	None	---	---	>6.0	---	---
84:							
Kerl------------	B	None	---	---	>6.0	---	---
85:							
Kerl------------	B	None	---	---	>6.0	---	---
86:							
Kerrdam---------	C	None	---	---	>6.0	---	---

Map symbol and soil name	Hydro-logic group	Flooding			High water table and p		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
87:							
Kerrdam---------	C	None	---	---	>6.0	---	---
88:							
Kerrdam---------	C	None	---	---	>6.0	---	---
Vincom----------	C	None	---	---	>6.0	---	---
89:							
Kerrdam---------	C	None	---	---	>6.0	---	---
Vincom----------	C	None	---	---	>6.0	---	---
90:							
Kingspoint------	B	None	---	---	>6.0	---	---
91:							
Kingspoint------	B	None	---	---	>6.0	---	---
92:							
Kingspoint------	B	None	---	---	>6.0	---	---
93:							
Lamoose---------	D	Occasional	Brief	Jan-Jun	0.0-1.0	Apparent	Apr-May
94:							
Lonepine--------	B	None	---	---	>6.0	---	---
95:							
Lonepine--------	B	None	---	---	>6.0	---	---
96:							
Lonepine--------	B	None	---	---	>6.0	---	---
97:							
Lonepine--------	B	None	---	---	>6.0	---	---
Vincom----------	C	None	---	---	>6.0	---	---
98:							
Lonepine--------	B	None	---	---	>6.0	---	---
Vincom----------	C	None	---	---	>6.0	---	---
99:							
Marklepass------	D	None	---	---	>6.0	---	---
100:							
Marklepass------	D	None	---	---	>6.0	---	---
Slickspots.							
101:							
McCollum--------	B	None	---	---	>6.0	---	---
102:							
McCollum--------	B	None	---	---	>6.0	---	---
103:							
McCollum--------	B	None	---	---	>6.0	---	---
104:							
McCollum--------	B	None	---	---	>6.0	---	---
105:							
McDonald--------	C	None	---	---	>6.0	---	---
106:							
McDonald--------	C	None	---	---	>6.0	---	---
107:							
McDonald--------	C	None	---	---	>6.0	---	---
108:							
McDonald--------	C	None	---	---	>6.0	---	---
109:							
Minesinger------	C	None	---	---	>6.0	---	---

WATER FEATURES--Continued

Map symbol and soil name	Hydro-logic group	Flooding			High water table and p		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
110:							
Minesinger------	C	None	---	---	>6.0	---	---
Walstead--------	B	None	---	---	>6.0	---	---
111:							
Mitten----------	B	None	---	---	>6.0	---	---
112:							
Mitten----------	B	None	---	---	>6.0	---	---
113:							
Mitten----------	B	None	---	---	>6.0	---	---
114:							
Mitten----------	B	None	---	---	>6.0	---	---
Rock outcrop.							
115:							
Moiese----------	B	None	---	---	>6.0	---	---
116:							
Mollman---------	B	None	---	---	>6.0	---	---
117:							
Mollman---------	B	None	---	---	>6.0	---	---
118:							
Mollman---------	B	None	---	---	>6.0	---	---
119:							
Mollman---------	B	None	---	---	>6.0	---	---
120:							
Niarada---------	B	None	---	---	>6.0	---	---
121:							
Niarada---------	B	None	---	---	>6.0	---	---
122:							
Niarada---------	B	None	---	---	>6.0	---	---
123:							
Niarada---------	B	None	---	---	>6.0	---	---
124:							
Niarada---------	B	None	---	---	>6.0	---	---
125:							
Niarada---------	B	None	---	---	>6.0	---	---
Kerl------------	B	None	---	---	>6.0	---	---
126:							
Ninepipe--------	B	None	---	---	4.0-6.0	Apparent	Jun-Sep
127:							
Phillcher-------	B	None	---	---	>6.0	---	---
128:							
Phillcher-------	B	None	---	---	>6.0	---	---
Rock outcrop.							
129:							
Pits.							
130:							
Polson----------	B	None	---	---	>6.0	---	---
131:							
Polson----------	B	None	---	---	>6.0	---	---
132:							
Polson----------	B	None	---	---	>6.0	---	---
Vincom----------	C	None	---	---	>6.0	---	---

Map symbol and soil name	Hydro-logic group	Flooding			High water table and p		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
133:							
Post----------	D	None	---	---	>6.0	---	---
134:							
Post----------	D	None	---	---	>6.0	---	---
135:							
Post----------	D	None	---	---	>6.0	---	---
136:							
Post----------	D	None	---	---	>6.0	---	---
Ronan----------	D	None	---	---	>6.0	---	---
Water.							
137:							
Post----------	D	None	---	---	>6.0	---	---
Ronan----------	D	None	---	---	>6.0	---	---
Water.							
138:							
Repp----------	B	None	---	---	>6.0	---	---
139:							
Repp----------	B	None	---	---	>6.0	---	---
Rock outcrop.							
140:							
Rock outcrop.							
Rubble land.							
141:							
Ronan----------	D	None	---	---	>6.0	---	---
142:							
Ronan----------	D	None	---	---	>6.0	---	---
143:							
Ronan----------	D	None	---	---	>6.0	---	---
144:							
Round Butte-----	D	None	---	---	>6.0	---	---
145:							
Round Butte-----	D	None	---	---	>6.0	---	---
146:							
Round Butte-----	D	None	---	---	>6.0	---	---
147:							
Round Butte-----	D	None	---	---	>6.0	---	---
148:							
Round Butte-----	D	None	---	---	>6.0	---	---
Irvine----------	D	None	---	---	>6.0	---	---
149:							
Round Butte-----	D	None	---	---	>6.0	---	---
Irvine----------	D	None	---	---	>6.0	---	---
150:							
Rumblecreek-----	B	None	---	---	>6.0	---	---
151:							
Rumblecreek-----	B	None	---	---	>6.0	---	---
152:							
Rumblecreek-----	B	None	---	---	>6.0	---	---
153:							
Rumblecreek-----	B	None	---	---	>6.0	---	---

Map symbol and soil name	Hydro-logic group	Flooding			High water table and p		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
154:							
Sacheen---------	A	None	---	---	>6.0	---	---
155:							
Sacheen---------	A	None	---	---	>6.0	---	---
156:							
Selon----------	B	None	---	---	>6.0	---	---
157:							
Selon----------	B	None	---	---	>6.0	---	---
158:							
Selon----------	B	None	---	---	>6.0	---	---
159:							
Selon----------	B	None	---	---	>6.0	---	---
160:							
Selow----------	D	None	---	---	>6.0	---	---
161:							
Selow----------	D	None	---	---	>6.0	---	---
162:							
Tevis----------	B	None	---	---	>6.0	---	---
163:							
Trapps----------	B	None	---	---	>6.0	---	---
164:							
Trapps----------	B	None	---	---	>6.0	---	---
165:							
Truscreek-------	B	None	---	---	>6.0	---	---
166:							
Truscreek-------	B	None	---	---	>6.0	---	---
Polson----------	B	None	---	---	>6.0	---	---
167:							
Truscreek-------	B	None	---	---	>6.0	---	---
Polson----------	B	None	---	---	>6.0	---	---
168:							
Truscreek-------	B	None	---	---	>6.0	---	---
Polson----------	B	None	---	---	>6.0	---	---
169:							
Typic Haplaquepts----	---	---	---	---	---	---	Nov-Jul
170:							
Vincom----------	C	None	---	---	>6.0	---	---
171:							
Vincom----------	C	None	---	---	>6.0	---	---
Lonepine--------	B	None	---	---	>6.0	---	---
172:							
Waldbillig------	B	None	---	---	>6.0	---	---
173:							
Waldbillig------	B	None	---	---	>6.0	---	---
174:							
Walstead--------	B	None	---	---	>6.0	---	---
175:							
Walstead--------	B	None	---	---	>6.0	---	---
176:							
Walstead--------	B	None	---	---	>6.0	---	---

