File Doolittle

United States Department of Agriculture
Soil Conservation Service **Chester, PA 19013**

Subject: Ground-Penetrating Radar (GPR) Field Assistance; 13-25 September 1993 **Date:** 28 September 1993

To: Norman Kallock
State Soil Scientist
USDA-Soil Conservation Service
Orono, Maine

Purpose:
To provide transect data on the depth to bedrock in various map units in Washington County (see pages 4 to 27) and in the "Big Woods" Soil Survey Area of Maine (see pages 30 to 88). In Kennebec County, used GPR and computer graphic techniques to assess the depth to bedrock and the suitability of a site for an animal-waste storage system (see pages 28 and 29).

Principal Participants:
Don Clark, Soil Scientist, SCS, Machais, ME
Jim Doolittle, Soil Specialist, SSQAS, SCS, Chester, PA
Candace Dykeman, Agricultural Engineer, SCS, Lewiston, ME
Gary Hedstrom, Soil Scientist, SCS, Princeton, ME
Wayne Hoar, Soil Scientist, SCS, Rangeley, ME
Lisa Krall, Soil Resource Specialist, SCS, Lewiston, ME
Jonathan Miller, Soil Party Leader, SCS, Rangeley, ME
David Popp, Soil Scientist, SCS, Princeton, ME
Dave Wilkinson, Soil Survey Party Leader, SCS, Machais, ME
Lindsay Tulloch, District Conservationist, SCS, Augusta, ME

Activities:
The following is a summary of transects completed with GPR:

Washington County (14-16 September 1993)

TOPOGRAPHIC QUAD	TRANSECTS	OBS.	MILES OF DATA
Princeton	19	187	3.54
Woodward & Meddybemps Lake W.	18	189	3.57
Machais	8	83	1.57
TOTALS:	45	459	8.68

"Big Woods" (20-24 September 1993)
The unincorporated areas of Franklin, Oxford and Somerset Counties

TOPOGRAPHIC QUAD	TRANSECTS	OBS.	MILES OF DATA
Kennebago Lake	33	331	5.64
Cupsuptic	16	154	2.61
Rangeley	46	439	7.44
Spencer Lake & Stratton	23	226	3.84
TOTALS:	118	1150	19.53

Equipment:
The ground-penetrating radar used in this study is the Subsurface Interface Radar (SIR) System-8 manufactured by Geophysical Survey Systems, Inc. Components of the SIR System-8 used in this study were the model 4800 control unit, ADTEK SR 8004H graphic recorder, power distribution unit, transmission cable (30 m), and the model 3110 (120 mHz) antenna. The system was powered by a 12-volt battery.

On 14 September, calibration trials were completed in Washington County to determine the velocity of signal propagation through tills, depth scale for radar profiles, and the depth of observation. For these trials, a metallic reflector was buried at a depth of 20 inches. The calculated velocity of propagation was 0.116 feet/nanoseconds (ns). With a scanning time of 140 ns, bedrock investigations used a maximum profiling depth of 16.3 feet.

All transects were conducted along access roads. Transect were confined to delineated areas of recognized soil map units. When appropriate, longer transects were subdivided, into 1000 foot units that contained 10 equally-spaced observation points. A 100 foot interval was used between observation points. Though GPR provides a continuous record of subsurface conditions, estimates of the depth to bedrock were restricted to the observation points. At each observation point, soil drainage class was inferred from vegetation and landscape position.

The "start" and "end" locations of each long transects (continuous run made along a roadway and across a soil map unit delineation) were determined with a Voyager LORAN Navigator. These locations were not determined for each of the subdivisions of longer transects.

Discussion:
I happy to report the completion of a very productive "quality assurance" field investigation. Multiple transects were completed in eleven map units in Washington County and eighteen map units in the "Big Woods." Data will be used to assess the taxonomic composition of map units. Compared with the 1992 investigations, the smaller interval between observation sites resulted in the collection of more data.

I remain convinced that, compared with traditional surveying methods, GPR is less labor intensive, less time-consuming, and is presently the most efficient method for collecting data on the depths to bedrock for soil map units in Maine and northern New England. Considering the difficult terrain and soil conditions in these areas, and the ineffectiveness of conventional survey tools for determining the depth to bedrock, radar interpretations of the depth to bedrock are considered more reliable than auger or shovel observations.

Lisa Krall received training on the use of the EM38 meter. If sites are being assessed by SCS personnel in Maine for potential contamination from point sources, the use of electromagnetic induction techniques should be explored. The National Soil Survey Quality Assurance Staff can provide training and the loan of EM meters to states for limited periods (1 to 3 months).

Our field investigations were reported in the Morning Sentinel and Kennebec Journal. Copies of these articles are included in this report.

It was my pleasure to work in your state and with members of your fine staff.

With kind regards.

James A. Doolittle
Soil Specialist

cc:
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C. Holzhey, Assistant Director, NSSC, SCS, Lincoln, NE
B. Hudson, Supervisory Soil Scientist, SSQA Staff, NSSC, SCS, Lincoln, NE
J. Miller, Soil Party Leader, SCS, Main Street, P.O. Box 114, Rangeley, ME 04970
D. Wilkinson, Soil Party Leader, SCS, Federal Bldg. & Post Office, 49 Court Street, Machais, ME 04654

New 'Rover' sniffs out Machiasport bedrock

Radar units make testing the soil a breeze

By Clayton Beal
Of the NEWS Staff

MACHIAS — While fishermen use radar to make graphic recordings of the ocean floor and soldiers use it to find enemy burrows, soil scientists now use radar's reflected radio waves to measure and map bedrock contours for determining future land uses.

Jim Doolittle of Pennsylvania, a research soil scientist for the U.S. Soil Conservation Service, said Thursday that radar units similar to his new geophysical tool were used during the Vietnam War to identify underground tunnels. In 1981, the SCS began using the radar units as bedrock finders.

On Thursday, Doolittle's radar unit was applied at Machiasport to assist a soil survey project being completed in Washington County.

Doolittle's "Rover" traced bedrock continuously as the scientist pulled the instrument's antenna over the surface of the ground. A computerized graphic recording device created a visual image of the bedrock while the antenna, encased in a sled-like box, was pulled over the ground. At times, the sled was towed on selected roads behind the scientist's truck.

Dave Wilkinson, leader of a soil survey project that has mapped 75 percent of Washington County from Princeton south, said the radar unit provided detailed information that will be incorporated into some of his soil survey maps. "The beneficiaries from our maps and this new technology are the construction contractors, foresters, and landowners who want to know what is under the surface of the ground."

Don Clark and Sue Lee, both soil scientists for SCS, are working with Wilkinson to complete the countywide survey that was started in 1987.

Developers need to know where bedrock is located, the composition of soil types, and depth of soil resting on bedrock. "To avoid costly environmental problems, would-be installers of septic systems need to know this information," Wilkinson said. Also, foresters armed with accurate soil survey maps can determine how to avoid "tree-throws" because the soil was too shallow for trees to anchor their roots. Other trees are lost by drought because the soil was too shallow to hold water.

Doolittle operated his $100,000 radar unit on more than 12 lineal miles in the county during a three-day working visit. Princeton, Woodland, Meddybemps Lake, and Machiasport were among the target areas selected by Wilkinson for radar scanning.

On Friday, Doolittle will take the bedrock-finder to Augusta, where it will be used in an engineering assessment survey for a waste holding-facility that is being engineered by SCS. Also, bedrock in Rangley and in some nearby unorganized township areas will be probed in the gathering of details for soils maps.

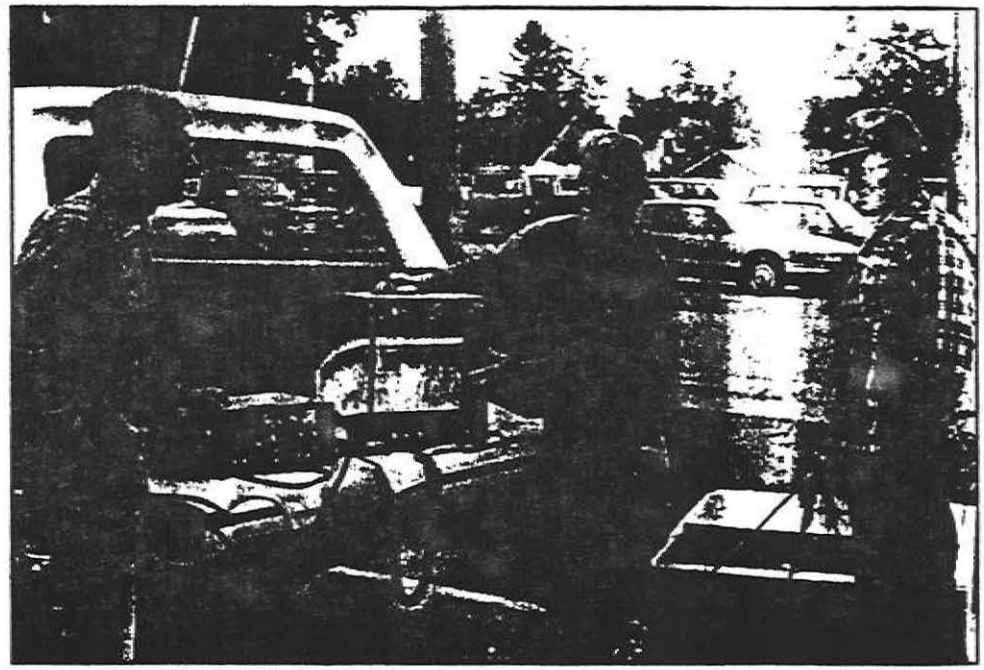
Only five of the machines are used by SCS in the nation. Three are in Florida, one is in Massachusetts, and Doolittle has the "Rover" which is equipped with a variety of antennas and equipment useable on virtually any type of terrain. Although the Rover is valued at about $100,000, the average unit is priced at $20,000 to $40,000.

After Doolittle completes his two-week assignment for SCS projects in the state, he will move on to other SCS projects. He has worked the radar in 46 of 50 states and in some foreign territories. "It is an expensive unit and we've got to keep it working," he said.

Because most of Maine's topsoil is not high in clay content, the radar is able to function ideally. Clay, which is dominant in some coastal areas, blocks the reflective radio waves.

The new radar probe, Wilkinson said, was an outstanding benefit to his project because it produced results in minutes, while the same results would have required days of work by a soil scientist armed with a shovel. "We usually have to dig a hole every 100 feet to try to locate bedrock. That effort involves work and money," he said.

In Florida, Doolittle did a comparison benefits study and found that his radar increased productivity by 210 percent, while holding down field costs by 70 percent.



JIM DOOLITTLE (left) of the U.S. Soil Conservation Service explains the use of new radar technology in pinpointing the location of bedrock. Graphic recorded information can be used to enhance soil survey maps. The mobile machine is one of five being used in the nation by SCS. Looking on are Dave Wilkinson, leader of a six-year soil survey project in Washington County, and Don Clark, soil scientist with the project. (NEWS Photo by Clayton Beal)

Radar profile

Sentinel photo by Ron Maxwell

Carlton Fitzgerald, left, China farmer and James Doolittle, researcher, look at radar profile showing depth of bedrock.

Sentinel - 9-2-93

Radar sniffs soil for lagoon

By JOE RANKIN
Sentinel Staff

CHINA — Jim Doolittle has searched for the former location of an Indian long house in Vermont, for buried warheads in Hawaii, and for old graves in Virginia.

Friday he was helping pinpoint the best site for a manure lagoon on a local dairy farm.

Doolittle's tool of choice: ground penetrating radar (GPR) that can help map soil layers without turning a clod.

Developed during the Vietnam War to help find Viet Cong tunnel systems, the low-frequency radar is used these days to scope out archaeological sites, locate underground storage tanks, and help determine the accuracy of soil surveys.

"Anything you can sense or find in soil, this will pick up," said Doolittle, who lives in Philadelphia but spends much of the year traveling with his radar on behalf of the U.S. Soil Conservation Service.

Lisa Krall, the SCS' soil scientist for southern Maine, suggested Doolittle's technology might be able to help dairy farmer Carlton Fitzgerald find a suit-

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• Radar

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able lagoon site — one with deep enough soils — without leaving his fields looking like a monster mole had run amok.

Getting the correct spot is important because of the farm's environmentally sensitive location in the China Lake watershed, said Lindsay Tullock, the district conservationist for Kennebec County.

n Friday, a 600-by-600 foot area was staked out in a grid with little orange flags every 100 feet. Driving a pickup, Doolittle pulled the bright blue sled with the radar unit at a walking pace along the grid.

The radar's findings were translated into an EKG-like chart on another machine inside the truck. Computer simulations would be used to fill in the gaps. A second method of charting, using electro-magnetic induction, would be used to double check.

The preliminary news wasn't good. It showed bedrock from two to eight feet down in most of the area. Fitzgerald needs to go down about 10 feet over a 100 foot-by-120 foot area for his lagoon.

Doolittle stresses that the radar is accurate to within a couple of feet when looking at something as hard-edged as the place where bedrock meets soil. But the technology works better in some soils than others.

Clay soils are the worst. The small clay particles tend to absorb radio waves. The rocks and pebbles in Maine soils pose a problem with interpreting the data. The radar is useless in soils with high salt content.

The GPR unit couldn't be put to the test around one of Fitzgerald's barns, for instance, because the salts excreted by herds of cows over the decades made it difficult for the radar to penetrate the near surface.

Doolittle has been ranging the U.S. with his radar unit since 1981. He's been in 46 states and half a dozen foreign countries, including Israel, El Salvador, Indonesia, and Finland.

In Vermont he used it to plot the boundaries of an old Abenaki burial ground and to locate the site of a former Indian long house. At Manassas Battlefield he looked for a buried house site. At Marshall Hall Plantation in Virginia he used it to pinpoint three grave sites that were outside the plantation cemetery proper. At the home of former president James Madison he used it to locate the house's privy.

In the Hawaiian Islands he has used it to look for everything from graves to prehistoric fire rings and unexploded military ordnance at old military target sites.

"Nine out of 10 shells it'll pick up. The tenth one blows you up," he said with a laugh.

Recently Doolittle and his electronic pal spent time in Washington County doing soil-survey work. Later they would do a similar job in the Rangeley area.

Carlton Fitzgerald's farm was the first place he had used it to try to locate the site for a new structure in Maine. Tulloch and Krall said if it works out, other farmers might be able to get SCS radar help in siting manure lagoons.

Doolittle is always looking for ways to use his tool more effectively, and he still enjoys the work. "There's never been a long day, there's never been a bad site. You always learn something, even if it's only humility."

military target sites.