Map symbol and soil name	Hydro-logic group	Flooding			High water table and p		
		Frequency	Duration	Months	Water table depth	Kind of water table	Months
					Ft		
177:							
Walstead--------	B	None	---	---	>6.0	---	---
Rock outcrop.							
178:							
Whitearth-------	C	None	---	---	>6.0	---	---
Esteslake-------	D	None	---	---	>6.0	---	---
179:							
Wildgen---------	B	None	---	---	>6.0	---	---
180:							
Wildgen---------	B	None	---	---	>6.0	---	---
181:							
Wildgen---------	B	None	---	---	>6.0	---	---
Finleypoint-----	B	None	---	---	>6.0	---	---
182:							
Winfall---------	B	None	---	---	>6.0	---	---
183:							
Winfall---------	B	None	---	---	>6.0	---	---
184:							
Winfall---------	B	None	---	---	>6.0	---	---
185:							
Winkler---------	B	None	---	---	>6.0	---	---
Rock outcrop.							
186:							
Winkler---------	B	None	---	---	>6.0	---	---
187:							
Winkler---------	B	None	---	---	>6.0	---	---
Sharrott--------	D	None	---	---	>6.0	---	---
Rock outcrop.							
188:							
Xerofluvents----	---	Frequent	Brief	Apr-Jun	---	---	---
189:							
Xerofluvents----	---	Rare	Brief	Jan-Jul	---	---	---
190:							
Yellowbay-------	B	None	---	---	>6.0	---	---
191:							
Yellowbay-------	B	None	---	---	>6.0	---	---
192:							
Yellowbay-------	B	None	---	---	>6.0	---	---

SOIL FEATURES

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
1:					
Aeric Haplaquepts----	>60	---	---	---	---
2:					
Badland.					
3:					
Bata----------	>60	---	Moderate	Moderate	Moderate
4:					
Bata----------	>60	---	Moderate	Moderate	Moderate
5:					
Belton----------	>60	---	Moderate	High	Low
6:					
Belton----------	>60	---	Moderate	High	Low
7:					
Belton----------	>60	---	Moderate	High	Low
8:					
Belton----------	>60	---	Moderate	High	Low
Kerl----------	>60	---	Moderate	High	Low
9:					
Belton----------	>60	---	Moderate	High	Low
Kerl----------	>60	---	Moderate	High	Low
10:					
Bigarm----------	>60	---	Moderate	Moderate	Low
11:					
Bigarm----------	>60	---	Moderate	Moderate	Low
12:					
Bigarm----------	>60	---	Moderate	Moderate	Low
13:					
Bigarm----------	>60	---	Moderate	Moderate	Low
Hogsby----------	10-20	Hard	Moderate	Moderate	Low
Rock outcrop.					
14:					
Bigarm----------	>60	---	Moderate	Moderate	Low
Rubble land.					
15:					
Bigarm----------	>60	---	Moderate	Moderate	Low
Hogsby----------	10-20	Hard	Moderate	Moderate	Low
Rock outcrop.					
16:					
Bigarm----------	>60	---	Moderate	Moderate	Low
Rock outcrop.					
Rubble land.					
17:					
Bohnly----------	>60	---	High	Moderate	Low
18:					
Bolack----------	>60	---	High	Moderate	Moderate
19:					
Borohemists-----	>60	---	---	---	---
20:					
Bowlake---------	>60	---	Moderate	High	Low

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
21:					
Bowlake---------	>60	---	Moderate	High	Low
Minesinger------	>60	---	Moderate	High	Low
22:					
Colake----------	>60	---	Moderate	High	Low
23:					
Colake----------	>60	---	Moderate	High	Low
24:					
Colake----------	>60	---	Moderate	High	Low
Sacheen---------	>60	---	Low	Moderate	Low
25:					
Connah----------	>60	---	Moderate	High	Moderate
26:					
Connah----------	>60	---	Moderate	High	Moderate
27:					
Connah----------	>60	---	Moderate	High	Moderate
Water.					
28:					
Courville-------	>60	---	Moderate	Moderate	Moderate
29:					
Courville-------	>60	---	Moderate	Moderate	Moderate
30:					
Courville-------	>60	---	Moderate	Moderate	Moderate
31:					
Courville-------	>60	---	Moderate	Moderate	Moderate
32:					
Courville-------	>60	---	Moderate	Moderate	Moderate
33:					
Courville-------	>60	---	Moderate	Moderate	Moderate
34:					
Courville-------	>60	---	Moderate	Moderate	Moderate
Rumblecreek-----	>60	---	Moderate	Moderate	Moderate
35:					
Craddock--------	>60	---	Moderate	Moderate	Moderate
36:					
Craddock--------	>60	---	Moderate	Moderate	Moderate
37:					
Craddock--------	>60	---	Moderate	Moderate	Moderate
38:					
Doker-----------	>60	---	Moderate	Moderate	Low
39:					
Dryfork---------	>60	---	Moderate	High	Low
40:					
Dryfork---------	>60	---	Moderate	High	Low
Selow-----------	>60	---	Moderate	High	Moderate
41:					
Dryfork---------	>60	---	Moderate	High	Low
Selow-----------	>60	---	Moderate	High	Moderate
42:					
Dubay-----------	>60	---	High	Moderate	Low

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
43:					
Dubay----------	>60	---	High	Moderate	Low
44:					
Eaglewing-------	>60	---	Moderate	High	Low
45:					
Eaglewing-------	>60	---	Moderate	High	Low
46:					
Eaglewing-------	>60	---	Moderate	High	Low
47:					
Esteslake-------	>60	---	Low	High	High
Slickspots.					
48:					
Felan----------	>60	---	Moderate	High	Moderate
49:					
Felan----------	>60	---	Moderate	High	Moderate
50:					
Finleypoint-----	>60	---	Moderate	Moderate	Low
51:					
Finleypoint-----	>60	---	Moderate	Moderate	Low
52:					
Finleypoint-----	>60	---	Moderate	Moderate	Low
53:					
Finleypoint-----	>60	---	Moderate	Moderate	Low
54:					
Finleypoint-----	>60	---	Moderate	Moderate	Low
55:					
Finleypoint-----	>60	---	Moderate	Moderate	Low
56:					
Finleypoint-----	>60	---	Moderate	Moderate	Low
Wildgen---------	>60	---	Moderate	Moderate	Low
57:					
Flott----------	>60	---	Moderate	High	Low
58:					
Flott----------	>60	---	Moderate	High	Low
59:					
Flott----------	>60	---	Moderate	High	Low
60:					
Flott----------	>60	---	Moderate	High	Low
61:					
Flott----------	>60	---	Moderate	High	Low
62:					
Gardencreek-----	>60	---	Low	Moderate	Moderate
63:					
Gird----------	>60	---	High	High	Low
64:					
Gird----------	>60	---	High	High	Low
65:					
Gird----------	>60	---	High	High	Low
Dryfork---------	>60	---	High	High	Moderate
66:					
Gird----------	>60	---	High	High	Low
Vincom----------	>60	---	Moderate	High	Low

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
67:					
Gird	>60	---	High	High	Low
Vincom	>60	---	Moderate	High	Low
68:					
Glaciercreek	>60	---	Low	Moderate	Moderate
69:					
Half Moon	>60	---	Moderate	High	High
70:					
Half Moon	>60	---	Moderate	High	High
Courville	>60	---	Moderate	Moderate	Moderate
71:					
Hogsby	10-20	Hard	Moderate	Moderate	Low
Finleypoint	>60	---	Moderate	Moderate	Low
72:					
Hogsby	10-20	Hard	Moderate	Moderate	Low
Rock outcrop.					
73:					
Holloway	>60	---	Moderate	Moderate	Moderate
74:					
Holloway	>60	---	Moderate	Moderate	Moderate
75:					
Holloway	>60	---	Moderate	Moderate	Moderate
76:					
Holloway	>60	---	Moderate	Moderate	Moderate
77:					
Holloway	>60	---	Moderate	Moderate	Moderate
Rock outcrop.					
78:					
Holloway	>60	---	Moderate	Moderate	Moderate
Rubble land.					
79:					
Irvine	>60	---	Moderate	High	Moderate
80:					
Irvine	>60	---	Moderate	High	Moderate
81:					
Jocko	>60	---	Low	Moderate	Low
82:					
Jocko	>60	---	Low	Moderate	Low
83:					
Jocko	>60	---	Low	Moderate	Low
84:					
Kerl	>60	---	Moderate	High	Low
85:					
Kerl	>60	---	Moderate	High	Low
86:					
Kerrdam	>60	---	Moderate	High	Low
87:					
Kerrdam	>60	---	Moderate	High	Low
88:					
Kerrdam	>60	---	Moderate	High	Low
Vincom	>60	---	Moderate	High	Low

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
89:					
Kerrdam---------	>60	---	Moderate	High	Low
Vincom----------	>60	---	Moderate	High	Low
90:					
Kingspoint------	>60	---	Moderate	High	Low
91:					
Kingspoint------	>60	---	Moderate	High	Low
92:					
Kingspoint------	>60	---	Moderate	High	Low
93:					
Lamoose---------	>60	---	High	High	Low
94:					
Lonepine--------	>60	---	Moderate	High	Low
95:					
Lonepine--------	>60	---	Moderate	High	Low
96:					
Lonepine--------	>60	---	Moderate	High	Low
97:					
Lonepine--------	>60	---	Moderate	High	Low
Vincom----------	>60	---	Moderate	High	Low
98:					
Lonepine--------	>60	---	Moderate	High	Low
Vincom----------	>60	---	Moderate	High	Low
99:					
Marklepass------	>60	---	Low	High	Moderate
100:					
Marklepass------	>60	---	Low	High	Moderate
Slickspots.					
101:					
McCollum--------	>60	---	Moderate	High	Low
102:					
McCollum--------	>60	---	Moderate	High	Low
103:					
McCollum--------	>60	---	Moderate	High	Low
104:					
McCollum--------	>60	---	Moderate	High	Low
105:					
McDonald--------	>60	---	Moderate	High	Low
106:					
McDonald--------	>60	---	Moderate	High	Low
107:					
McDonald--------	>60	---	Moderate	High.	Low
108:					
McDonald--------	>60	---	Moderate	High	Low
109:					
Minesinger------	>60	---	Moderate	High	Low
110:					
Minesinger------	>60	---	Moderate	High	Low
Walstead--------	>60	---	Moderate	High	Low
111:					
Mitten----------	>60	---	Moderate	Moderate	Moderate

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
112:					
Mitten----------	>60	---	Moderate	Moderate	Moderate
113:					
Mitten----------	>60	---	Moderate	Moderate	Moderate
114:					
Mitten----------	>60	---	Moderate	Moderate	Moderate
Rock outcrop.					
115:					
Moiese----------	>60	---	Low	High	Low
116:					
Mollman---------	>60	---	Moderate	High	Low
117:					
Mollman---------	>60	---	Moderate	High	Low
118:					
Mollman---------	>60	---	Moderate	High	Low
119:					
Mollman---------	>60	---	Moderate	High	Low
120:					
Niarada---------	>60	---	Moderate	High	Low
121:					
Niarada---------	>60	---	Moderate	High	Low
122:					
Niarada---------	>60	---	Moderate	High	Low
123:					
Niarada---------	>60	---	Moderate	High	Low
124:					
Niarada---------	>60	---	Moderate	High	Low
125:					
Niarada---------	>60	---	Moderate	High	Low
Kerl----------	>60	---	Moderate	High	Low
126:					
Ninepipe--------	>60	---	High	High	Low
127:					
Phillcher-------	>60	---	Moderate	Moderate	Moderate
128:					
Phillcher-------	>60	---	Moderate	Moderate	Moderate
Rock outcrop.					
129:					
Pits.					
130:					
Polson----------	>60	---	High	High	Low
131:					
Polson----------	>60	---	High	High	Low
132:					
Polson----------	>60	---	High	High	Low
Vincom----------	>60	---	Moderate	High	Low
133:					
Post----------	>60	---	Moderate	High	Moderate
134:					
Post----------	>60	---	Moderate	High	Moderate
135:					
Post----------	>60	---	Moderate	High	Moderate

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
136:					
Post----------	>60	---	Moderate	High	Moderate
Ronan----------	>60	---	Moderate	High	Moderate
Water.					
137:					
Post----------	>60	---	Moderate	High	Moderate
Ronan----------	>60	---	Moderate	High	Moderate
Water.					
138:					
Repp----------	>60	---	Moderate	High	Low
139:					
Repp----------	>60	---	Moderate	High	Low
Rock outcrop.					
140:					
Rock outcrop.					
Rubble land.					
141:					
Ronan----------	>60	---	Moderate	High	Moderate
142:					
Ronan----------	>60	---	Moderate	High	Moderate
143:					
Ronan----------	>60	---	Moderate	High	Moderate
144:					
Round Butte-----	>60	---	Moderate	High	Moderate
145:					
Round Butte-----	>60	---	Moderate	High	Moderate
146:					
Round Butte-----	>60	---	Moderate	High	Moderate
147:					
Round Butte-----	>60	---	Moderate	High	Moderate
148:					
Round Butte-----	>60	---	Moderate	High	Moderate
Irvine----------	>60	---	Moderate	High	Moderate
149:					
Round Butte-----	>60	---	Moderate	High	Moderate
Irvine----------	>60	---	Moderate	High	Moderate
150:					
Rumblecreek-----	>60	---	Moderate	Moderate	Moderate
151:					
Rumblecreek-----	>60	---	Moderate	Moderate	Moderate
152:					
Rumblecreek-----	>60	---	Moderate	Moderate	Moderate
153:					
Rumblecreek-----	>60	---	Moderate	Moderate	Moderate
154:					
Sacheen---------	>60	---	Low	Moderate	Low
155:					
Sacheen---------	>60	---	Low	Moderate	Low
156:					
Selon----------	>60	---	Moderate	Moderate	Low