Radar saves time for China farmer

By JOE RANKIN
Guy Gannett Service

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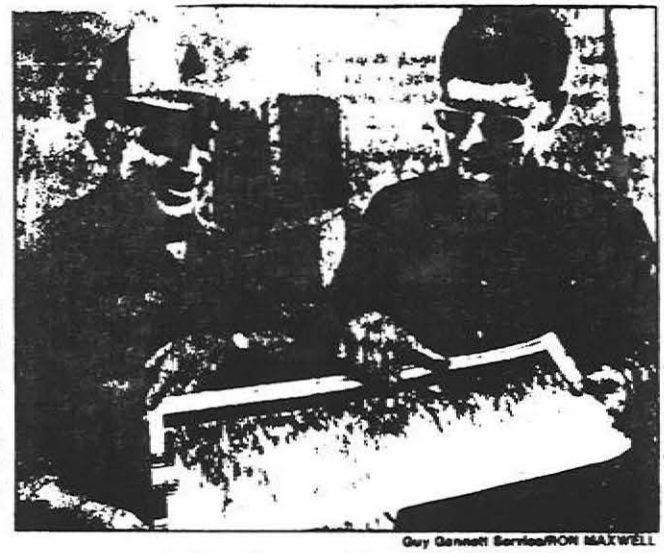

Guy Gannett Service/RON MAXWELL

Carlton Fitzgerald, China farmer, and James Doolittle look at a radar profile showing the depth of bedrock at Fitzgerald's farm.

Kennebec Journal - 9-20-93

Radar

FROM PAGE ONE

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Results:
The following tables summarize observations for each transect according to soil depth and drainage classes. At each observation site, soil depths were estimated from radar interpretations. Drainage classes were estimated based on vegetation and landscape position.

Percentages found in the second table for each map unit (extreme right-hand column) are for soil depth class. Areas of very poorly drained soils were combined with areas of poorly drained soils in the second table.

WASHINGTON COUNTY

Map unit: 340C Chesuncook-Elliottsville-Telos complex, strongly sloping, very stony
Location: 45°10.69' 67°31.97' to 45°11.32' 67°32.55'
Transect 1

Observation	Depth	Drainage
100	76 inches	WD
200	90 inches	MWD
300	44 inches	MWD
400	84 inches	MWD
500	54 inches	MWD
600	50 inches	MWD
700	24 inches	MWD
800	63 inches	WD
900	77 inches	WD
1000	31 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	2	0	0	----- 20%
40 - 60 inches	0	0	3	0	0	----- 30%
>60 inches	0	3	2	0	0	----- 50%

WASHINGTON COUNTY

Map unit: 340C Chesuncook-Elliottsville-Telos complex, strongly sloping, very stony

Transect 2

Observation	Depth	Drainage
100	60 inches	MWD
200	50 inches	MWD
300	44 inches	MWD
400	50 inches	WD
500	79 inches	MWD
600	60 inches	MWD
700	65 inches	WD
800	21 inches	WD
900	51 inches	WD
1000	56 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	3	2	0	0	----- 50%
>60 inches	0	1	3	0	0	----- 40%

Map unit: 340C Chesuncook-Elliottsville-Telos complex, strongly sloping, very stony

Transect 3

Observation	Depth	Drainage
100	44 inches	WD
200	50 inches	MWD
300	61 inches	MWD
400	36 inches	MWD
500	64 inches	WD
600	38 inches	WD
700	87 inches	MWD
800	67 inches	MWD
900	36 inches	MWD
1000	31 inches	MWD
1100	46 inches	MWD
1200	47 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	3	0	0	----- 33%
40 - 60 inches	0	1	3	0	0	----- 33%
>60 inches	0	1	3	0	0	----- 33%

WASHINGTON COUNTY

Map unit: 340C Chesuncook-Elliottsville-Telos complex, strongly sloping, very stony
Location: 45°10.95' 67°34.03' to 45°10.75' 67°33.73'
Transect 4

Observation	Depth	Drainage
100	19 inches	WD
200	21 inches	WD
300	18 inches	WD
400	19 inches	WD
500	19 inches	WD
600	29 inches	WD
700	5 inches	WD
800	47 inches	MWD
900	40 inches	WD
1000	27 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	5	0	0	0	----- 50%
20 - 40 inches	0	2	1	0	0	----- 30%
40 - 60 inches	0	1	1	0	0	----- 20%
>60 inches	0	0	0	0	0	----- 00%

Map unit: 340C Chesuncook-Elliottsville-Telos complex, strongly sloping, very stony
Transect 5

Observation	Depth	Drainage
100	44 inches	WD
200	56 inches	MWD
300	33 inches	MWD
400	47 inches	MWD
500	49 inches	MWD
600	37 inches	MWD
700	67 inches	WD
800	31 inches	WD
900	34 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	2	2	0	0	----- 44%
40 - 60 inches	0	1	3	0	0	----- 44%
>60 inches	0	1	0	0	0	----- 12%

WASHINGTON COUNTY

Map unit: 340B Telos-Elliottsville-Monarda complex, strongly sloping, very stony
Location: 45°10.49' 67°31.94'
Transect 6

Observation	Depth	Drainage
100	61 inches	MWD
200	31 inches	SWP
300	61 inches	MWD
400	64 inches	MWD
500	56 inches	MWD
600	28 inches	SWP
700	26 inches	MWD
800	21 inches	WD
900	71 inches	SWP
1000	37 inches	MWD
1100	39 inches	MWD
1200	21 inches	MWD
1300	36 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	4	3	0	----- 62%
40 - 60 inches	0	0	1	0	0	----- 07%
>60 inches	0	0	3	1	0	----- 31%

Map unit: 348B Monarda-Telos association, gently sloping, very stony
Transect 7

Observation	Depth	Drainage
100	50 inches	SWP
200	54 inches	PD
300	37 inches	PD
400	28 inches	PD
500	20 inches	PD
600	37 inches	SWP
700	63 inches	SWP
800	131 inches	PD
900	107 inches	PD
1000	68 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	1	3	----- 40%
40 - 60 inches	0	0	0	2	1	----- 30%
>60 inches	0	0	0	1	2	----- 30%

WASHINGTON COUNTY

Map unit: 340B Telos-Elliottsville-Monarda complex, strongly sloping, very stony

Transect 8

Observation	Depth	Drainage
100	21 inches	SWP
200	29 inches	SWP
300	57 inches	WD
400	36 inches	MWD
500	47 inches	SWP
600	37 inches	MWD
700	71 inches	SWP
800	21 inches	PD
900	44 inches	PD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	2	2	1	----- 56%
40 - 60 inches	0	1	0	1	1	----- 33%
>60 inches	0	0	0	1	0	----- 11%

Map unit: 348B Monarda-Telos association, gently sloping, very stony

Transect 9

Observation	Depth	Drainage
100	37 inches	PD
200	43 inches	SWP
300	18 inches	PD
400	57 inches	PD
500	46 inches	PD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	1	----- 20%
20 - 40 inches	0	0	0	0	1	----- 20%
40 - 60 inches	0	0	0	1	2	----- 60%
>60 inches	0	0	0	0	0	----- 00%

WASHINGTON COUNTY

Map unit: 340B Telos-Elliottsville-Monarda complex, gently sloping, very stony

Transect 10

Observation	Depth	Drainage
100	43 inches	PD
200	44 inches	VPD
300	47 inches	PD
400	26 inches	SWP
500	27 inches	SWP
600	40 inches	SWP
700	54 inches	SWP
800	39 inches	SWP
900	57 inches	MWD
1000	36 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	5	0	----- 50%
40 - 60 inches	0	0	1	1	3	----- 50%
>60 inches	0	0	0	0	0	

Map unit: 340B Telos-Elliottsville-Monarda complex, gently sloping, very stony

Transect 11

Observation	Depth	Drainage
100	43 inches	PD
200	97 inches	PD
300	125 inches	PD
400	50 inches	PD
500	66 inches	PD
600	37 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	1	0	----- 17%
40 - 60 inches	0	0	0	0	2	----- 33%
>60 inches	0	0	0	0	3	----- 50

WASHINGTON COUNTY

Map unit: 340C Chesuncook-Elliottsville-Telos complex, strongly sloping, very stony
Location: 45°11.02' 67°33.74' to 45°10.97' 67°35.30'
Transect 12

Observation	Depth	Drainage
100	47 inches	WD
200	34 inches	WD
300	23 inches	MWD
400	37 inches	WD
500	46 inches	SWP
600	27 inches	MWD
700	20 inches	MWD
800	48 inches	SWP
900	30 inches	PD
1000	31 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	1	0	0	----- 10%
20 - 40 inches	0	2	2	1	1	----- 60%
40 - 60 inches	0	1	0	2	0	----- 30%
>60 inches	0	0	0	0	0	

Map unit: 340C Chesuncook-Elliottsville-Telos complex, strongly sloping, very stony
Transect 13

Observation	Depth	Drainage
100	54 inches	MWD
200	54 inches	SWP
300	29 inches	WD
400	40 inches	MWD
500	31 inches	SWP
600	73 inches	WD
700	31 inches	MWD
800	47 inches	WD
900	100 inches	MWD
1000	34 inches	SWP
1100	47 inches	SWP
1200	36 inches	WD
1300	56 inches	WD
1400	53 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	2	2	2	0	----- 43%
40 - 60 inches	0	2	1	3	0	----- 43%
>60 inches	0	1	1	0	0	----- 14%

WASHINGTON COUNTY

Map unit: 340C Chesuncook-Elliottsville-Telos complex, strongly sloping, very stony
Location: 45°10.97' 67°35.30' to 45°10.90' 67°35.40'
Transect 14

Observation	Depth	Drainage
100	30 inches	SWP
200	31 inches	SWP
300	38 inches	MWD
400	34 inches	SWP
500	21 inches	MWD
600	56 inches	SWP
700	36 inches	MWD
800	21 inches	WD
900	40 inches	WD
1000	29 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	3	3	3	0	----- 90%
40 - 60 inches	0	0	0	1	0	----- 10%
>60 inches	0	0	0	0	0	

Map unit: 340C Chesuncook-Elliottsville-Telos complex, strongly sloping, very stony
Transect 15

Observation	Depth	Drainage
100	46 inches	WD
200	46 inches	WD
300	31 inches	MWD
400	31 inches	MWD
500	33 inches	MWD
600	26 inches	MWD
700	54 inches	WD
800	37 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	5	0	0	----- 62%
40 - 60 inches	0	3	0	0	0	----- 38%
>60 inches	0	0	0	0	0	

WASHINGTON COUNTY

Map unit: 341C Monson-Elliottsville complex, strongly sloping, very stony
Location: 45°10.54' 67°34.72' to 45°09.86' 67°32.43'
Transect 16

Observation	Depth	Drainage
100	20 inches	WD
200	86 inches	WD
300	64 inches	WD
400	26 inches	WD
500	33 inches	WD
600	18 inches	MWD
700	28 inches	WD
800	30 inches	SWP
900	26 inches	SWP
1000	21 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	1	0	0	----- 20%
20 - 40 inches	0	3	1	2	0	----- 60%
40 - 60 inches	0	0	0	0	0	
>60 inches	0	2	0	0	0	----- 20%

Map unit: 341C Monson-Elliottsville complex, strongly sloping, very stony
Transect 17

Observation	Depth	Drainage
100	24 inches	MWD
200	31 inches	MWD
300	50 inches	WD
400	44 inches	MWD
500	33 inches	SWP
600	54 inches	WD
700	40 inches	WD
800	71 inches	WD
900	28 inches	WD
1000	21 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	3	2	1	0	----- 60%
40 - 60 inches	0	2	1	0	0	----- 30%
>60 inches	0	1	0	0	0	----- 10%

WASHINGTON COUNTY

Map unit: 341C Monson-Elliottsville complex, strongly sloping, very stony

Transect 18

Observation	Depth	Drainage
100	30 inches	SWP
200	38 inches	WD
300	86 inches	SWP
400	28 inches	MWD
500	13 inches	MWD
600	30 inches	WD
700	36 inches	MWD
800	26 inches	MWD
900	31 inches	WD
1000	49 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	1	0	0	----- 10%
20 - 40 inches	0	3	3	1	0	----- 70%
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	0	0	1	0	----- 10%

Map unit: 341C Monson-Elliottsville complex, strongly sloping, very stony

Transect 19

Observation	Depth	Drainage
100	28 inches	WD
200	30 inches	MWD
300	71 inches	MWD
400	31 inches	MWD
500	21 inches	WD
600	46 inches	WD
700	26 inches	MWD
800	53 inches	WD
900	21 inches	WD
1000	28 inches	MWD
1100	54 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	3	4	0	0	----- 64%
40 - 60 inches	0	2	0	1	0	----- 27%
>60 inches	0	0	1	0	0	----- 09%

WASHINGTON COUNTY

Map unit: 344C Danforth-Elliottsville complex, strongly sloping, very stony
Location: 45°14.77' 67°27.93' to 45°14.50' 67°29.77'
Transect 20

Observation	Depth	Drainage
100	50 inches	WD
200	67 inches	WD
300	69 inches	WD
400	36 inches	WD
500	60 inches	WD
600	66 inches	WD
700	71 inches	WD
800	77 inches	WD
900	46 inches	WD
1000	57 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	4	0	0	0	----- 40%
>60 inches	0	5	0	0	0	----- 50%

Map unit: 344C Danforth-Elliottsville complex, strongly sloping, very stony
Transect 21

Observation	Depth	Drainage
100	28 inches	WD
200	40 inches	WD
300	47 inches	WD
400	34 inches	WD
500	56 inches	WD
600	33 inches	MWD
700	26 inches	MWD
800	54 inches	WD
900	53 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	3	2	0	0	----- 56%
40 - 60 inches	0	4	0	0	0	----- 44%
>60 inches	0	0	0	0	0	

WASHINGTON COUNTY

Map unit: 344C Danforth-Elliottsville complex, strongly sloping, very stony
Location: 45°12.77' 67°28.63' to 45°12.90' 67°28.86'
Transect 22

Observation	Depth	Drainage
100	143 inches	SWP
200	126 inches	WD
300	141 inches	MWD
400	147 inches	SWP
500	128 inches	WD
600	101 inches	WD
700	48 inches	WD
800	58 inches	WD
900	86 inches	WD
1000	67 inches	WD
1100	70 inches	MWD
1200	47 inches	WD
1300	31 inches	WD
1400	67 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 7%
40 - 60 inches	0	3	0	0	0	----- 21%
>60 inches	0	5	3	2	0	----- 72%

Map unit: 344C Danforth-Elliottsville complex, strongly sloping, very stony
Location: 45°12.97' 67°28.91' to 45°13.04' 67°28.72'
Transect 23

Observation	Depth	Drainage
100	54 inches	MWD
200	38 inches	MWD
300	46 inches	SWP
400	61 inches	MWD
500	80 inches	WD
600	108 inches	WD
700	86 inches	WD
800	37 inches	WD
900	56 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	1	0	0	----- 22%
40 - 60 inches	0	0	2	1	0	----- 33%
>60 inches	0	3	1	0	0	----- 45%

WASHINGTON COUNTY

Map unit: 344C Danforth-Elliottsville complex, strongly sloping, very stony
Location: 45°11.97' 67°29.72' to 45°12.00' 67°29.34'
Transect 24

Observation	Depth	Drainage
100	38 inches	WD
200	48 inches	WD
300	47 inches	WD
400	40 inches	WD
500	27 inches	SWP
600	46 inches	SWP
700	111 inches	WD
800	114 inches	WD
900	28 inches	WD
1000	24 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	3	0	1	0	----- 40%
40 - 60 inches	0	2	0	1	0	----- 30%
>60 inches	0	2	0	0	0	----- 20%

Map unit: 344C Danforth-Elliottsville complex, strongly sloping, very stony
Transect 25