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
157:					
Selon----------	>60	---	Moderate	Moderate	Low
158:					
Selon----------	>60	---	Moderate	Moderate	Low
159:					
Selon----------	>60	---	Moderate	Moderate	Low
160:					
Selow----------	>60	---	Moderate	High	Moderate
161:					
Selow----------	>60	---	Moderate	High	Moderate
162:					
Tevis----------	>60	---	Moderate	Moderate	Moderate
163:					
Trapps----------	>60	---	Moderate	High	Moderate
164:					
Trapps----------	>60	---	Moderate	High	Moderate
165:					
Truscreek-------	>60	---	High	High	Low
166:					
Truscreek-------	>60	---	High	High	Low
Polson----------	>60	---	High	High	Low
167:					
Truscreek-------	>60	---	High	High	Low
Polson----------	>60	---	High	High	Low
168:					
Truscreek-------	>60	---	High	High	Low
Polson----------	>60	---	High	High	Low
169:					
Typic Haplaquepts----	>60	---	---	---	---
170:					
Vincom----------	>60	---	Moderate	High	Low
171:					
Vincom----------	>60	---	Moderate	High	Low
Lonepine--------	>60	---	Moderate	High	Low
172:					
Waldbillig------	>60	---	Moderate	Moderate	Moderate
173:					
Waldbillig------	>60	---	Moderate	Moderate	Moderate
174:					
Walstead--------	>60	---	Moderate	High	Low
175:					
Walstead--------	>60	---	Moderate	High	Low
176:					
Walstead--------	>60	---	Moderate	High	Low
177:					
Walstead--------	>60	---	Moderate	High	Low
Rock outcrop.					
178:					
Whitearth-------	>60	---	Moderate	High	High
Esteslake-------	>60	---	Low	High	High

SOIL FEATURES--Continued

Map symbol and soil name	Bedrock		Potential frost action	Risk of corrosion	
	Depth	Hardness		Uncoated steel	Concrete
	In				
179:					
Wildgen---------	>60	---	Moderate	Moderate	Low
180:					
Wildgen---------	>60	---	Moderate	Moderate	Low
181:					
Wildgen---------	>60	---	Moderate	Moderate	Low
Finleypoint-----	>60	---	Moderate	Moderate	Low
182:					
Winfall---------	>60	---	Moderate	Moderate	Moderate
183:					
Winfall---------	>60	---	Moderate	Moderate	Moderate
184:					
Winfall---------	>60	---	Moderate	Moderate	Moderate
185:					
Winkler---------	>60	---	Moderate	Moderate	Moderate
Rock outcrop.					
186:					
Winkler---------	>60	---	Moderate	Moderate	Moderate
187:					
Winkler---------	>60	---	Moderate	Moderate	Moderate
Sharrott--------	10-20	Hard	Moderate	Moderate	Moderate
Rock outcrop.					
188:					
Xerofluvents----	>60	---	---	---	---
189:					
Xerofluvents----	>60	---	---	---	---
190:					
Yellowbay-------	>60	---	Low	Moderate	Low
191:					
Yellowbay-------	>60	---	Low	Moderate	Low
192:					
Yellowbay-------	>60	---	Low	Moderate	Low

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Glossary

Ablation till. Loose, permeable till deposited during the final downwasting of glacial ice. Lenses of crudely sorted sand and gravel are common.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvial fan. A body of alluvium, with overflow of water and debris flow deposits, whose surface forms a segment of a cone that radiates downslope from the point where the stream emerges from a narrow valley onto a less sloping surface. Source uplands range in relief and areal extent from mountains to gullied terrains on hill slopes.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Animal-unit-month (AUM). The amount of forage required by one mature cow of approximately 1,000 pounds weight, with or without a calf, for 1 month.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Argillite. Weakly metamorphosed mudstone or shale.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3.75
Low	3.75 to 5.0
Moderate	5.0 to 7.5
High	More than 7.5

Avalanche chute. The track or path formed by an avalanche.

Back slope. The geomorphic component that forms the steepest inclined surface and principal element of many hill slopes. Back slopes in profile are commonly steep and linear and descend to a foot slope. In terms of gradational process, back slopes are erosional forms produced mainly by mass wasting and running water.

Badland. Steep or very steep, commonly nonstony, barren land dissected by many intermittent drainage channels. Badland is most common in semiarid and arid regions where streams are entrenched in soft geologic material. Local relief generally ranges from 25 to 500 feet. Runoff potential is very high, and geologic erosion is active.

Basal area. The area of a cross section of a tree, generally referring to the section at breast height and measured outside the bark. It is a measure of stand density, commonly expressed in square feet.

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation-exchange capacity.

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-floored plain. An extensive nearly level to gently rolling or moderately sloping area that is underlain by hard bedrock and has a slope of 0 to 8 percent.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Blowout. A shallow depression from which all or most of the soil material has been removed by the wind. A blowout has a flat or irregular floor formed by a resistant layer or by an accumulation of pebbles or cobbles. In some blowouts the water table is exposed.

Board foot. A unit of measure of the wood in lumber, logs, or trees. The amount of wood in a board one foot wide, one foot long, and one inch thick before finishing.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. The steep or very steep broken land at the border of an upland summit that is dissected by ravines.

Breast height. An average height of 4.5 feet above the ground surface; the point on a tree where diameter measurements are ordinarily taken.

Brush management. Use of mechanical, chemical, or biological methods to reduce or eliminate competition from woody vegetation and thus to allow understory grasses and forbs to recover or to make conditions favorable for reseeding. Brush management increases forage production and thus reduces the hazard of erosion. It can improve the habitat for some species of wildlife.

Cable yarding. A method of moving felled trees to a nearby central area for transport to a processing facility. Most cable yarding systems involve use of a drum, a pole, and wire cables in an arrangement similar to that of a rod and reel used for fishing. To reduce friction and soil disturbance, a felled tree generally is reeled in while one end is lifted or the entire log is suspended.

Calcareous soil. A soil containing enough calcium carbonate (commonly combined with magnesium carbonate) to effervesce visibly when treated with cold, dilute hydrochloric acid.

Caliche. A more or less cemented deposit of calcium carbonate in soils of warm-temperate, subhumid to arid areas. Caliche occurs as soft, thin layers in the soil or as hard, thick beds just beneath the solum, or it is exposed at the surface by erosion.

California bearing ratio (CBR). The load-supporting capacity of a soil as compared to that of standard crushed limestone, expressed as a ratio. First standardized in California. A soil having a CBR of 16 supports 16 percent of the load that would be supported by standard crushed limestone, per unit area, with the same degree of distortion.

Canopy. The leafy crown of trees or shrubs. (See Crown.)

Capillary water. Water held as a film around soil particles and in tiny spaces between particles. Surface tension is the adhesive force that holds capillary water in the soil.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

Catsteps. Very small, irregular terraces on steep hillsides, especially in pasture, formed by the trampling of cattle or the slippage of saturated soil.

Channeled. Refers to a drainage area in which natural meandering or repeated branching and convergence of a streambed have created deeply incised cuts, either active or abandoned, in alluvial material.

Channery soil. A soil that is, by volume, more than 15 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation by use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that loosen the subsoil and bring clods to the surface. A form of emergency tillage to control soil blowing.

Cirque. A semicircular, concave, bowllike area that has steep faces primarily resulting from erosive activity of a mountain glacier.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clayey soil. Silty clay, sandy clay, or clay.

Clay film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Clearcut. A method of forest harvesting that removes the entire stand of trees in one cutting. Reproduction is achieved artificially or by natural seeding from adjacent stands.

Climax plant community. The plant community on a given site that will be established if present environmental conditions continue to prevail and the site is properly managed.

Closed depression. A low area completely surrounded by higher ground and having no natural outlet.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that is 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material is 35 to 60 percent of these rock fragments, and extremely cobbly soil material is more than 60 percent.

Codominant trees. Trees whose crowns form the general level of the forest canopy and that receive full light from above but comparatively little from the sides.

Colluvium. Soil material, rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

Commercial forest. Forest land capable of producing 20 cubic feet or more per acre per year at the culmination of mean annual increment.

Complex slope. Irregular or variable slope. Planning or establishing terraces, diversions, and other water-control structures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil or miscellaneous areas in such an intricate pattern or so small in area that it is not practical to map them separately at the selected scale of mapping. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas.

Compressible (in tables). Excessive decrease in volume of soft soil under load.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Conglomerate. A coarse grained, clastic rock composed of rounded to subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. Any tillage and planting system in which a cover of crop residue is maintained on at least 30 percent of the soil surface after planting in order to reduce the hazard of water erosion; in areas where soil blowing is the primary concern, a system that maintains a cover of at least 1,000 pounds of flat residue of small grain or the equivalent during the critical erosion period.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are:

Loose.--Noncoherent when dry or moist; does not hold together in a mass.

Friable.--When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.--When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.--Readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.
Sticky.--Adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.
Hard.--When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.
Soft.--When dry, breaks into powder or individual grains under very slight pressure.
Cemented.--Hard; little affected by moistening.

Consolidated sandstone. Sandstone that disperses within a few hours when fragments are placed in water. The fragments are extremely hard or very hard when dry, are not easily crushed, and cannot be textured by the usual field method.

Consolidated shale. Shale that disperses within a few hours when fragments are placed in water. The fragments are extremely hard or very hard when dry and are not easily crushed.

Contour stripcropping (or contour farming). Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat). Fecal material deposited in water by aquatic organisms.

Corrosion. Soil-induced electrochemical or chemical action that dissolves or weakens concrete or uncoated steel.

Cover crop. A close-growing crop grown primarily to improve and protect the soil between periods of regular crop production, or a crop grown between trees and vines in orchards and vineyards.

Cropping system. Growing crops according to a planned system of rotation and management practices.

Crop residue management. Returning crop residue to the soil, which helps to maintain soil structure, organic matter content, and fertility and helps to control erosion.

Cross-slope farming. Deliberately conducting farming operations on sloping farmland in such a way that tillage is across the general slope.

Crown. The upper part of a tree or shrub, including the living branches and their foliage.

Culmination of the mean annual increment (CMAI). The average annual increase per acre in the volume of a stand. Computed by dividing the total volume of the stand by its age. As the stand increases in age, the mean annual increment continues to increase until mortality begins to reduce the rate of increase. The point where the stand reaches its maximum annual rate of growth is called the culmination of the mean annual increment.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deep soil. A soil that is 40 to 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Deferred grazing. Postponing grazing or arresting grazing for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

Dip slope. A slope of the land surface, roughly determined by and approximately conforming with the dip of underlying bedded rock.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Divided-slope farming. A form of field stripcropping in which crops are grown in a systematic arrangement of two strips, or bands, across the slope to reduce the hazard of water erosion. One strip is in a close-growing crop that provides protection from erosion, and the other strip is in a crop that provides less protection from erosion. This practice is used where slopes are not long enough to permit the use of a full stripcropping pattern.

Dominant trees. Trees whose crowns form the general level of the forest canopy and that receive full light from above and from the sides.

Drainage class (natural). Refers to the frequency and duration of periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.--These soils have very high and high hydraulic conductivity and a low water-holding capacity. They are not suited to crop production unless irrigated.

Somewhat excessively drained.--These soils have high hydraulic conductivity and a low water-holding capacity. Without irrigation, only a narrow range of crops can be grown and yields are low.

Well drained.--These soils have an intermediate water-holding capacity. They retain optimum amounts of moisture, but they are not wet close enough to the surface or long enough during the growing season to adversely affect yields.

Moderately well drained.--These soils are wet close enough to the surface or long enough that planting or harvesting operations or yields of some field crops are adversely affected unless a drainage system is installed. Moderately well drained soils commonly have a layer with low hydraulic conductivity, a wet layer relatively high in the profile, additions of water by seepage, or some combination of these.

Somewhat poorly drained.--These soils are wet close enough to the surface or long enough that planting or harvesting operations or crop growth is markedly restricted unless a drainage system is installed. Somewhat poorly drained soils commonly have a layer with low hydraulic conductivity, a wet layer high in the profile, additions of water through seepage, or a combination of these.

Poorly drained.--These soils commonly are so wet at or near the surface during a considerable part of the year that field crops cannot be grown under natural conditions. Poorly drained conditions are caused by a saturated zone, a layer with low hydraulic conductivity, seepage, or a combination of these.

Very poorly drained.--These soils are wet to the surface most of the time. The wetness prevents the growth of important crops (except rice) unless a drainage system is installed.

Drainage, surface. Runoff, or surface flow of water, from an area.

Drainageway. An area of ground at a lower elevation than the surrounding ground and in which water collects and is drained to a closed depression or lake or to a drainageway at a lower elevation. A drainageway may or may not have distinctly incised channels at its upper reaches or throughout its course.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

Duff. A term used to identify a generally firm organic layer on the surface of mineral soils. It consists of fallen plant material that is in the process of decomposition and includes everything from the litter on the surface to underlying pure humus.

Dune. A mound, ridge, or hill of loose, windblown granular material (generally sand), either bare or covered with vegetation.

Eluviation. The movement of material in true solution or colloidal suspension from one place to another within the soil. Soil horizons that have lost material through eluviation are eluvial; those that have received material are illuvial.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, for example, fire, that exposes the surface.

Erosion pavement. A layer of gravel or stones that remains on the surface after fine particles are removed by sheet or rill erosion.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. The term is more often applied to cliffs resulting from differential erosion.

Esker. A long, narrow, sinuous, steep-sided ridge composed of irregularly stratified sand and gravel that were deposited by a subsurface stream flowing between ice walls or through ice tunnels of a retreating glacier and that were left behind when the ice melted. Eskers range from less than a mile to more than 100 miles in length and from 10 to 100 feet in height.

Even aged. Refers to a stand of trees in which only small differences in age occur between the individuals. A range of 20 years is allowed.

Excess fines (in tables). Excess silt and clay in the soil. The soil does not provide a source of gravel or sand for construction purposes.

Excess lime (in tables). Excess carbonates in the soil that restrict the growth of some plants.

Excess salts (in tables). Excess water-soluble salts in the soil that restrict the growth of most plants.

Excess sodium (in tables). Excess exchangeable sodium in the soil. The resulting poor physical properties restrict the growth of plants.