Observation	Depth	Drainage
100	97 inches	WD
200	83 inches	MWD
300	58 inches	WD
400	68 inches	WD
500	86 inches	MWD
600	71 inches	MWD
700	30 inches	WD
800	33 inches	WD
900	94 inches	WD
1000	71 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	2	0	0	0	----- 20%
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	4	3	0	0	----- 70%

WASHINGTON COUNTY

Map unit: 338C Dixfield-Tunbridge-Marlow complex, strongly sloping, very stony
Location: 45°07.93' 67°28.19' to 45°07.93' 67°28.21'
Transect 26

Observation	Depth	Drainage
100	57 inches	WD
200	86 inches	WD
300	110 inches	WD
400	80 inches	WD
500	64 inches	WD
600	26 inches	WD
700	57 inches	WD
800	60 inches	WD
900	63 inches	WD
1000	48 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	3	0	0	0	----- 30%
>60 inches	0	6	0	0	0	----- 60%

Map unit: 338C Dixfield-Tunbridge-Marlow complex, strongly sloping, very stony
Location: 45°07.64' 67°28.03' to 45°07.33' 67°28.12'
Transect 27

Observation	Depth	Drainage
100	68 inches	MWD
200	96 inches	WD
300	109 inches	WD
400	74 inches	MWD
500	51 inches	WD
600	103 inches	MWD
700	98 inches	WD
800	76 inches	MWD
900	28 inches	WD
1000	86 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	4	4	0	0	----- 80%

WASHINGTON COUNTY

Map unit: 338C Dixfield-Tunbridge-Marlow complex, strongly sloping, very stony

Transect 28

Observation	Depth	Drainage
100	57 inches	WD
200	76 inches	WD
300	48 inches	WD
400	68 inches	MWD
500	86 inches	MWD
600	97 inches	WD
700	53 inches	WD
800	66 inches	WD
900	70 inches	MWD
1000	78 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	3	0	0	0	----- 30%
>60 inches	0	3	4	0	0	----- 70%

Map unit: 344C Danforth-Elliottsville complex, strongly sloping, very stony

Location: 45°07.33' 67°28.12' to 45°07.00' 67°28.29'

Transect 29

Observation	Depth	Drainage
100	84 inches	MWD
200	81 inches	MWD
300	63 inches	WD
400	33 inches	MWD
500	73 inches	WD
600	71 inches	WD
700	84 inches	WD
800	54 inches	WD
900	27 inches	WD
1000	24 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	2	0	0	----- 30%
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	4	2	0	0	----- 60%

WASHINGTON COUNTY

Map unit: 338C Dixfield-Tunbridge-Marlow complex, strongly sloping, very stony

Transect 28

Observation	Depth	Drainage
100	57 inches	WD
200	76 inches	WD
300	48 inches	WD
400	68 inches	MWD
500	86 inches	MWD
600	97 inches	WD
700	53 inches	WD
800	66 inches	WD
900	70 inches	MWD
1000	78 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	3	0	0	0	----- 30%
>60 inches	0	3	4	0	0	----- 70%

Map unit: 344C Danforth-Elliottsville complex, strongly sloping, very stony

Location: 45°07.33' 67°28.12' to 45°07.00' 67°28.29'

Transect 29

Observation	Depth	Drainage
100	84 inches	MWD
200	81 inches	MWD
300	63 inches	WD
400	33 inches	MWD
500	73 inches	WD
600	71 inches	WD
700	84 inches	WD
800	54 inches	WD
900	27 inches	WD
1000	24 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	2	0	0	----- 30%
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	4	2	0	0	----- 60%

WASHINGTON COUNTY

Map unit: 344C Danforth-Elliottsville complex, strongly sloping, very stony

Transect 30

Observation	Depth	Drainage
100	51 inches	WD
200	44 inches	WD
300	23 inches	MWD
400	26 inches	MWD
500	31 inches	MWD
600	33 inches	WD
700	37 inches	WD
800	31 inches	WD
900	41 inches	WD
1000	48 inches	MWD
1100	38 inches	WD
1200	5 inches	WD
1300	34 inches	MWD
1400	40 inches	MWD
1500	71 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 7%
20 - 40 inches	0	4	5	0	0	----- 60%
40 - 60 inches	0	3	1	0	0	----- 26%
>60 inches	0	1	0	0	0	----- 7%

WASHINGTON COUNTY

unit: 337C Dixfield-Tunbridge-Colonel complex, strongly sloping, very stony
ation: 45°06.97' 67°28.28' to 45°06.92' 67°28.62'
'ransect 31

)bservation	Depth	Drainage
100	64 inches	SWP
200	54 inches	MWD
300	39 inches	WD
400	48 inches	WD
500	40 inches	WD
600	56 inches	MWD
700	60 inches	WD
800	38 inches	WD
900	43 inches	MWD
1000	37 inches	MWD
1100	50 inches	SWP

SOIL DRAINAGE CLASS

DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	3	1	0	0	----- 36%
40 - 60 inches	0	1	3	1	0	----- 46%
>60 inches	0	1	0	1	0	----- 18%

p unit: 337C Dixfield-Tunbridge-Colonel complex, strongly sloping, very stony
cation: 45°06.92' 67°28.62' to 45°06.64' 67°29.19'
Transect 32

Observation	Depth	Drainage
100	37 inches	SWP
200	31 inches	MWD
300	50 inches	MWD
400	14 inches	WD
500	54 inches	MWD
600	27 inches	MWD
700	38 inches	MWD
800	54 inches	SWP
900	64 inches	MWD
1000	74 inches	SWP

SOIL DRAINAGE CLASS

DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 10%
20 - 40 inches	0	0	3	1	0	----- 40%
40 - 60 inches	0	0	2	1	0	----- 30%
>60 inches	0	0	1	1	0	----- 20%

WASHINGTON COUNTY

Map unit: 337C Dixfield-Tunbridge-Colonel complex, strongly sloping, very stony

Transect 35

Observation	Depth	Drainage
100	34 inches	MWD
200	34 inches	MWD
300	43 inches	MWD
400	38 inches	WD
500	33 inches	WD
600	43 inches	SWP
700	40 inches	SWP
800	90 inches	SWP
900	66 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	2	2	0	0	----- 45%
40 - 60 inches	0	0	1	2	0	----- 33%
>60 inches	0	0	0	2	0	----- 22%

Map unit: 337C Dixfield-Tunbridge-Colonel complex, strongly sloping, very stony

Location: 45°03.98' 67°26.96' to 45°03.77' 67°26.96'

Transect 36

Observation	Depth	Drainage
100	37 inches	MWD
200	39 inches	MWD
300	46 inches	MWD
400	23 inches	WD
500	40 inches	MWD
600	33 inches	MWD
700	46 inches	WD
800	44 inches	WD
900	56 inches	MWD
1000	100 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	4	0	0	----- 50%
40 - 60 inches	0	2	2	0	0	----- 40%
>60 inches	0	1	0	0	0	----- 10%

WASHINGTON COUNTY

Map unit: 337C Dixfield-Tunbridge-Colonel complex, strongly sloping, very stony

Transect 37

Observation	Depth	Drainage
100	197 inches	WD
200	128 inches	MWD
300	47 inches	MWD
400	77 inches	MWD
500	127 inches	SWP
600	108 inches	SWP
700	84 inches	MWD
800	100 inches	MWD
900	26 inches	WD
1000	8 inches	WD
1100	46 inches	WD
1200	38 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 8
20 - 40 inches	0	1	1	0	0	----- 17%
40 - 60 inches	0	1	1	0	0	----- 17%
>60 inches	0	1	4	2	0	----- 58%

Map unit: 329C Tunbridge-Lyman-Lamoine complex, strongly sloping, very stony

Location: 44°42.25' 67°26.47' to 44°42.68' 67°25.58'

Transect 38

Observation	Depth	Drainage
100	50 inches	MWD
200	46 inches	WD
300	57 inches	SWP
400	31 inches	WD
500	41 inches	MWD
600	66 inches	MWD
700	30 inches	WD
800	17 inches	WD
900	18 inches	WD
1000	27 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	2	0	0	0	----- 20%
20 - 40 inches	0	3	0	0	0	----- 30%
40 - 60 inches	0	1	2	1	0	----- 40%
>60 inches	0	0	1	0	0	----- 10%

WASHINGTON COUNTY

Map unit: 329C Tunbridge-Lyman-Lamoine complex, strongly sloping, very stony

Transect 39

Observation	Depth	Drainage
100	44 inches	WD
200	40 inches	WD
300	37 inches	WD
400	123 inches	WD
500	59 inches	MWD
600	43 inches	WD
700	17 inches	WD
800	93 inches	WD
900	33 inches	MWD
1000	80 inches	WD
1100	43 inches	MWD
1200	38 inches	SWP
1300	38 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 8%
20 - 40 inches	0	2	1	2	0	----- 38%
40 - 60 inches	0	2	2	0	0	----- 31%
>60 inches	0	3	0	0	0	----- 23%

Map unit: 322D Hermon-Colton-Abram complex, hilly, very bouldery
Location: 44°37.21' 67°25.12' to 44°36.94' 67°25.00'

Transect 40

Observation	Depth	Drainage
100	57 inches	WD
200	31 inches	WD
300	43 inches	MWD
400	71 inches	WD
500	57 inches	MWD
600	64 inches	MWD
700	74 inches	WD
800	107 inches	WD
900	134 inches	WD
1000	123 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	1	2	0	0	----- 30%
>60 inches	0	5	1	0	0	----- 60%

WASHINGTON COUNTY

Map unit: 322D Hermon-Colton-Abram complex, hilly, very bouldery
Transect 41

Observation	Depth	Drainage
100	117 inches	WD
200	111 inches	WD
300	83 inches	WD
400	107 inches	MWD
500	>196 inches	WD
600	128 inches	WD
700	63 inches	MWD
800	81 inches	WD
900	81 inches	WD
1000	60 inches	WD
1100	56 inches	WD
1200	130 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	2	0	0	0	----- 17%
>60 inches	0	7	3	0	0	----- 83%

Map unit: 364B Naskeag-Tunbridge-Lyman complex, gently sloping, very stony
Location: 44°36.94' 67°25.00' to 44°37.71' 67°26.15'
Transect 42

Observation	Depth	Drainage
100	110 inches	MWD
200	83 inches	MWD
300	102 inches	MWD
400	>196 inches	WD
500	>196 inches	MWD
600	57 inches	MWD
700	71 inches	WD
800	74 inches	WD
900	34 inches	MWD
1000	48 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	1	0	0	----- 10%
40 - 60 inches	0	1	1	0	0	----- 20%
>60 inches	0	3	4	0	0	----- 70%

WASHINGTON COUNTY

Map unit: 364B Naskeag-Tunbridge-Lyman complex, gently sloping, very stony

Transect 43

Observation	Depth	Drainage
100	41 inches	SWP
200	28 inches	SWP
300	43 inches	SWP
400	64 inches	MWD
500	33 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	1	1	0	----- 40%
40 - 60 inches	0	0	0	2	0	----- 40%
>60 inches	0	0	1	0	0	----- 20%

Map unit: 322C Hermon-Colton-Abram complex, strongly sloping, very bouldery

Location: 44°37.71' 67°26.15' to 44°37.54' 67°24.45'

Transect 44

Observation	Depth	Drainage
100	15 inches	MWD
200	17 inches	WD
300	18 inches	WD
400	31 inches	MWD
500	38 inches	WD
600	17 inches	WD
700	26 inches	WD
800	23 inches	WD
900	50 inches	MWD
1000	131 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	3	1	0	0	----- 40%
20 - 40 inches	0	3	1	0	0	----- 40%
40 - 60 inches	0	0	1	0	0	----- 10%
>60 inches	0	1	0	0	0	----- 10%

WASHINGTON COUNTY

Map unit: 322C Hermon-Colton-Abram complex, strongly sloping, very bouldery

Transect 45

Observation	Depth	Drainage
100	128 inches	WD
200	125 inches	WD
300	127 inches	WD
400	161 inches	WD
500	121 inches	WD
600	90 inches	MWD
700	134 inches	WD
800	94 inches	WD
900	123 inches	WD
1000	59 inches	WD
1100	31 inches	WD
1200	62 inches	WD
1300	57 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 08%
40 - 60 inches	0	2	0	0	0	----- 15%
>60 inches	0	9	1	0	0	----- 77%

Site Assessment, Kennebec County, Maine 17 (September 1993)

The purpose of this investigation was to use GPR to assess the depth to bedrock at a proposed site for an in-ground animal-waste storage system. The structure would require a 100 foot-by 120 foot area in which the depth to bedrock exceeds 10 feet. The site was located near China Lake in an area of Paxton-Charlton fine sandy loams, 3 to 8 percent slopes (PbB), Paxton-Charlton fine sandy loams, 8 to 15 percent slopes (PdC2), and Hartland very fine sandy loam, 8 to 15 percent slopes (Hfc). Charlton and Paxton are members of the coarse-loamy, mixed, mesic Typic Dystrochrepts family; Hartland is a member of the coarse-silty, mixed, mesic Dystric Eutrochrepts family. These soils are deep and well drained.

An irregularly-shaped 600 by 500 foot grid was established across the site. Survey flags were inserted in the ground at 100 foot. intervals. Two areas were omitted from the survey because of the presence of farm structures or cultivated crops.

A transit was used to establish grid lines and determine surface elevations at each grid intersect. Elevations were not tied to an elevation benchmark; the lowest recorded surface point was chosen as the 0.0 datum. Figure 1 is a two-dimensional contour plot of the ground surface. Relief is about 54 feet. Areas of map unit PbB occupies the higher-lying western portions of the site. Areas of map unit PdC2 occupies the lower-lying, more sloping eastern portions of the site. A prominent bedrock ledge and slope break separate the two units.

Radar surveys were conducted along seven east-west trending grid lines and one north-south trending grid line. At each of the 38 grid intersects, the depth to bedrock was estimated from the radar profile. In addition, measurements were obtained with the EM38 meter in both the horizontal and vertical dipole orientations at each grid intersect.

Radar interpretation of the depth to bedrock at each of the 38 observation sites revealed a distribution ranging from about 1.8 to 8.4 feet. Table 1 summarizes the frequency distribution by soil depth classes.