Excess sulfur (in tables). Excessive amount of sulfur in the soil. The sulfur causes extreme acidity if the soil is drained, and the growth of most plants is restricted.

Extrusive rock. Igneous rock derived from deep-seated molten matter (magma) emplaced on the earth's surface.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

Fast intake (in tables). The rapid movement of water into the soil.

Fertility, soil. The quality that enables a soil to provide plant nutrients, in adequate amounts and in proper balance, for the growth of specified plants when light, moisture, temperature, tilth, and other growth factors are favorable.

Fibric soil material (peat). The least decomposed of all organic soil material. Peat contains a large amount of well preserved fiber that is readily identifiable according to botanical origin. Peat has the lowest bulk density and the highest water content at saturation of all organic soil material.

Field moisture capacity. The moisture content of a soil, expressed as a percentage of the ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity.*

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. A firebreak also serves as a line from which to work and to facilitate the movement of fire fighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that is, by volume, 15 to 35 percent flagstones. Very flaggy soil material is 35 to 60 percent flagstones, and extremely flaggy soil material is more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to inundation under flood-stage conditions unless protected artificially. It is usually a constructional landform built of sediment deposited during overflow and lateral migration of the stream.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

Foothills. A region of relatively low, rounded hills at the base of a mountain range.

Foot slope. The geomorphic component that forms the inner, gently inclined surface at the base of a hill slope. The surface profile is dominantly concave. In terms of gradational processes, a foot slope is a transition zone between an upslope site of erosion (back slope) and a downslope site of deposition (toe slope).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragile (in tables). A soil that is easily damaged by use or disturbance.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Giant ripple mark. The undulating surface sculpture produced in noncoherent granular materials by currents of water and by the agitation of water in wave action during the draining of large glacial lakes, such as Glacial Lake Missoula.

Glacial drift (geology). Pulverized and other rock material transported by glacial ice and then deposited. Also, the sorted and unsorted material deposited by streams flowing from glaciers.

Glacial outwash (geology). Gravel, sand, and silt, commonly stratified, deposited by glacial meltwater.

Glacial till (geology). Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

Glaciated uplands. Land areas that were previously covered by continental or alpine glaciers and that are at a higher elevation than the flood plain.

Glaciofluvial deposits (geology). Material moved by glaciers and subsequently sorted and deposited by streams flowing from the melting ice. The deposits are stratified and occur as kames, eskers, deltas, and outwash plains.

Glaciolacustrine deposits. Material ranging from fine clay to sand derived from glaciers and deposited in glacial lakes mainly by glacial meltwater. Many deposits are interbedded or laminated.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water (geology). Water filling all the unblocked pores of the material below the water table.

Gully. A miniature valley with steep sides cut by running water and through which water ordinarily runs only after rainfall. The distinction between a gully and a rill is one of depth. A gully generally is an obstacle to farm machinery and is too deep to be obliterated by ordinary tillage; a rill is of lesser depth and can be smoothed over by ordinary tillage. A gullied map unit is one that has numerous gullies.

Gypsum. A mineral consisting of hydrous calcium sulfate.

Hard bedrock. Bedrock that cannot be excavated except by blasting or by the use of special equipment that is not commonly used in construction.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

Head out. To form a flower head.

Heavy metal. Inorganic substances that are solid at ordinary temperatures and are not soluble in water. They form oxides and hydroxides that are basic. Examples are copper, iron, cadmium, zinc, manganese, lead, and arsenic.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Hill. A natural elevation of the land surface, rising as much as 1,000 feet above surrounding lowlands, commonly of limited summit area and having a well defined outline; hillsides generally have slopes of more than 8 percent. The distinction between a hill and a mountain is arbitrary and is dependent on local usage.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. The major horizons of mineral soil are as follows:

O horizon.--An organic layer of fresh and decaying plant residue.

A horizon.--The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

B horizon.--The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

E horizon.--The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

C horizon.--The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, the number 2 precedes the letter C.

Cr horizon.--Sedimentary beds of consolidated sandstone and semiconsolidated and consolidated shale. Generally, roots can penetrate this horizon only along fracture planes.

R layer.--Hard, consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon but can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and are less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a constant but is a variable

depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	Very low
0.2 to 0.4	Low
0.4 to 0.75	Moderately low
0.75 to 1.25	Moderate
1.25 to 1.75	Moderately high
1.75 to 2.5	High
More than 2.5	Very high

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are:
Basin.--Water is applied rapidly to nearly level plains surrounded by levees or dikes.
Border.--Water is applied at the upper end of a strip in which the lateral flow of water is controlled by small earth ridges called border dikes, or borders.
Controlled flooding.--Water is released at intervals from closely spaced field ditches and distributed uniformly over the field.
Corrugation.--Water is applied to small, closely spaced furrows or ditches in fields of close-growing crops or in orchards so that it flows in only one direction.
Drip (or trickle).--Water is applied slowly and under low pressure to the surface of the soil or into the soil through such applicators as emitters, porous tubing, or perforated pipe.
Furrow.--Water is applied in small ditches made by cultivation implements. Furrows are used for tree and row crops.
Sprinkler.--Water is sprayed over the soil surface through pipes or nozzles from a pressure system.
Subirrigation.--Water is applied in open ditches or tile lines until the water table is raised enough to wet the soil.
Wild flooding.--Water, released at high points, is allowed to flow onto an area without controlled distribution.

Kame. A moundlike hill of glacial drift, composed chiefly of stratified sand and gravel.

Kame terrace. A terracelike ridge consisting of stratified sand and gravel that were deposited by a meltwater stream flowing between a melting glacier and a higher valley wall or lateral moraine and that remained after the disappearance of the ice. It is commonly pitted with kettles and has an irregular ice-contact slope.

Lacustrine deposit (geology). Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised.

Lake plain. A surface marking the floor of an extinct lake, filled in by well sorted, stratified sediments.

Landslide. The rapid downhill movement of a mass of soil and loose rock, generally when wet or saturated. The speed and distance of movement, as well as the amount of soil and rock material, vary greatly.

Large stones (in tables). Rock fragments 3 inches (7.6 centimeters) or more across. Large stones adversely affect the specified use of the soil.

Lateral moraine. A ridgelike moraine carried on and deposited at the side margin of a valley glacier. It is composed chiefly of rock fragments derived from the valley walls by glacial abrasion and plucking or by mass wasting.

Leaching. The removal of soluble material from soil or other material by percolating water.

Liquid limit. The moisture content at which the soil passes from a plastic to a liquid state.

Loam. Soil material that is 7 to 27 percent clay particles, 28 to 50 percent silt particles, and less than 52 percent sand particles.

Loamy soil. Coarse sandy loam, sandy loam, fine sandy loam, very fine sandy loam, loam, silt loam, silt, clay loam, sandy clay loam, or silty clay loam.

Loess. Fine grained material, dominantly of silt-sized particles, deposited by the wind.

Low-residue crops. Crops such as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

Marl. An earthy, unconsolidated deposit consisting chiefly of calcium carbonate mixed with clay in approximately equal amounts.

Mean annual increment (MAI). The average annual increase in volume of a tree during the entire life of the tree.

Mechanical treatment. Use of mechanical equipment for seeding, brush management, and other management practices.

Medium textured soil. Very fine sandy loam, loam, silt loam, or silt.

Merchantable trees. Trees that are of sufficient size to be economically processed into wood products.

Metamorphic rock. Rock of any origin altered in mineralogical composition, chemical composition, or structure by heat, pressure, and movement. Nearly all such rocks are crystalline.

Microhigh. An area that is 2 to 12 inches higher than the adjacent microlow.

Microlow. An area that is 2 to 12 inches lower than the adjacent microhigh.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Miscellaneous water. Areas of sewerage lagoons, industrial waste pits, and fish hatcheries, etc.

Moderately coarse textured soil. Coarse sandy loam, sandy loam, or fine sandy loam.

Moderately deep soil. A soil that is 20 to 40 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Moderately fine textured soil. Clay loam, sandy clay loam, or silty clay loam.

Moraine. An accumulation of glacial drift in a topographic landform of its own, resulting chiefly from the direct action of glacial ice. Some types are lateral, recessional, and terminal.

Morphology, soil. The physical makeup of the soil, including the texture, structure, porosity, consistence, color, and other physical, mineral, and biological properties of the various horizons, and the thickness and arrangement of those horizons in the soil profile.

Mottling, soil. Irregular spots of different colors that vary in number and size. Mottling generally indicates poor aeration and impeded drainage. Descriptive terms are as follows: abundance--*few, common,* and *many*; size--*fine, medium,* and *coarse*; and contrast--*faint, distinct,* and *prominent*. The size measurements are of the diameter along the greatest dimension. *Fine* indicates less than 5 millimeters (about 0.2 inch); *medium*, from 5 to 15 millimeters (about 0.2 to 0.6 inch); and *coarse*, more than 15 millimeters (about 0.6 inch).

Mountain. A natural elevation of the land surface, rising more than 1,000 feet above surrounding lowlands, commonly of limited summit area and generally having steep sides (slopes greater than 25 percent) and considerable bare-rock surface. A mountain can occur as a single, isolated mass or in a group forming a chain or range. Mountains are primarily formed by deep-seated earth movements or volcanic action and secondarily by differential erosion.

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

Munsell notation. A designation of color by degrees of three simple variables--hue, value, and chroma. For example, a notation of 10YR 6/4 is a color with hue of 10YR, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

Nutrient, plant. Any element taken in by a plant essential to its growth. Plant nutrients are mainly nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, iron, manganese, copper, boron, and zinc obtained from the soil and carbon, hydrogen, and oxygen obtained from the air and water.

Observed rooting depth. Depth to which roots have been observed to penetrate.

Organic matter. Plant and animal residue in the soil in various stages of decomposition.

Outwash plain. An extensive area of glaciofluvial material that was deposited by meltwater streams.

Overstory. The trees in a forest that form the upper crown cover.

Oxbow. The horseshoe-shaped channel of a former meander, remaining after the stream formed a cutoff across a narrow meander neck.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, *hardpan, fragipan, claypan, plowpan,* and *traffic pan*.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedon. The smallest volume that can be called "a soil." A pedon is three dimensional and large enough to permit study of all horizons. Its area ranges from about 10 to 100 square feet (1 square meter to 10 square meters), depending on the variability of the soil.

Percolation. The downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil, adversely affecting the specified use.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

Very slow	Less than 0.06 inch
Slow	0.06 to 0.2 inch
Moderately slow	0.2 to 0.6 inch
Moderate	0.6 inch to 2.0 inches
Moderately rapid	2.0 to 6.0 inches
Rapid	6.0 to 20 inches
Very rapid	More than 20 inches

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and thickness.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Playa. The generally dry and nearly level lake plain that occupies the lowest parts of closed depressional areas, such as those on intermontane basin floors. Temporary flooding occurs primarily in response to precipitation and runoff.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. The water can be removed only by percolation or evapotranspiration.

Poor filter (in tables). Because of rapid permeability or an impermeable layer near the surface, the soil may not adequately filter effluent from a waste disposal system.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor outlets (in tables). Refers to areas where surface or subsurface drainage outlets are difficult or expensive to install.

Potential native plant community. See Climax plant community.

Potential rooting depth (effective rooting depth). Depth to which roots could penetrate if the content of moisture in the soil were adequate. The soil has no properties restricting the penetration of roots to this depth.

Prescribed burning. The application of fire to land under such conditions of weather, soil moisture, and time of day as presumably will result in the intensity of heat and spread required to accomplish specific forest management, wildlife, grazing, or fire hazard reduction purposes.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Proper grazing use. Grazing at an intensity that maintains enough cover to protect the soil and maintain or improve the quantity and quality of the desirable vegetation. This practice increases the vigor and reproduction capacity of the key plants and promotes the accumulation of litter and mulch necessary to conserve soil and water.

Quartzite, metamorphic. Rock consisting mainly of quartz that formed through recrystallization of quartz-rich sandstone or chert.

Quartzite, sedimentary. Very hard but unmetamorphosed sandstone consisting chiefly of quartz grains.

Range condition. The present composition of the plant community on a range site in relation to the potential natural plant community for that site. Range condition is expressed as excellent, good, fair, or poor on the basis of how much the present plant community has departed from the potential.

Rangeland. Land on which the potential natural vegetation is predominantly grasses, grasslike plants, forbs, or shrubs suitable for grazing or browsing. It includes natural grasslands, savannas, many wetlands, some deserts, tundras, and areas that support certain forb and shrub communities.

Range site. An area of rangeland where climate, soil, and relief are sufficiently uniform to produce a distinct natural plant community. A range site is the product of all the environmental factors responsible for its development. It is typified by an association of species that differ from those on other range sites in kind or proportion of species or total production.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degrees of acidity or alkalinity, expressed as pH values, are:

Extremely acid	Below 4.5
Very strongly acid	4.5 to 5.0
Strongly acid	5.1 to 5.5
Medium acid	5.6 to 6.0
Slightly acid	6.1 to 6.5
Neutral	6.6 to 7.3
Mildly alkaline	7.4 to 7.8
Moderately alkaline	7.9 to 8.4
Strongly alkaline	8.5 to 9.0
Very strongly alkaline	9.1 and higher

Recessional moraine. A moraine formed during a temporary but significant halt in the retreat of a glacier.

Red beds. Sedimentary strata mainly red in color and composed largely of sandstone and shale.

Regeneration. The new growth of a natural plant community, developing from seed.

Regolith. The unconsolidated mantle of weathered rock and soil material on the earth's surface; the loose earth material above the solid rock.

Relict stream terrace. One of a series of platforms in or adjacent to a stream valley that formed prior to the current stream system.

Relief. The elevations or inequalities of a land surface, considered collectively.

Residuum (residual soil material). Unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place.

Rill. A steep-sided channel resulting from accelerated erosion. A rill is generally a few inches deep and not wide enough to be an obstacle to farm machinery.

Riser. The relatively short, steeply sloping area below a terrace tread that grades to a lower terrace tread or base level.

Riverwash. Unstable areas of sandy, silty, clayey, or gravelly sediments. These areas are flooded, washed, and reworked by rivers so frequently that they support little or no vegetation.