Table 1

Depth Class	Depth Interval	Frequency
shallow	0 to 20 inches	3%
moderately deep	20 to 40 inches	33%
deep	40 to 60 inches	42%
very deep	> 60 inches	22%

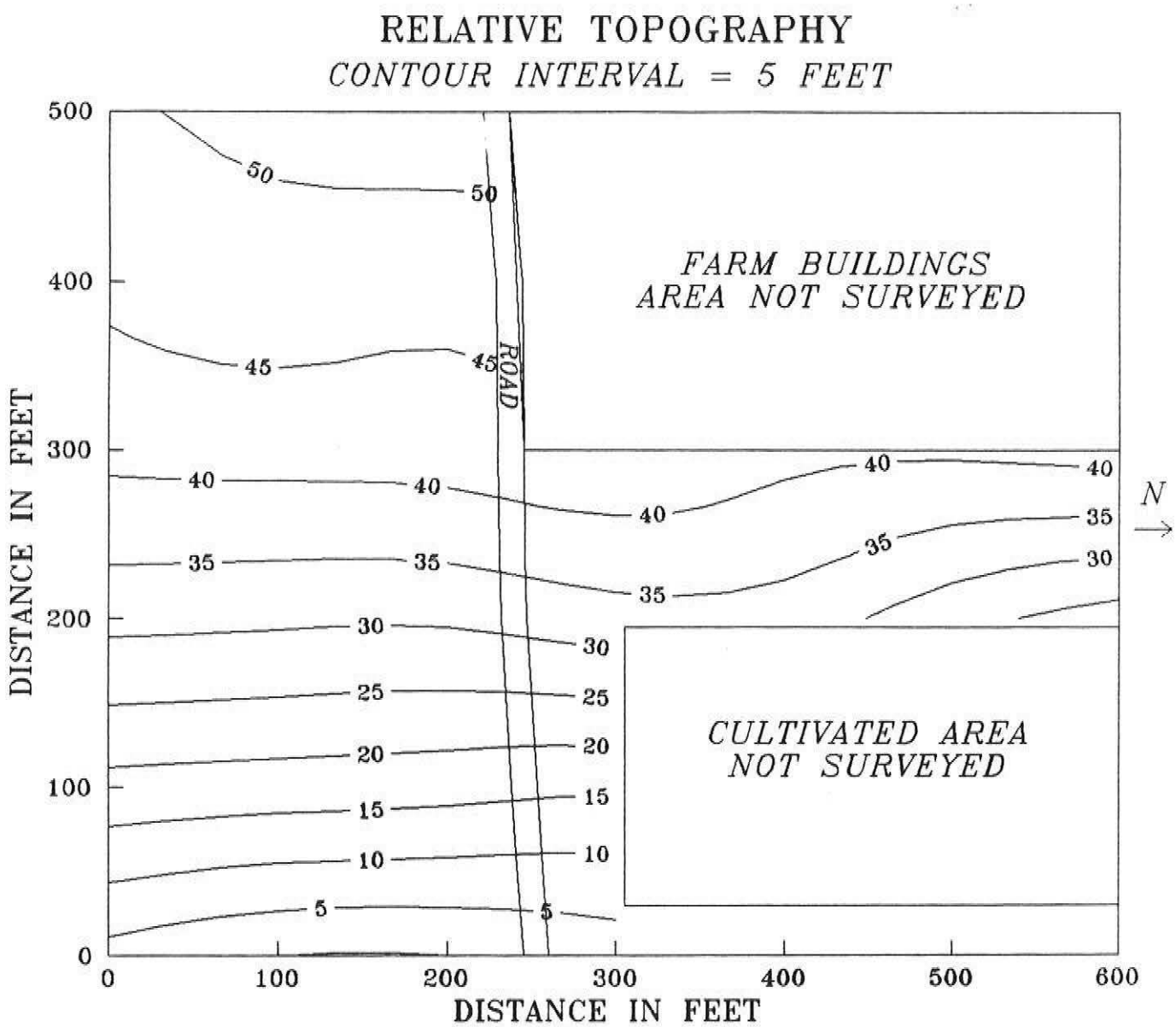
Based on radar interpretations made systematically at 100 foot intervals, bedrock depths appear to be too shallow for an in-ground animal waste system over most of this site. However, radar

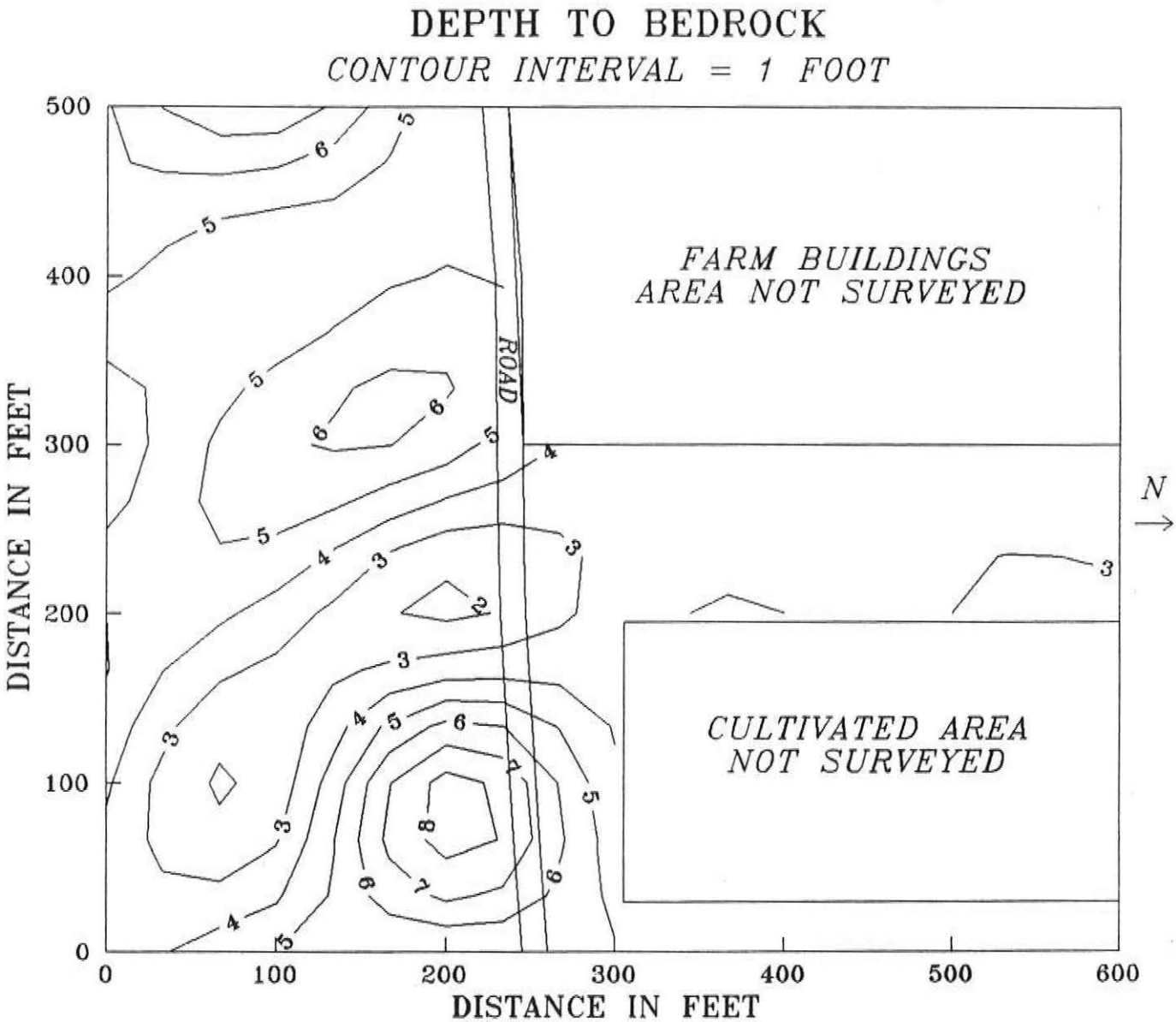
interpretations are tentative and should be confirmed with limited number of soil borings.

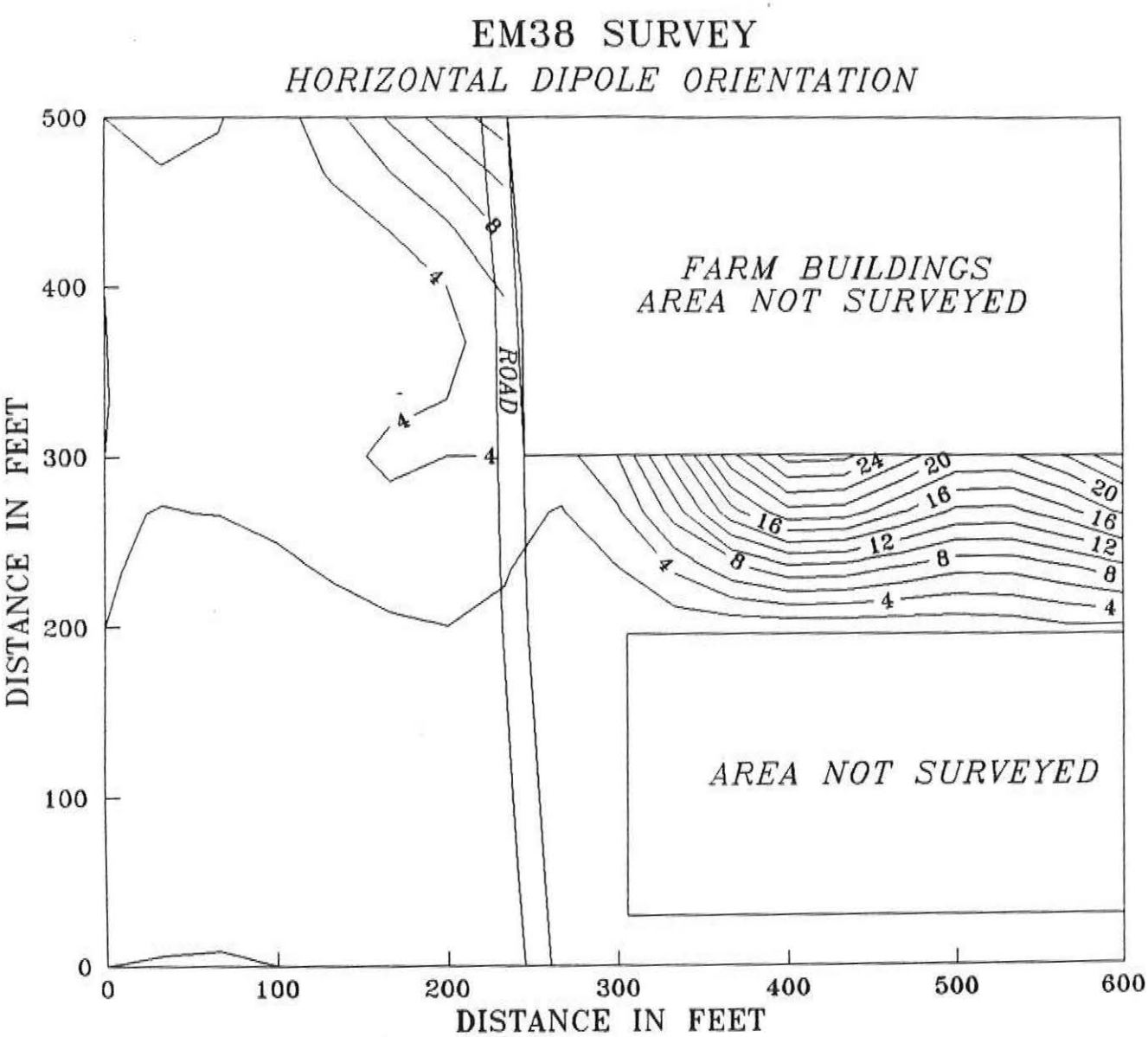
Computer simulations of the radar interpretations (see Figure 2) revealed an area in the eastern portion of the survey area having favorable depths to bedrock. This area is located at the base of the slope, near the road, and in a delineation of Paxton-Charlton fine sandy loams, 8 to 15 percent slopes (PdC2). However, the area having favorable depths to bedrock appears to be too limited in size for the proposed structure. As the cultivated area was not surveyed, it is possible that a portion of this field could also have favorable depths to bedrock.

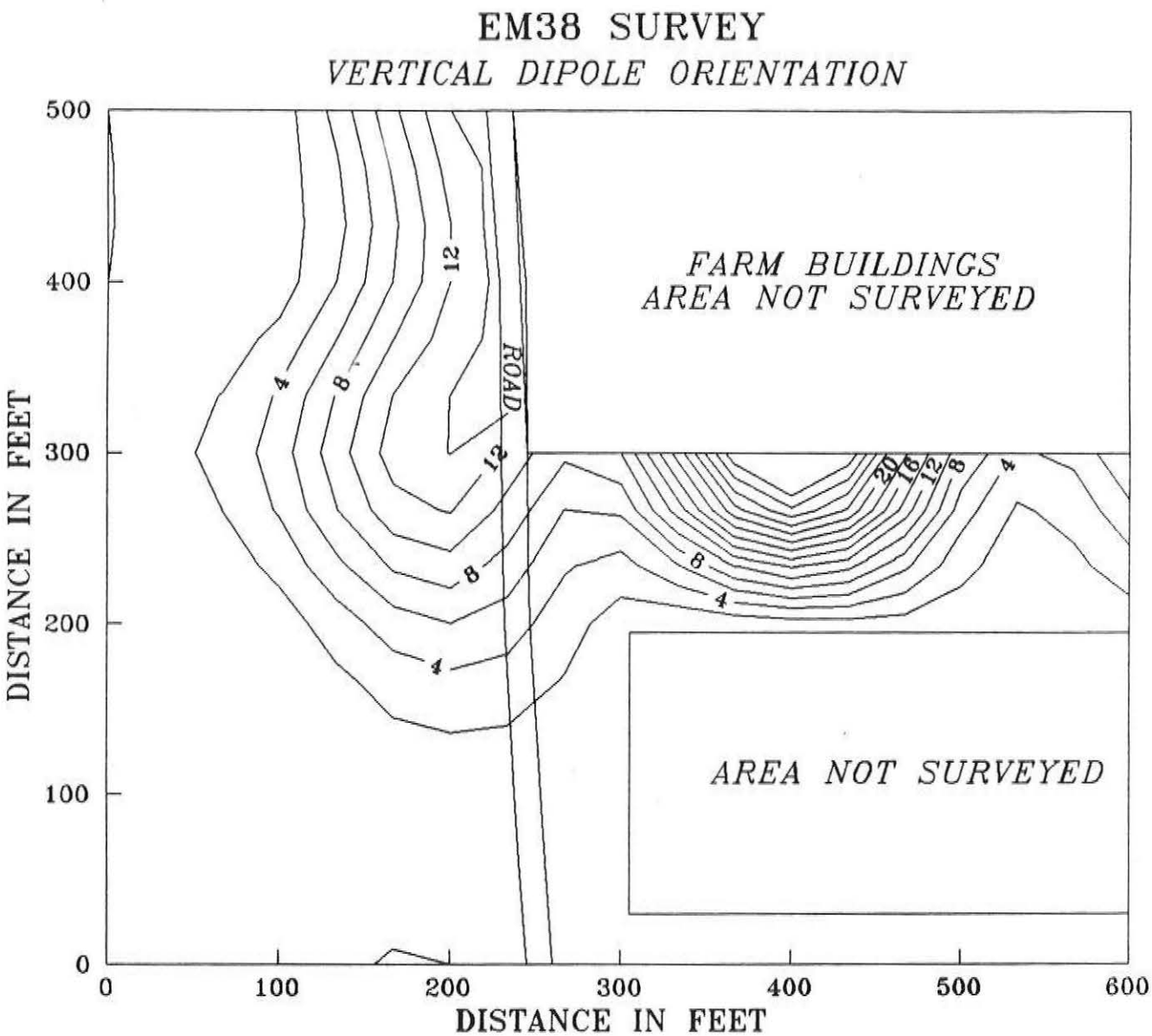
A field demonstration of the use of electromagnetic induction methods was conducted at this site. The purpose of this survey was to evaluate the potential of using EM techniques to chart the extent of surface runoff from an animal holding area.