Road cut. A sloping surface produced by mechanical means during road construction. It is commonly on the uphill side of the road.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rock outcrop. Exposures of bare bedrock other than lava flows and rock-lined pits.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Rubble land. Areas that have more than 90 percent of the surface covered by stones or boulders. Voids contain no soil material and virtually no vegetation other than lichens. The areas commonly are at the base of mountain slopes, but some are on mountain slopes as deposits of cobbles, stones, and boulders left by Pleistocene glaciation or by periglacial phenomena.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs the growth of plants. A saline soil does not contain excess exchangeable sodium.

Salinity. The electrical conductivity of a saline soil. It is expressed, in millimhos per centimeter, as follows:

Nonsaline	0 to 4
Slightly saline	4 to 8
Moderately saline	8 to 16
Strongly saline	More than 16

Salty water (in tables). Water that is too salty for consumption by livestock.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

Sandy soil. Sand or loamy sand.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Sawlogs. Logs of suitable size and quality for the production of lumber.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Scribner's log rule. A method of estimating the number of board feet that can be cut from a log of a given diameter and length.

Sedimentary plain. An extensive nearly level to gently rolling or moderately sloping area that is underlain by sedimentary bedrock and that has a slope of 0 to 8 percent.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Sedimentary uplands. Land areas of bedrock formed from water- or wind-deposited sediments. They are higher on the landscape than the flood plain.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Semiconsolidated sedimentary beds. Soft geologic sediments that disperse when fragments are placed in water. The fragments are hard or very hard when dry. Determining the texture by the usual field method is difficult.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon. (See Eluviation.)

Series, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. All the soils of a series have horizons that are similar in composition, thickness, and arrangement.

Shale. Sedimentary rock formed by the hardening of a clay deposit.

Shallow soil. A soil that is 10 to 20 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Sheet erosion. The removal of a fairly uniform layer of soil material from the land surface by the action of rainfall and surface runoff.

Shelterwood system. A forest management system requiring the removal of a stand in a series of cuts so that regeneration occurs under a partial canopy. After regeneration, a final cut removes the shelterwood and allows the stand to develop in the open as an even-aged stand. The system is well suited to sites where shelter is needed for regeneration, and it can aid regeneration of the more intolerant tree species in a stand.

Shoulder slope. The uppermost inclined surface at the top of a hillside. It is the transition zone from the back slope to the summit of a hill or mountain. The surface is dominantly convex in profile and erosional in origin.

Shrink-swell (in tables). The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

Silica. A combination of silicon and oxygen. The mineral form is called quartz.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. Sedimentary rock made up of dominantly silt-sized particles.

Similar soils. Soils that share limits of diagnostic criteria, behave and perform in a similar manner, and have similar conservation needs or management requirements for the major land uses in the survey area.

Sinkhole. A depression in the landscape where limestone has been dissolved.

Site class. A grouping of site indexes into five to seven production capability levels. Each level can be represented by a site curve.

Site curve (50-year). A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for the range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of

dominant or dominant and codominant trees that are 50 years old or are 50 years old at breast height.

Site curve (100-year). A set of related curves on a graph that shows the average height of dominant or dominant and codominant trees for a range of ages on soils that differ in productivity. Each level is represented by a curve. The basis of the curves is the height of dominant or dominant and codominant trees that are 100 years old or are 100 years old at breast height.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant or dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Skid trails. Pathways along which logs are dragged to a common site for loading onto a logging truck.

Slash. The branches, bark, treetops, reject logs, and broken or uprooted trees left on the ground after logging.

Slickens. Accumulations of fine-textured material, such as material separated in placer-mine and ore-mill operations. Slickens from ore mills commonly consist of freshly ground rock that has undergone chemical treatment during the milling process.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slick spot. A small area of soil having a puddled, crusted, or smooth surface and an excess of exchangeable sodium. The soil generally is loamy or clayey, is slippery when wet, and is low in productivity.

Slippage (in tables). Soil mass susceptible to movement downslope when loaded, excavated, or wet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey the following slope classes are recognized:

Nearly level	0 to 2 percent
Gently sloping	2 to 4 percent
Moderately sloping	4 to 8 percent
Strongly sloping	8 to 15 percent
Moderately steep	15 to 25 percent
Steep	25 to 45 percent
Very steep	More than 45 percent

Slope (in tables). Slope is great enough that special practices are required to ensure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.6 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na^{+} to $Ca^{++} + Mg^{++}$. The degrees of sodicity and their respective ratios are:

Slight	Less than 13:1
Moderate	13-30:1
Strong	More than 30:1

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized

in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	Less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Species. A single, distinct kind of plant or animal having certain distinguishing characteristics.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

Strath terrace. A surface cut formed by the erosion of hard or semiconsolidated bedrock and thinly mantled with stream deposits.

Stream channel. The hollow bed where a natural stream of surface water flows or may flow; the deepest or central part of the bed, formed by the main current and covered more or less continuously by water.

Stream terrace. One of a series of platforms in a stream valley, flanking and more or less parallel to the stream channel. It originally formed near the level of the stream and is the dissected remnants of an abandoned flood plain, streambed, or valley floor that were produced during a former stage of erosion or deposition.

Stripcropping. Growing crops in a systematic arrangement of strips or bands that provide vegetative barriers to soil blowing and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are: *platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter or loosen a layer that is restrictive to roots.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the E horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. A general term for the top, or highest level, of an upland feature, such as a hill or mountain. It commonly refers to a higher area that has a gentle slope and is flanked by steeper slopes.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the "plow layer," or the "Ap horizon."

Tailwater. The water directly downstream of a structure.

Talus. Rock fragments of any size or shape, commonly coarse and angular, derived from and lying at the base of a cliff or very steep rock slope. The accumulated mass of such loose, broken rock formed chiefly by falling, rolling, or sliding.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ

in ways too small to be of consequence in interpreting their use and behavior.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances. It commonly is a massive arcuate ridge or complex of ridges underlain by till and other types of drift.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field is generally built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). A layer of otherwise suitable soil material that is too thin for the specified use.

Till plain. An extensive nearly level to gently rolling or moderately sloping area that is underlain by or consists of till and that has a slope of 0 to 8 percent.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base of a hill. Toe slopes are commonly gentle and linear in profile.

Too arid (in tables). The soil is dry most of the time, and vegetation is difficult to establish.

Topsoil. The upper part of the soil, which is the most favorable material for plant growth. It is ordinarily rich in organic matter and is used to topdress roadbanks, lawns, and land affected by mining.

Toxicity (in tables). Excessive amount of toxic substances, such as sodium or sulfur, that severely hinder establishment of vegetation or severely restrict plant growth.

Trace elements. Chemical elements, for example, zinc, cobalt, manganese, copper, and iron, are in soils in extremely small amounts. They are essential to plant growth.

Trafficability. The degree to which a soil is capable of supporting vehicular traffic across a wide range in soil moisture conditions.

Tread. The relatively flat terrace surface that was cut or built by stream or wave action.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

Understory. Any plants in a forest community that grow to a height of less than 5 feet.

Unstable fill (in tables). Risk of caving or sloughing on banks of fill material.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley. An elongated depressional area primarily developed by stream action.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Very deep soil. A soil that is more than 60 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Very shallow soil. A soil that is less than 10 inches deep over bedrock or to other material that restricts the penetration of plant roots.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Waterspreading. Diverting runoff from natural channels by means of a system of dams, dikes, or ditches and spreading it over relatively flat surfaces.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The action of uprooting and tipping over trees by the wind.