Figures 3 and 4 represents two-dimensional isarithmic maps prepared from data collected with the EM38 meter in the horizontal and the vertical dipole orientations, respectively. Values of apparent conductivity are highest in areas adjacent to farm structures and where dairy cows congregate. In these figures, a fairly broad zone of relatively high apparent conductivity values appears to emanate from the animal-holding area and extends in a downslope direction (towards lower margin of study area). Within this zone values of apparent conductivities decrease horizontally (in a downslope direction). These pattern suggest possible concentrations of animal wastes in the upper part of the soils and its probable dissemination by runoff from the holding area.


RELATIVE TOPOGRAPHY
CONTOUR INTERVAL = 5 FEET
FARM BUILDINGS
AREA NOT SURVEYED
CULTIVATED AREA
NOT SURVEYED
ROAD
N
50
45
40
35
30
25
20
15
10
5
DISTANCE IN FEET
DISTANCE IN FEET
0
100
200
300
400
500
600


DEPTH TO BEDROCK
CONTOUR INTERVAL = 1 FOOT
FARM BUILDINGS
AREA NOT SURVEYED
ROAD
CULTIVATED AREA
NOT SURVEYED
N
DISTANCE IN FEET
DISTANCE IN FEET
0
100
200
300
400
500
600


EM38 SURVEY
HORIZONTAL DIPOLE ORIENTATION
FARM BUILDINGS
AREA NOT SURVEYED
ROAD
AREA NOT SURVEYED
DISTANCE IN FEET
DISTANCE IN FEET
0
100
200
300
400
500
600
24
20
16
12
8
4


EM38 SURVEY
VERTICAL DIPOLE ORIENTATION
FARM BUILDINGS
AREA NOT SURVEYED
ROAD
AREA NOT SURVEYED
4
8
12
20
16
DISTANCE IN FEET
DISTANCE IN FEET
0
100
200
300
400
500
600

Franklin County

Map unit: 70D Saddleback-Sisk-Rock Outcrop Association, moderately steep
Location: 45°05.55' 70°42.31' to 45°06.66' 70°39.19'
Transect 1

Observation	Depth	Drainage
100	31 inches	WD
200	74 inches	WD
300	116 inches	WD
400	36 inches	WD
500	76 inches	WD
600	54 inches	WD
700	46 inches	WD
800	96 inches	WD
900	114 inches	WD
1000	136 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	2	0	0	0	----- 20%
40 - 60 inches	0	2	0	0	0	----- 20%
>60 inches	0	6	0	0	0	----- 60%

Map unit: 70D Saddleback-Sisk-Rock Outcrop Association, moderately steep
Transect 2

Observation	Depth	Drainage
100	111 inches	WD
200	114 inches	WD
300	146 inches	WD
400	117 inches	WD
500	>196 inches	WD
600	>196 inches	WD
700	>196 inches	WD
800	>196 inches	WD
900	124 inches	WD
1000	135 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	10	0	0	0	---- 100%

Franklin County

Map unit: 70D Saddleback-Sisk-Rock Outcrop Association, moderately steep

Transect 3

Observation	Depth	Drainage
100	143 inches	MWD
200	98 inches	MWD
300	101 inches	MWD
400	50 inches	WD
500	87 inches	WD
600	118 inches	WD
700	51 inches	MWD
800	34 inches	WD
900	33 inches	WD
1000	83 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	2	0	0	0	----- 20%
40 - 60 inches	0	1	1	0	0	----- 20%
>60 inches	0	3	3	0	0	----- 60%

Map unit: 70D Saddleback-Sisk-Rock Outcrop Association, moderately steep

Transect 4

Observation	Depth	Drainage
100	53 inches	WD
200	31 inches	WD
300	63 inches	WD
400	104 inches	WD
500	96 inches	WD
600	93 inches	WD
700	48 inches	WD
800	37 inches	WD
900	50 inches	WD
1000	54 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	2	0	0	0	----- 20%
40 - 60 inches	0	4	0	0	0	----- 40%
>60 inches	0	4	0	0	0	----- 40%

Franklin County

Map unit: 70D Saddleback-Sisk-Rock Outcrop Association, moderately steep

Transect 5

Observation	Depth	Drainage
100	46 inches	WD
200	26 inches	WD
300	97 inches	WD
400	57 inches	WD
500	33 inches	MWD
600	137 inches	MWD
700	87 inches	WD
800	68 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	1	0	0	----- 25%
40 - 60 inches	0	2	0	0	0	----- 25%
>60 inches	0	3	1	0	0	----- 50%

Map unit: 70E Saddleback-Sisk-Rock Outcrop Association, steep
Location: 45°06.66' 70°39.19' to 45°06.40' 70°39.97'

Transect 6

Observation	Depth	Drainage
100	131 inches	WD
200	144 inches	WD
300	63 inches	WD
400	65 inches	WD
500	57 inches	WD
600	38 inches	WD
700	26 inches	WD
800	28 inches	WD
900	14 inches	WD
1000	27 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 10%
20 - 40 inches	0	4	0	0	0	----- 40%
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	4	0	0	0	----- 40%

Franklin County

Map unit: 70E Saddleback-Sisk-Rock Outcrop Association, steep
Transect 7

Observation	Depth	Drainage
100	33 inches	WD
200	21 inches	WD
300	31 inches	WD
400	33 inches	WD
500	40 inches	WD
600	18 inches	WD
700	28 inches	WD
800	28 inches	WD
900	26 inches	WD
1000	36 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 10%
20 - 40 inches	0	9	0	0	0	----- 90%
40 - 60 inches	0	0	0	0	0	
>60 inches	0	0	0	0	0	

Map unit: 70E Saddleback-Sisk-Rock Outcrop Association, steep
Transect 8

Observation	Depth	Drainage
100	38 inches	WD
200	17 inches	WD
300	14 inches	WD
400	30 inches	WD
500	37 inches	WD
600	34 inches	WD
700	26 inches	WD
800	23 inches	WD
900	24 inches	WD
1000	28 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	2	0	0	0	----- 20%
20 - 40 inches	0	8	0	0	0	----- 80%
40 - 60 inches	0	0	0	0	0	
>60 inches	0	0	0	0	0	

Franklin County

Map unit: 70E Saddleback-Sisk-Rock Outcrop Association, steep
Transect 9

Observation	Depth	Drainage
100	26 inches	WD
200	64 inches	WD
300	30 inches	WD
400	28 inches	WD
500	36 inches	WD
600	46 inches	MWD
700	21 inches	MWD
800	60 inches	WD
900	111 inches	WD
1000	48 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	4	1	0	0	----- 50%
40 - 60 inches	0	2	1	0	0	----- 30%
>60 inches	0	2	0	0	0	----- 20%

Map unit: 70E Saddleback-Sisk-Rock Outcrop Association, steep
Transect 10

Observation	Depth	Drainage
100	34 inches	WD
200	43 inches	WD
300	64 inches	MWD
400	47 inches	WD
500	94 inches	WD
600	104 inches	WD
700	91 inches	WD
800	88 inches	WD
900	81 inches	WD
1000	115 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	2	0	0	0	----- 20%
>60 inches	0	6	1	0	0	----- 70%

Franklin County

Map unit: 70E Saddleback-Sisk-Rock Outcrop Association, steep
Transect 11

Observation	Depth	Drainage
100	34 inches	WD
200	57 inches	WD
300	54 inches	WD
400	43 inches	WD
500	54 inches	WD
600	21 inches	WD
700	47 inches	WD
800	24 inches	WD
900	34 inches	WD
1000	26 inches	WD
1100	23 inches	WD
1200	33 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	6	1	0	0	----- 58%
40 - 60 inches	0	5	0	0	0	----- 42%
>60 inches	0	0	0	0	0	

Map unit: 70D Saddleback-Sisk-Rock Outcrop Association, moderately steep
Location: 45°07.25' 70°38.91' to 45°06.71' 70°39.62'
Transect 12

Observation	Depth	Drainage
100	57 inches	WD
200	81 inches	WD
300	87 inches	WD
400	56 inches	WD
500	83 inches	WD
600	71 inches	WD
700	68 inches	WD
800	51 inches	WD
900	46 inches	WD
1000	26 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	4	0	0	0	----- 40%
>60 inches	0	5	0	0	0	----- 50%

Franklin County

Map unit: 70D Saddleback-Sisk-Rock Outcrop Association, moderately steep

Transect 13

Observation	Depth	Drainage
100	16 inches	WD
200	14 inches	WD
300	28 inches	WD
400	64 inches	WD
500	56 inches	WD
600	71 inches	WD
700	104 inches	WD
800	68 inches	WD
900	26 inches	WD
1000	36 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	2	0	0	0	----- 20%
20 - 40 inches	0	3	0	0	0	----- 30%
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	4	0	0	0	----- 40%

Map unit: 70D Saddleback-Sisk-Rock Outcrop Association, moderately steep

Transect 14

Observation	Depth	Drainage
100	51 inches	WD
200	81 inches	WD
300	112 inches	WD
400	67 inches	WD
500	43 inches	WD
600	60 inches	WD
700	60 inches	WD
800	43 inches	WD
900	60 inches	WD
1000	58 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	7	0	0	0	----- 70%
>60 inches	0	3	0	0	0	----- 30%

Franklin County

Map unit: 70D Saddleback-Sisk-Rock Outcrop Association, moderately steep

Transect 15

Observation	Depth	Drainage
100	90 inches	WD
200	93 inches	WD
300	58 inches	MWD
400	61 inches	WD
500	44 inches	WD
600	53 inches	MWD
700	77 inches	MWD
800	68 inches	WD
900	53 inches	WD
1000	74 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	2	2	0	0	----- 40%
>60 inches	0	5	1	0	0	----- 60%

Map unit: 70D Saddleback-Sisk-Rock Outcrop Association, moderately steep

Transect 16

Observation	Depth	Drainage
100	110 inches	WD
200	91 inches	WD
300	100 inches	WD
400	113 inches	WD
500	100 inches	WD
600	106 inches	WD
700	97 inches	WD
800	104 inches	WD
900	43 inches	MWD
1000	164 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	1	0	0	----- 10%
>60 inches	0	9	0	0	0	----- 90%

Franklin County

Map unit: 70E Saddleback-Sisk-Rock Outcrop Association, steep
Location: 45°06.71' 70°39.62' to 45°06.07' 70°39.65'
Transect 17

Observation	Depth	Drainage
100	96 inches	WD
200	64 inches	MWD
300	90 inches	WD
400	48 inches	WD
500	87 inches	WD
600	71 inches	WD
700	88 inches	WD
800	71 inches	WD
900	43 inches	WD
1000	57 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	3	0	0	0	----- 30%
>60 inches	0	6	1	0	0	----- 70%

Map unit: 70E Saddleback-Sisk-Rock Outcrop Association, steep
Transect 18

Observation	Depth	Drainage
100	58 inches	WD
200	43 inches	WD
300	53 inches	WD
400	57 inches	WD
500	57 inches	WD
600	71 inches	WD
700	60 inches	WD
800	57 inches	WD
900	64 inches	WD
1000	71 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	7	0	0	0	----- 70%
>60 inches	0	3	0	0	0	----- 30%

Franklin County

Map unit: 70E Saddleback-Sisk-Rock Outcrop Association, steep
Transect 19

Observation	Depth	Drainage
100	24 inches	WD
200	32 inches	WD
300	57 inches	WD
400	66 inches	WD
500	61 inches	WD
600	50 inches	WD
700	64 inches	WD
800	58 inches	WD
900	51 inches	WD
1000	47 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	2	0	0	0	----- 20%
40 - 60 inches	0	5	0	0	0	----- 50%
>60 inches	0	3	0	0	0	----- 30%

Map unit: 70E Saddleback-Sisk-Rock Outcrop Association, steep
Transect 20

Observation	Depth	Drainage
100	46 inches	WD
200	31 inches	WD
300	56 inches	WD
400	47 inches	WD
500	47 inches	WD
600	33 inches	WD
700	24 inches	WD
800	58 inches	WD
900	74 inches	WD
1000	61 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	3	0	0	0	----- 30%
40 - 60 inches	0	5	0	0	0	----- 50%
>60 inches	0	2	0	0	0	----- 20%

Franklin County

Map unit: 70E Saddleback-Sisk-Rock Outcrop Association, steep
Transect 21

Observation	Depth	Drainage
100	50 inches	WD
200	81 inches	MWD
300	81 inches	WD
400	71 inches	WD
500	73 inches	WD
600	67 inches	WD
700	54 inches	WD
800	53 inches	MWD
900	27 inches	WD
1000	36 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	2	0	0	0	----- 20%
40 - 60 inches	0	2	1	0	0	----- 30%
>60 inches	0	4	1	0	0	----- 50%

Map unit: 70E Saddleback-Sisk-Rock Outcrop Association, steep
Transect 22

Observation	Depth	Drainage
100	34 inches	WD
200	46 inches	WD
300	32 inches	WD
400	29 inches	MWD
500	69 inches	WD
600	69 inches	WD
700	103 inches	WD
800	71 inches	WD
900	44 inches	WD
1000	53 inches	MWD
1100	57 inches	MWD
1200	57 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	2	1	0	0	----- 25%
40 - 60 inches	0	3	2	0	0	----- 42%
>60 inches	0	4	0	0	0	----- 33%

Franklin County

Map unit: 48C Dixfield-Colonel-Lyman Association, strongly sloping
Location: 45°09.56' 70°33.72' to 45°09.11' 70°33.04'
Transect 23

Observation	Depth	Drainage
100	33 inches	WD
200	41 inches	WD
300	44 inches	MWD
400	47 inches	MWD
500	33 inches	MWD
600	31 inches	SWP
700	20 inches	SWP
800	34 inches	MWD
900	26 inches	MWD
1000	21 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	4	2	0	----- 70%
40 - 60 inches	0	1	2	0	0	----- 30%
>60 inches	0	0	0	0	0	

Map unit: 48C Dixfield-Colonel-Lyman Association, strongly sloping
Transect 24

Observation	Depth	Drainage
100	26 inches	SWP
200	27 inches	MWD
300	24 inches	MWD
400	21 inches	MWD
500	21 inches	MWD
600	21 inches	MWD
700	57 inches	MWD
800	66 inches	WD
900	59 inches	SWP
1000	61 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	5	1	0	----- 60%
40 - 60 inches	0	0	1	1	0	----- 20%
>60 inches	0	1	1	0	0	----- 20%

Franklin County

Map unit: 48C Dixfield-Colonel-Lyman Association, strongly sloping
Transect 25

Observation	Depth	Drainage
100	60 inches	WD
200	61 inches	WD
300	59 inches	WD
400	83 inches	WD
500	110 inches	WD
600	61 inches	MWD
700	57 inches	SWP
800	67 inches	WD
900	71 inches	WD
1000	131 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	2	0	1	0	----- 30%
>60 inches	0	6	1	0	0	----- 70%

Map unit: 48C Dixfield-Colonel-Lyman Association, strongly sloping
Transect 26

Observation	Depth	Drainage
100	124 inches	MWD
200	86 inches	WD
300	48 inches	WD
400	40 inches	WD
500	29 inches	WD
600	54 inches	WD
700	37 inches	SWP
800	34 inches	MWD
900	11 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	1	0	0	----- 11%
20 - 40 inches	0	1	1	1	0	----- 33%
40 - 60 inches	0	3	0	0	0	----- 33%
>60 inches	0	1	1	0	0	----- 23%

Franklin County

Map unit: 53C Dixfield-Colonel-Marlow Association, strongly sloping
Location: 45°09.11' 70°33.09' to 45°08.82' 70°33.09'
Transect 27

Observation	Depth	Drainage
100	44 inches	MWD
200	43 inches	MWD
300	87 inches	WD
400	65 inches	WD
500	71 inches	WD
600	61 inches	MWD
700	85 inches	SWP
800	40 inches	SWP
900	47 inches	MWD
1000	76 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	1	0	----- 10%
40 - 60 inches	0	0	3	0	0	----- 30%
>60 inches	0	3	1	2	0	----- 60%

Map unit: 53C Dixfield-Colonel-Marlow Association, strongly sloping
Transect 28

Observation	Depth	Drainage
100	58 inches	PD
200	100 inches	SWP
300	71 inches	SWP
400	56 inches	SWP
500	69 inches	MWD
600	86 inches	SWP
700	89 inches	SWP
800	83 inches	MWD
900	81 inches	MWD
1000	90 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	1	1	----- 20%
>60 inches	0	0	4	4	0	----- 80%

Franklin County

Map unit: 54C Colonel-Dixfield-Brayton Association, strongly sloping
Location: 45°08.49' 70°33.54' to 45°08.51' 70°33.40'
Transect 29

Observation	Depth	Drainage
100	47 inches	SWP
200	76 inches	MWD
300	48 inches	SWP
400	96 inches	MWD
500	102 inches	MWD
600	111 inches	SWP
700	77 inches	SWP
800	81 inches	PD
900	76 inches	PD
1000	56 inches	PD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	2	1	----- 30%
>60 inches	0	0	3	2	2	----- 70%

Map unit: 54C Colonel-Dixfield-Brayton Association, strongly sloping
Transect 30

Observation	Depth	Drainage
100	40 inches	SWP
200	86 inches	SWP
300	94 inches	MWD
400	90 inches	MWD
500	60 inches	MWD
600	86 inches	SWP
700	>196 inches	MWD
800	106 inches	MWD
900	80 inches	MWD
1000	57 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	1	0	1	0	----- 20%
>60 inches	0	0	6	2	0	----- 80%

Franklin County

Map unit: 94XE Lyman-Tunbridge Association, moderately steep
Location: 45°08.51' 70°33.90' to 45°08.75' 70°34.40'
Transect 31

Observation	Depth	Drainage
100	114 inches	WD
200	91 inches	WD
300	137 inches	WD
400	171 inches	WD
500	143 inches	WD
600	56 inches	WD
700	110 inches	WD
800	86 inches	WD
900	81 inches	WD
1000	71 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	9	0	0	0	----- 90%

Map unit: 94XE Lyman-Tunbridge Association, moderately steep
Transect 32

Observation	Depth	Drainage
100	64 inches	WD
200	59 inches	WD
300	57 inches	WD
400	33 inches	WD
500	24 inches	WD
600	81 inches	WD
700	129 inches	WD
800	106 inches	MWD
900	>196 inches	WD
1000	178 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	2	0	0	0	----- 20%
40 - 60 inches	0	2	0	0	0	----- 20%
>60 inches	0	5	1	0	0	----- 60%

Franklin County

Map unit: 94XE Lyman-Tunbridge Association, moderately steep
Transect 33

Observation	Depth	Drainage
100	156 inches	WD
200	160 inches	WD
300	43 inches	WD
400	104 inches	SWP
500	118 inches	WD
600	69 inches	WD
700	71 inches	WD
800	88 inches	WD
900	21 inches	WD
1000	34 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	2	0	0	0	----- 20%
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	6	0	1	0	----- 70%

Oxford County

Map unit: 34C Danforth-Shirley-Elliottsville Association, rolling
Location: 45°08.58' 70°59.08' to 45°08.46' 70°58.85'
Transect 34

Observation	Depth	Drainage
100	87 inches	WD
200	36 inches	WD
300	53 inches	WD
400	36 inches	MWD
500	47 inches	PD
600	>196 inches	WD
700	>196 inches	WD
800	77 inches	WD
900	75 inches	WD
1000	43 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	1	0	0	----- 20%
40 - 60 inches	0	2	0	0	1	----- 20%
>60 inches	0	5	0	0	0	----- 50%

Oxford County

Map unit: 34C Danforth-Shirley-Elliottsville Association, rolling
Transect 35

Observation	Depth	Drainage
100	17 inches	WD
200	36 inches	WD
300	17 inches	WD
400	76 inches	WD
500	>196 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	2	0	0	0	----- 40%
20 - 40 inches	0	1	0	0	0	----- 20%
40 - 60 inches	0	0	0	0	0	
>60 inches	0	2	0	0	0	----- 40%

Map unit: 31XC Danforth-Masardis-Peachman Association, strongly sloping
Location: 45°08.46' 70°58.85'
Transect 36

Observation	Depth	Drainage
100	140 inches	WD
200	77 inches	WD
300	83 inches	WD
400	66 inches	VPD
500	44 inches	WD
600	63 inches	WD
700	44 inches	WD
800	43 inches	PD
900	77 inches	VPD
1000	67 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	2	0	0	1	----- 30%
>60 inches	0	5	0	0	2	----- 70%

Oxford County

Map unit: 31XC Danforth-Masardis-Peachman Association, strongly sloping

Transect 37

Observation	Depth	Drainage
100	91 inches	WD
200	130 inches	VPD
300	86 inches	VPD
400	57 inches	WD
500	97 inches	MWD
600	150 inches	WD
700	>196 inches	WD
800	>196 inches	WD
900	>196 inches	WD
1000	>196 inches	WD
1100	>196 inches	WD
1200	>196 inches	WD
1300	>196 inches	WD
1400	51 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	2	0	0	0	----- 14%
>60 inches	0	9	1	0	2	----- 86%

Map unit: 34C Danforth-Shirley-Elliottsville Association, rolling
Location: 45°08.07' 70°58.92' to 45°08.14' 70°00.26'

Transect 38

Observation	Depth	Drainage
100	96 inches	WD
200	121 inches	WD
300	63 inches	WD
400	96 inches	MWD
500	138 inches	MWD
600	138 inches	MWD
700	64 inches	PD
800	>196 inches	WD
900	74 inches	PD
1000	83 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	5	3	0	2	---- 100%

Oxford County

Map unit: 34C Danforth-Shirley-Elliottsville Association, rolling
Transect 39

Observation	Depth	Drainage
100	69 inches	WD
200	79 inches	MWD
300	71 inches	MWD
400	60 inches	WD
500	50 inches	MWD
600	71 inches	WD
700	93 inches	WD
800	108 inches	WD
900	59 inches	MWD
1000	54 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	3	0	0	----- 30%
>60 inches	0	5	2	0	0	----- 70%

Map unit: 34C Danforth-Shirley-Elliottsville Association, rolling
Transect 40

Observation	Depth	Drainage
100	71 inches	WD
200	90 inches	WD
300	60 inches	WD
400	164 inches	PD
500	>196 inches	WD
600	>196 inches	WD
700	>196 inches	WD
800	>196 inches	WD
900	96 inches	MWD
1000	70 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	7	2	0	1	---- 100%

Oxford County

Map unit: 34C Danforth-Shirley-Elliottsville Association, rolling
Transect 41

Observation	Depth	Drainage
100	109 inches	PD
200	106 inches	MWD
300	>196 inches	MWD
400	>196 inches	WD
500	>196 inches	WD
600	>196 inches	MWD
700	>196 inches	WD
800	>196 inches	WD
900	>196 inches	WD
1000	>196 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	6	3	1	0	---- 100%

Map unit: 34C Danforth-Shirley-Elliottsville Association, rolling
Transect 42

Observation	Depth	Drainage
100	>196 inches	WD
200	>196 inches	WD
300	>196 inches	WD
400	>196 inches	MWD
500	>196 inches	MWD
600	>196 inches	WD
700	>196 inches	WD
800	>196 inches	WD
900	>196 inches	WD
1000	>196 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	8	2	0	0	---- 100%

Oxford County

Map unit: 34C Danforth-Shirley-Elliottsville Association, rolling
Transect 43

Observation	Depth	Drainage
100	>196 inches	WD
200	>196 inches	WD
300	>196 inches	WD
400	>196 inches	WD
500	97 inches	WD
600	61 inches	WD
700	64 inches	WD
800	61 inches	PD
900	87 inches	PD
1000	163 inches	VPD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	7	0	0	3	---- 100%

Map unit: 34C Danforth-Shirley-Elliottsville Association, rolling
Transect 44

Observation	Depth	Drainage
100	143 inches	VPD
200	116 inches	MWD
300	129 inches	WD
400	>196 inches	WD
500	>196 inches	WD
600	>196 inches	WD
700	>196 inches	WD
800	>196 inches	WD
900	>196 inches	WD
1000	>196 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	8	1	0	1	---- 100%

Oxford County

Map unit: 34C Danforth-Shirley-Elliottsville Association, rolling
Location: 45°06.82' 70°59.77' to 45°07.33' 70°59.87'
Transect 45

Observation	Depth	Drainage
100	50 inches	WD
200	50 inches	WD
300	38 inches	PD
400	17 inches	WD
500	51 inches	WD
600	43 inches	MWD
700	43 inches	WD
800	50 inches	WD
900	72 inches	MWD
1000	19 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	2	0	0	0	----- 20%
20 - 40 inches	0	0	0	0	1	----- 10%
40 - 60 inches	0	5	1	0	0	----- 60%
>60 inches	0	0	1	0	0	----- 10%

Map unit: 34C Danforth-Shirley-Elliottsville Association, rolling
Transect 46

Observation	Depth	Drainage
100	43 inches	WD
200	0 inches	WD
300	135 inches	MWD
400	100 inches	VP
500	121 inches	MWD
600	71 inches	WD
700	76 inches	WD
800	90 inches	WD
900	89 inches	WD
1000	104 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 10%
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	5	2	0	1	----- 80%

Oxford County

Map unit: 34C Danforth-Shirley-Elliottsville Association, rolling
Transect 47

Observation	Depth	Drainage
100	121 inches	WD
200	110 inches	WD
300	121 inches	MWD
400	94 inches	WD
500	84 inches	WD
600	96 inches	WD
700	>196 inches	WD
800	121 inches	WD
900	96 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	8	1	0	0	---- 100%

Map unit: 34D Danforth-Elliottsville Association, moderately steep
Location: 45°05.18' 70°55.65' to 45°05.15' 70°55.37'
Transect 48

Observation	Depth	Drainage
100	66 inches	WD
200	24 inches	WD
300	0 inches	WD
400	24 inches	WD
500	128 inches	WD
600	39 inches	WD
700	96 inches	MWD
800	74 inches	WD
900	128 inches	WD
1000	137 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 10%
20 - 40 inches	0	3	0	0	0	----- 30%
40 - 60 inches	0	0	0	0	0	
>60 inches	0	5	1	0	0	----- 60%

Oxford County

Map unit: 34D Danforth-Elliottsville Association, moderately steep
Transect 49

Observation	Depth	Drainage
100	61 inches	WD
200	86 inches	WD
300	64 inches	WD
400	100 inches	WD
500	86 inches	WD
600	78 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	6	0	0	0	----- 100%

Franklin County

Map unit: 94XC Lyman-Tunbridge Association, moderately steep
Location: 44°49.67' 70°42.58' to 44°49.72' 70°41.60'
Transect 50

Observation	Depth	Drainage
100	20 inches	MWD
200	43 inches	MWD
300	96 inches	WD
400	89 inches	MWD
500	84 inches	WD
600	113 inches	WD
700	117 inches	MWD
800	46 inches	MWD
900	18 inches	MWD
1000	40 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	2	0	0	----- 20%
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	0	2	0	0	----- 20%
>60 inches	0	3	2	0	0	----- 50%

Franklin County

Map unit: 94XC Lyman-Tunbridge Association, moderately steep
Transect 51

Observation	Depth	Drainage
100	36 inches	WD
200	28 inches	WD
300	21 inches	MWD
400	30 inches	WD
500	56 inches	SWP
600	104 inches	MWD
700	37 inches	WD
800	63 inches	WD
900	67 inches	MWD
1000	40 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	5	1	0	0	----- 60%
40 - 60 inches	0	0	0	1	0	----- 10%
>60 inches	0	1	2	0	0	----- 30%

Map unit: 94XC Lyman-Tunbridge Association, moderately steep
Transect 52

Observation	Depth	Drainage
100	26 inches	SWP
200	24 inches	PD
300	83 inches	MWD
400	27 inches	MWD
500	34 inches	PD
600	29 inches	MWD
700	23 inches	MWD
800	50 inches	WD
900	23 inches	WD
1000	24 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	4	1	2	----- 80%
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	0	1	0	0	----- 10%

Franklin County

Map unit: 94XC Lyman-Tunbridge Association, moderately steep
Transect 53

Observation	Depth	Drainage
100	23 inches	MWD
200	21 inches	MWD
300	36 inches	MWD
400	30 inches	WD
500	16 inches	WD
600	97 inches	WD
700	71 inches	WD
800	61 inches	WD
900	29 inches	MWD
1000	64 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 10%
20 - 40 inches	0	1	4	0	0	----- 50%
40 - 60 inches	0	0	0	0	0	
>60 inches	0	4	0	0	0	----- 40%

Map unit: 94XC Lyman-Tunbridge Association, moderately steep
Transect 54

Observation	Depth	Drainage
100	60 inches	WD
200	71 inches	MWD
300	70 inches	PD
400	121 inches	MWD
500	181 inches	WD
600	>196 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	3	2	1	0	---- 100%

Franklin County

Map unit: 301C Skerry-Hermon Association, rolling
Location: 44°46.21' 70°43.30' to 44°47.17' 70°43.89'
Transect 55

Observation	Depth	Drainage
100	17 inches	WD
200	61 inches	WD
300	57 inches	PD
400	39 inches	WD
500	89 inches	WD
600	138 inches	WD
700	141 inches	WD
800	101 inches	WD
900	93 inches	MWD
1000	94 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 10%
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	0	0	0	1	----- 10%
>60 inches	0	5	2	0	0	----- 70%

Map unit: 301C Skerry-Hermon Association, rolling
Transect 56

Observation	Depth	Drainage
100	94 inches	MWD
200	69 inches	PD
300	77 inches	WD
400	71 inches	MWD
500	61 inches	MWD
600	118 inches	WD
700	100 inches	WD
800	104 inches	MWD
900	>196 inches	WD
1000	>196 inches	PD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	4	4	0	2	---- 100%

Franklin County

Map unit: 301C Skerry-Hermon Association, rolling
Transect 57

Observation	Depth	Drainage
100	39 inches	WD
200	87 inches	WD
300	67 inches	SWP
400	69 inches	PD
500	61 inches	MWD
600	76 inches	WD
700	>196 inches	WD
800	>196 inches	WD
900	>196 inches	VPD
1000	74 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	0	0	0	0	
>60 inches	0	4	2	1	2	----- 90%

Map unit: 301C Skerry-Hermon Association, rolling
Transect 58

Observation	Depth	Drainage
100	47 inches	MWD
200	41 inches	WD
300	96 inches	PD
400	59 inches	SWP
500	96 inches	WD
600	64 inches	WD
700	99 inches	MWD
800	97 inches	MWD
900	80 inches	WD
1000	71 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	1	1	1	0	----- 30%
>60 inches	0	4	2	0	1	----- 70%

Franklin County

Map unit: 301C Skerry-Hermon Association, rolling
Transect 59

Observation	Depth	Drainage
100	64 inches	WD
200	>196 inches	WD
300	71 inches	WD
400	76 inches	WD
500	140 inches	WD
600	94 inches	WD
700	74 inches	PD
800	110 inches	MWD
900	107 inches	MWD
1000	66 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	6	3	0	1	---- 100%

Map unit: 301C Skerry-Hermon Association, rolling
Transect 60

Observation	Depth	Drainage
100	43 inches	MWD
200	59 inches	PD
300	43 inches	PD
400	44 inches	MWD
500	71 inches	WD
600	79 inches	WD
700	76 inches	VPD
800	57 inches	SWP
900	109 inches	WD
1000	103 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	2	1	2	----- 50%
>60 inches	0	4	0	0	1	----- 50%

Franklin County

Map unit: 301C Skerry-Hermon Association, rolling
Transect 61

Observation	Depth	Drainage
100	57 inches	MWD
200	39 inches	PD
300	86 inches	MWD
400	103 inches	MWD
500	99 inches	MWD
600	117 inches	MWD
700	101 inches	WD
800	140 inches	MWD
900	71 inches	MWD
1000	93 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	1	----- 10%
40 - 60 inches	0	0	1	0	0	----- 10%
>60 inches	0	1	6	1	0	----- 80%

Map unit: 301C Skerry-Hermon Association, rolling
Transect 62

Observation	Depth	Drainage
100	99 inches	MWD
200	70 inches	WD
300	130 inches	WD
400	>196 inches	WD
500	89 inches	WD
600	66 inches	WD
700	60 inches	WD
800	71 inches	WD
900	78 inches	MWD
1000	57 inches	WD
1100	49 inches	MWD
1200	76 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	1	1	0	0	----- 17%
>60 inches	0	7	3	0	0	----- 83%

Franklin County

Map unit: 942C Lyman-Abram Complex, hilly
Location: 44°47.17' 70°43.89' to 44°47.41' 70°43.82'
Transect 63

Observation	Depth	Drainage
100	113 inches	WD
200	88 inches	WD
300	50 inches	WD
400	103 inches	WD
500	61 inches	WD
600	49 inches	WD
700	54 inches	WD
800	57 inches	WD
900	67 inches	WD
1000	39 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	4	0	0	0	----- 40%
>60 inches	0	5	0	0	0	----- 50%

Map unit: 942C Lyman-Abram Complex, hilly
Transect 64

Observation	Depth	Drainage
100	14 inches	WD
200	19 inches	WD
300	0 inches	WD
400	50 inches	WD
500	29 inches	WD
600	36 inches	WD
700	27 inches	WD
800	51 inches	WD
900	29 inches	WD
1000	31 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	3	0	0	0	----- 30%
20 - 40 inches	0	5	0	0	0	----- 50%
40 - 60 inches	0	2	0	0	0	----- 20%
>60 inches	0	0	0	0	0	

Franklin County

Map unit: 942C Lyman-Abram Complex, hilly
Transect 65

Observation	Depth	Drainage
100	24 inches	MWD
200	27 inches	PD
300	56 inches	WD
400	14 inches	WD
500	18 inches	WD
600	83 inches	WD
700	74 inches	WD
800	23 inches	WD
900	14 inches	WD
1000	63 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	3	0	0	0	----- 30%
20 - 40 inches	0	1	1	0	1	----- 30%
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	3	0	0	0	----- 30%

Map unit: 942C Lyman-Abram Complex, hilly
Transect 66

Observation	Depth	Drainage
100	63 inches	WD
200	27 inches	WD
300	60 inches	WD
400	34 inches	WD
500	15 inches	WD
600	39 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 17%
20 - 40 inches	0	3	0	0	0	----- 50%
40 - 60 inches	0	0	0	0	0	
>60 inches	0	2	0	0	0	----- 33%

Franklin County

Map unit: 48D Marlow-Lyman-Dixfield Association, moderately steep
Location: 44°47.41' 70°43.82' to 44°47.65' 70°44.54'
Transect 67

Observation	Depth	Drainage
100	93 inches	WD
200	64 inches	WD
300	10 inches	WD
400	123 inches	MWD
500	109 inches	MWD
600	77 inches	WD
700	80 inches	MWD
800	83 inches	MWD
900	61 inches	WD
1000	23 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 10%
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	0	0	0	0	
>60 inches	0	4	4	0	0	----- 80%

Map unit: 48D Marlow-Lyman-Dixfield Association, moderately steep
Transect 68

Observation	Depth	Drainage
100	44 inches	MWD
200	54 inches	WD
300	124 inches	WD
400	71 inches	WD
500	61 inches	WD
600	37 inches	MWD
700	57 inches	WD
800	76 inches	WD
900	107 inches	MWD
1000	83 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	1	0	0	----- 10%
40 - 60 inches	0	2	1	0	0	----- 30%
>60 inches	0	4	2	0	0	----- 60%

Franklin County

Map unit: 48D Marlow-Lyman-Dixfield Association, moderately steep
Transect 69

Observation	Depth	Drainage
100	37 inches	MWD
200	57 inches	MWD
300	60 inches	MWD
400	64 inches	WD
500	66 inches	WD
600	38 inches	WD
700	64 inches	MWD
800	81 inches	MWD
900	90 inches	MWD
1000	129 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	1	0	0	----- 20%
40 - 60 inches	0	0	1	0	0	----- 10%
>60 inches	0	2	4	1	0	----- 70%

Map unit: 48D Marlow-Lyman-Dixfield Association, moderately steep
Transect 70

Observation	Depth	Drainage
100	>196 inches	MWD
200	>196 inches	SWP
300	>196 inches	WD
400	>196 inches	WD
500	96 inches	WD
600	114 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	4	1	1	0	---- 100%

Franklin County

Map unit: 102D Saddleback-Ricker Association, moderately steep
Location: 44°47.65' 70°44.54' to 44°47.85' 70°45.07'
Transect 71

Observation	Depth	Drainage
100	117 inches	WD
200	167 inches	WD
300	136 inches	WD
400	>196 inches	WD
500	140 inches	MWD
600	131 inches	WD
700	114 inches	WD
800	86 inches	WD
900	74 inches	WD
1000	40 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	8	1	0	0	----- 90%

Map unit: 102D Saddleback-Ricker Association, moderately steep
Transect 72

Observation	Depth	Drainage
100	36 inches	WD
200	24 inches	WD
300	23 inches	WD
400	50 inches	MWD
500	31 inches	WD
600	21 inches	WD
700	0 inches	WD
800	41 inches	WD
900	113 inches	WD
1000	167 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 10%
20 - 40 inches	0	5	0	0	0	----- 50%
40 - 60 inches	0	1	1	0	0	----- 20%
>60 inches	0	1	0	1	0	----- 20%

Map unit: 102D Saddleback-Ricker Association, moderately steep
Transect 73

Observation	Depth	Drainage
100	117 inches	WD
200	66 inches	WD
300	133 inches	WD
400	>196 inches	WD
500	>196 inches	MWD
600	>196 inches	WD
700	>196 inches	WD
800	130 inches	WD
900	141 inches	WD
1000	109 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	9	1	0	0	---- 100%

Map unit: 102D Saddleback-Ricker Association, moderately steep
Transect 74

Observation	Depth	Drainage
100	67 inches	MWD
200	69 inches	MWD
300	64 inches	MWD
400	50 inches	WD
500	59 inches	WD
600	70 inches	MWD
700	80 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	2	0	0	0	----- 29%
>60 inches	0	0	5	0	0	----- 71%

Franklin County

Map unit: 48C Dixfield-Colonel-Lyman Association, strongly sloping
Location: 44°47.85' 70°45.07' to 44°48.16' 70°44.95'
Transect 75

Observation	Depth	Drainage
100	115 inches	MWD
200	99 inches	MWD
300	108 inches	MWD
400	113 inches	MWD
500	96 inches	MWD
600	94 inches	MWD
700	79 inches	SWP
800	90 inches	SWP
900	104 inches	SWP
1000	107 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	0	6	4	0	---- 100%

Map unit: 48C Dixfield-Colonel-Lyman Association, strongly sloping
Transect 76

Observation	Depth	Drainage
100	67 inches	SWP
200	114 inches	PD
300	79 inches	PD
400	83 inches	PD
500	84 inches	PD
600	94 inches	VPD
700	90 inches	PD
800	93 inches	SWP
900	81 inches	SWP
1000	67 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	0	0	4	6	---- 100%

Franklin County

Map unit: 48C Dixfield-Colonel-Lyman Association, strongly sloping
Transect 77

Observation	Depth	Drainage
100	103 inches	SWP
200	101 inches	PD
300	>196 inches	MWD
400	>196 inches	MWD
500	>196 inches	WD
600	69 inches	MWD
700	>196 inches	MWD
800	>196 inches	MWD

	SOIL DRAINAGE CLASS				
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD
00 - 20 inches	0	0	0	0	0
20 - 40 inches	0	0	0	0	0
40 - 60 inches	0	0	0	0	0
>60 inches	0	1	5	1	1 ---- 100%

Map unit: 54C Colonel-Dixfield-Brayton Association, strongly sloping
Location: 44°48.16' 70°44.95' to 44°48.47' 70°43.45'
Transect 78 (GPR WAS INEFFECTIVE ALONG TRANSECTS BECAUSE OF ROADFILL MATERIALS)

Observation	Depth	Drainage
100	inches	MWD
200	inches	MWD
300	inches	MWD
400	inches	SWP
500	inches	SWP
600	inches	SWP
700	inches	PD
800	inches	SWP
900	inches	SWP
1000	inches	SWP

Franklin County

Map unit: 54C Colonel-Dixfield-Brayton Association, strongly sloping

Transect 79 (GPR WAS INEFFECTIVE ALONG TRANSECTS BECAUSE OF ROADFILL MATERIALS)

Observation	Depth	Drainage
100	inches	SWP
200	inches	MWD
300	inches	MWD
400	inches	MWD
500	inches	MWD
600	inches	SWP
700	inches	MWD
800	inches	MWD
900	inches	SWP
1000	inches	MWD

Map unit: 54C Colonel-Dixfield-Brayton Association, strongly sloping

Transect 80 (GPR WAS INEFFECTIVE ALONG TRANSECTS BECAUSE OF ROADFILL MATERIALS)

Observation	Depth	Drainage
100	inches	MWD
200	inches	MWD
300	inches	SWP
400	inches	SWP
500	inches	MWD
600	inches	MWD
700	inches	SWP
800	inches	SWP
900	inches	SWP
1000	inches	MWD

Map unit: 54C Colonel-Dixfield-Brayton Association, strongly sloping

Transect 81 (GPR WAS INEFFECTIVE ALONG TRANSECTS BECAUSE OF ROADFILL MATERIALS)

Observation	Depth	Drainage
100	inches	MWD
200	inches	MWD
300	inches	MWD
400	inches	MWD
500	inches	MWD
600	inches	SWP
700	inches	MWD
800	inches	WD
900	inches	MWD
1000	inches	MWD

Franklin County

Map unit: 54C Colonel-Dixfield-Brayton Association, strongly sloping

Transect 82 (GPR WAS INEFFECTIVE ALONG TRANSECTS BECAUSE OF ROADFILL MATERIALS)

Observation	Depth	Drainage
100	inches	MWD
200	inches	SWP
300	inches	SWP
400	inches	SWP
500	inches	SWP
600	inches	SWP
700	inches	PD
800	inches	MWD
900	inches	SWP
1000	inches	SWP

Map unit: 54C Colonel-Dixfield-Brayton Association, strongly sloping

Transect 83 (GPR WAS INEFFECTIVE ALONG TRANSECTS BECAUSE OF ROADFILL MATERIALS)

Observation	Depth	Drainage
100	inches	MWD
200	inches	SWP
300	inches	SWP
400	inches	SWP
500	inches	MWD
600	inches	MWD
700	inches	MWD
800	inches	MWD
900	inches	MWD
1000	inches	MWD

Franklin County

Map unit: 301C Skerry-Hermon Association, rolling
Location: 44°48.00' 70°44.55' to 44°49.06' 70°44.39'
Transect 84

Observation	Depth	Drainage
100	31 inches	WD
200	41 inches	WD
300	68 inches	MWD
400	51 inches	MWD
500	71 inches	MWD
600	76 inches	MWD
700	57 inches	WD
800	50 inches	WD
900	66 inches	SWP
1000	97 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	3	1	0	0	----- 40%
>60 inches	0	1	3	1	0	----- 50%

Map unit: 301C Skerry-Hermon Association, rolling
Transect 85

Observation	Depth	Drainage
100	41 inches	WD
200	43 inches	PD
300	57 inches	SWP
400	72 inches	WD
500	71 inches	MWD
600	80 inches	WD
700	36 inches	WD
800	83 inches	WD
900	51 inches	WD
1000	64 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	2	0	1	1	----- 40%
>60 inches	0	4	1	0	0	----- 50%

Franklin County

Map unit: 301C Skerry-Hermon Association, rolling
Transect 86

Observation	Depth	Drainage
100	130 inches	SWP
200	107 inches	PD
300	51 inches	SWP
400	47 inches	MWD
500	90 inches	WD
600	100 inches	WD
700	105 inches	SWP
800	105 inches	MWD
900	90 inches	MWD
1000	117 inches	PD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	1	1	0	----- 20%
>60 inches	0	2	2	2	2	----- 80%

Map unit: 301C Skerry-Hermon Association, rolling
Transect 87

Observation	Depth	Drainage
100	123 inches	PD
200	104 inches	MWD
300	46 inches	MWD
400	88 inches	WD
500	100 inches	WD
600	121 inches	MWD
700	111 inches	WD
800	79 inches	WD
900	117 inches	SWP
1000	133 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	1	0	0	----- 10%
>60 inches	0	4	3	1	1	----- 90%

Franklin County

Map unit: 301C Skerry-Hermon Association, rolling
Transect 88

Observation	Depth	Drainage
100	86 inches	PD
200	66 inches	WD
300	138 inches	WD
400	178 inches	WD
500	170 inches	WD
600	144 inches	WD
700	90 inches	MWD
800	47 inches	MWD
900	29 inches	WD
1000	157 inches	PD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	0	1	0	0	----- 10%
>60 inches	0	5	1	0	2	----- 80%

Map unit: 301C Skerry-Hermon Association, rolling
Transect 89

Observation	Depth	Drainage
100	57 inches	SWP
200	53 inches	SWP
300	61 inches	SWP
400	86 inches	SWP
500	103 inches	MWD
600	84 inches	PD
700	128 inches	MWD
800	77 inches	WD
900	131 inches	PD
1000	120 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	2	0	----- 20%
>60 inches	0	1	3	2	2	----- 80%

Franklin County

Map unit: 301C Skerry-Hermon Association, rolling
Transect 90

Observation	Depth	Drainage
100	46 inches	WD
200	76 inches	PD
300	47 inches	WD
400	107 inches	WD
500	24 inches	WD
600	81 inches	WD
700	4 inches	SWP
800	80 inches	WD
900	104 inches	SWP
1000	124 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	1	0	----- 10%
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	2	0	0	0	----- 20%
>60 inches	0	4	0	1	1	----- 60%

Map unit: 301C Skerry-Hermon Association, rolling
Transect 91

Observation	Depth	Drainage
100	128 inches	PD
200	150 inches	PD
300	86 inches	PD
400	103 inches	SWP
500	101 inches	PD
600	66 inches	SWP
700	96 inches	MWD
800	147 inches	MWD
900	128 inches	MWD
1000	140 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	0	4	2	4	---- 100%

Franklin County

Map unit: 301C Skerry-Hermon Association, rolling
Transect 92

Observation	Depth	Drainage
100	131 inches	MWD
200	124 inches	SWP
300	124 inches	PD
400	80 inches	SWP
500	49 inches	WD
600	43 inches	WD
700	56 inches	WD
800	69 inches	WD
900	63 inches	WD
1000	114 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	3	0	0	0	----- 30%
>60 inches	0	3	1	2	1	----- 70%

Map unit: 301C Skerry-Hermon Association, rolling
Transect 93

Observation	Depth	Drainage
100	64 inches	WD
200	94 inches	WD
300	111 inches	WD
400	114 inches	WD
500	127 inches	WD
600	40 inches	WD
700	100 inches	WD
800	83 inches	WD
900	70 inches	WD
1000	69 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	9	0	0	0	----- 90%

Franklin County

Map unit: 301C Skerry-Hermon Association, rolling
Transect 94

Observation	Depth	Drainage
100	40 inches	WD
200	69 inches	WD
300	88 inches	WD
400	70 inches	WD
500	38 inches	WD
600	69 inches	PD
700	49 inches	WD
800	31 inches	WD
900	134 inches	WD
1000	71 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	2	0	0	0	----- 20%
>60 inches	0	6	0	0	1	----- 70%

Map unit: 301C Skerry-Hermon Association, rolling
Transect 95

Observation	Depth	Drainage
100	81 inches	WD
200	133 inches	MWD
300	93 inches	WD
400	131 inches	WD
500	94 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	3	2	0	0	---- 100%

Somerset County

Map unit: 302C Hermon-Tunbridge Association, rolling
Location: 45°14.91' 70°29.48' to 45°15.36' 70°29.68'
Transect 96

Observation	Depth	Drainage
100	41 inches	WD
200	49 inches	WD
300	190 inches	VPD
400	132 inches	MWD
500	89 inches	WD
600	90 inches	PD
700	50 inches	PD
800	161 inches	PD
900	110 inches	PD
1000	176 inches	PD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	2	0	0	1	----- 30%
>60 inches	0	1	1	0	5	----- 70%

Map unit: 302C Hermon-Tunbridge Association, rolling
Transect 97

Observation	Depth	Drainage
100	>196 inches	MWD
200	>196 inches	WD
300	81 inches	WD
400	88 inches	WD
500	101 inches	WD
600	137 inches	WD
700	87 inches	WD
800	118 inches	WD
900	67 inches	MWD
1000	93 inches	PD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	0	0	0	
>60 inches	0	7	2	0	1	---- 100%

Somerset County

Map unit: 302C Hermon-Tunbridge Association, rolling
Transect 98

Observation	Depth	Drainage
100	93 inches	VPD
200	94 inches	WD
300	130 inches	WD
400	96 inches	VPD
500	163 inches	WD
600	140 inches	WD
700	>196 inches	WD
800	118 inches	PD
900	183 inches	WD
1000	97 inches	PD
1100	110 inches	WD
1200	>196 inches	PD
1300	157 inches	WD
1400	117 inches	PD
1500	47 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	1	0	0	0	----- 7%
>60 inches	0	8	0	0	6	----- 93%

Map unit: 48C Dixfield-Colonel-Lyman Association, strongly sloping
Location: 45°15.36' 70°29.68' to 45°15.72' 70°29.13'
Transect 99

Observation	Depth	Drainage
100	39 inches	MWD
200	14 inches	MWD
300	79 inches	MWD
400	58 inches	MWD
500	50 inches	MWD
600	24 inches	WD
700	36 inches	WD
800	86 inches	SWP
900	107 inches	PD
1000	124 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	1	0	0	----- 10%
20 - 40 inches	0	2	1	0	0	----- 30%
40 - 60 inches	0	0	2	0	0	----- 20%
>60 inches	0	0	1	2	1	----- 40%

Somerset County

Map unit: 48C Dixfield-Colonel-Lyman Association, strongly sloping
Transect 100

Observation	Depth	Drainage
100	67 inches	MWD
200	61 inches	MWD
300	64 inches	SWP
400	73 inches	MWD
500	57 inches	MWD
600	77 inches	MWD
700	53 inches	MWD
800	29 inches	WD
900	43 inches	WD
1000	79 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 10%
40 - 60 inches	0	1	2	0	0	----- 30%
>60 inches	0	0	5	1	0	----- 60%

Map unit: 48C Dixfield-Colonel-Lyman Association, strongly sloping
Transect 101

Observation	Depth	Drainage
100	74 inches	SWP
200	89 inches	PD
300	161 inches	SWP
400	49 inches	SWP
500	53 inches	SWP
600	32 inches	SWP
700	43 inches	MWD
800	59 inches	MWD
900	31 inches	SWP
1000	49 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	2	0	----- 20%
40 - 60 inches	0	0	2	3	0	----- 50%
>60 inches	0	0	0	2	1	----- 30%

Somerset County

Map unit: 48C Dixfield-Colonel-Lyman Association, strongly sloping
Transect 102

Observation	Depth	Drainage
100	81 inches	SWP
200	150 inches	SWP
300	123 inches	MWD
400	47 inches	MWD
500	26 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	1	0	0	0	----- 20%
40 - 60 inches	0	0	1	0	0	----- 20%
>60 inches	0	0	1	2	0	----- 60%

Map unit: 94XC Lyman-Tunbridge Association, moderately steep
Location: 45°15.72' 70°29.13' to 45°16.02' 70°28.97'
Transect 103

Observation	Depth	Drainage
100	11 inches	WD
200	47 inches	WD
300	53 inches	WD
400	51 inches	WD
500	17 inches	WD
600	4 inches	WD
700	164 inches	WD
800	0 inches	WD
900	63 inches	WD
1000	90 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	4	0	0	0	----- 40%
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	3	0	0	0	----- 30%
>60 inches	0	2	0	1	0	----- 30%

Somerset County

Map unit: 94XC Lyman-Tunbridge Association, moderately steep
Transect 104

Observation	Depth	Drainage
100	103 inches	SWP
200	17 inches	WD
300	43 inches	WD
400	83 inches	WD
500	89 inches	WD
600	133 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 17%
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	1	0	0	0	----- 17%
>60 inches	0	3	0	1	0	----- 66%

Map unit: 54C Colonel-Dixfield-Brayton Association, strongly sloping
Transect 105

Observation	Depth	Drainage
100	114 inches	PD
200	128 inches	VPD
300	76 inches	SWP
400	100 inches	SWP
500	54 inches	MWD
600	54 inches	MWD
700	64 inches	MWD
800	74 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	0	2	0	0	----- 25%
>60 inches	0	0	2	2	2	----- 75%

Somerset County

Map unit: 47C Monadnock-Berkshire-Lyman Association, strongly sloping
Location: 45°16.81' 70°30.01' to 45°16.25' 70°29.70'
Transect 106

Observation	Depth	Drainage
100	>196 inches	WD
200	>196 inches	WD
300	>196 inches	WD
400	97 inches	WD
500	40 inches	WD
600	70 inches	WD
700	114 inches	WD
800	70 inches	WD
900	120 inches	WD
1000	64 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	1	0	0	0	----- 10%
>60 inches	0	9	0	0	0	----- 90%

Map unit: 47C Monadnock-Berkshire-Lyman Association, strongly sloping
Transect 107

Observation	Depth	Drainage
100	101 inches	WD
200	103 inches	WD
300	103 inches	WD
400	54 inches	WD
500	71 inches	WD
600	64 inches	PD
700	103 inches	MWD
800	86 inches	MWD
900	57 inches	PD
1000	64 inches	PD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	1	0	0	1	----- 20%
>60 inches	0	4	2	0	2	----- 80%

Somerset County

Map unit: 47C Monadnock-Berkshire-Lyman Association, strongly sloping

Transect 108

Observation	Depth	Drainage
100	31 inches	PD
200	43 inches	WD
300	81 inches	MWD
400	97 inches	WD
500	100 inches	WD
600	84 inches	WD
700	53 inches	WD
800	88 inches	SWP
900	137 inches	WD
1000	117 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	1	----- 10%
40 - 60 inches	0	2	0	0	0	----- 20%
>60 inches	0	5	1	1	0	----- 70%

Map unit: 47C Monadnock-Berkshire-Lyman Association, strongly sloping

Transect 109

Observation	Depth	Drainage
100	31 inches	WD
200	60 inches	WD
300	71 inches	MWD
400	53 inches	WD
500	103 inches	WD
600	57 inches	WD
700	76 inches	WD
800	133 inches	WD
900	97 inches	WD
1000	31 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	2	0	0	0	----- 20%
40 - 60 inches	0	2	0	0	0	----- 20%
>60 inches	0	5	1	0	0	----- 60%

Somerset County

Map unit: 47C Monadnock-Berkshire-Lyman Association, strongly sloping

Transect 110

Observation	Depth	Drainage
100	74 inches	WD
200	123 inches	WD
300	102 inches	WD
400	50 inches	WD
500	86 inches	WD
600	57 inches	WD
700	89 inches	WD
800	93 inches	WD
900	111 inches	WD
1000	121 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	0	0	0	
40 - 60 inches	0	2	0	0	0	----- 20%
>60 inches	0	8	0	0	0	----- 80%

Franklin County

Map unit: 76C Telos-Chesuncook-Elliottsville Association, strongly sloping

Location: 45°08.29' 70°44.38' to 45°08.89' 70°44.13'

Transect 111

Observation	Depth	Drainage
100	27 inches	WD
200	18 inches	WD
300	24 inches	WD
400	23 inches	MWD
500	38 inches	PD
600	98 inches	WD
700	27 inches	MWD
800	38 inches	WD
900	38 inches	WD
1000	23 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	0	0	0	----- 10%
20 - 40 inches	0	4	3	0	1	----- 80
40 - 60 inches	0	0	0	0	0	
>60 inches	0	1	0	0	0	----- 10%

Franklin County

Map unit: 76C Telos-Chesuncook-Elliottsville Association, strongly sloping

Transect 112

Observation	Depth	Drainage
100	27 inches	WD
200	47 inches	WD
300	41 inches	WD
400	21 inches	WD
500	26 inches	WD
600	57 inches	WD
700	28 inches	WD
800	67 inches	MWD
900	40 inches	WD
1000	37 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	4	1	0	0	----- 50
40 - 60 inches	0	4	0	0	0	----- 40%
>60 inches	0	0	1	0	0	----- 10%

Map unit: 76C Telos-Chesuncook-Elliottsville Association, strongly sloping

Transect 113

Observation	Depth	Drainage
100	50 inches	MWD
200	59 inches	WD
300	24 inches	WD
400	18 inches	WD
500	50 inches	WD
600	27 inches	WD
700	31 inches	MWD
800	11 inches	WD
900	28 inches	WD
1000	26 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	2	0	0	0	----- 20%
20 - 40 inches	0	4	1	0	0	----- 50
40 - 60 inches	0	2	1	0	0	----- 30%
>60 inches	0	0	0	0	0	

Franklin County

Map unit: 76C Telos-Chesuncook-Elliottsville Association, strongly sloping

Transect 114

Observation	Depth	Drainage
100	26 inches	WD
200	33 inches	WD
300	20 inches	SWP
400	10 inches	WD
500	30 inches	WD
600	30 inches	WD
700	18 inches	WD
800	10 inches	WD
900	11 inches	SWP
1000	26 inches	MWD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	3	0	1	0	----- 40%
20 - 40 inches	0	4	1	1	0	----- 60
40 - 60 inches	0	0	0	0	0	
>60 inches	0	0	0	0	0	

Map unit: 76C Telos-Chesuncook-Elliottsville Association, strongly sloping

Transect 115

Observation	Depth	Drainage
100	14 inches	MWD
200	27 inches	SWP
300	24 inches	WD
400	14 inches	WD
500	28 inches	MWD
600	34 inches	MWD
700	57 inches	SWP
800	43 inches	MWD
900	24 inches	WD
1000	30 inches	PD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	1	1	0	0	----- 20%
20 - 40 inches	0	2	2	1	1	----- 60
40 - 60 inches	0	0	1	1	0	----- 20%
>60 inches	0	0	0	0	0	

Franklin County

Map unit: 76C Telos-Chesuncook-Elliottsville Association, strongly sloping

Transect 116

Observation	Depth	Drainage
100	51 inches	SWP
200	31 inches	MWD
300	41 inches	SWP
400	23 inches	PD
500	26 inches	SWP
600	74 inches	PD
700	83 inches	MWD
800	70 inches	SWP
900	57 inches	SWP
1000	60 inches	SWP
1100	26 inches	SWP
1200	30 inches	SWP

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	0	1	3	1	----- 42
40 - 60 inches	0	0	0	3	0	----- 25%
>60 inches	0	0	1	2	1	----- 33%

Map unit: 89C Elliottsville-Monson Association, strongly sloping
Location: 45°08.89' 70°44.13' to 45°08.74' 70°44.45'

Transect 117

Observation	Depth	Drainage
100	20 inches	WD
200	24 inches	WD
300	37 inches	WD
400	37 inches	WD
500	30 inches	MWD
600	27 inches	WD
700	40 inches	MWD
800	31 inches	WD
900	46 inches	WD
1000	29 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	0	
20 - 40 inches	0	7	1	0	0	----- 80
40 - 60 inches	0	1	1	0	0	----- 20%
>60 inches	0	0	0	0	0	

Franklin County

Map unit: 89C Elliottsville-Monson Association, strongly sloping
Transect 118

Observation	Depth	Drainage
100	24 inches	WD
200	13 inches	PD
300	37 inches	WD
400	28 inches	WD
500	21 inches	WD
600	30 inches	WD
700	21 inches	WD
800	26 inches	WD
900	61 inches	WD
1000	26 inches	WD

	SOIL DRAINAGE CLASS					
DEPTH TO BEDROCK	EX	WD	MWD	SWP	PD	
00 - 20 inches	0	0	0	0	1	----- 10%
20 - 40 inches	0	8	0	0	0	----- 80
40 - 60 inches	0	0	0	0	0	
>60 inches	0	1	0	0	0	----- 10%