RECORDS OF WELLS, TEST BORINGS, AND SOME MEASURED GEOLOGIC SECTIONS NEAR THE WESTERN NEW YORK NUCLEAR SERVICE CENTER, CATTARAUGUS COUNTY, NEW YORK

By Marcel P. Bergeron

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CONVERSION FACTORS AND ABBREVIATIONS

Factors for converting inch-pound units used in this report to International System (SI) units are shown below.

To convert inch-pound unit	Multiply by	To obtain SI unit
	Length	
inch (in)	2.54	centimeter (cm)
foot (ft)	0.3048	meter (m)
mile (mi)	1.609	kilometer (km)
	Area	
square mile (mi^2)	2.590	square kilometer (km^2)
acre	0.4047	hectare (ha)
	Flow	
gallon per minute (gal/min)	0.06309	liter per second (l/s)

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ABSTRACT

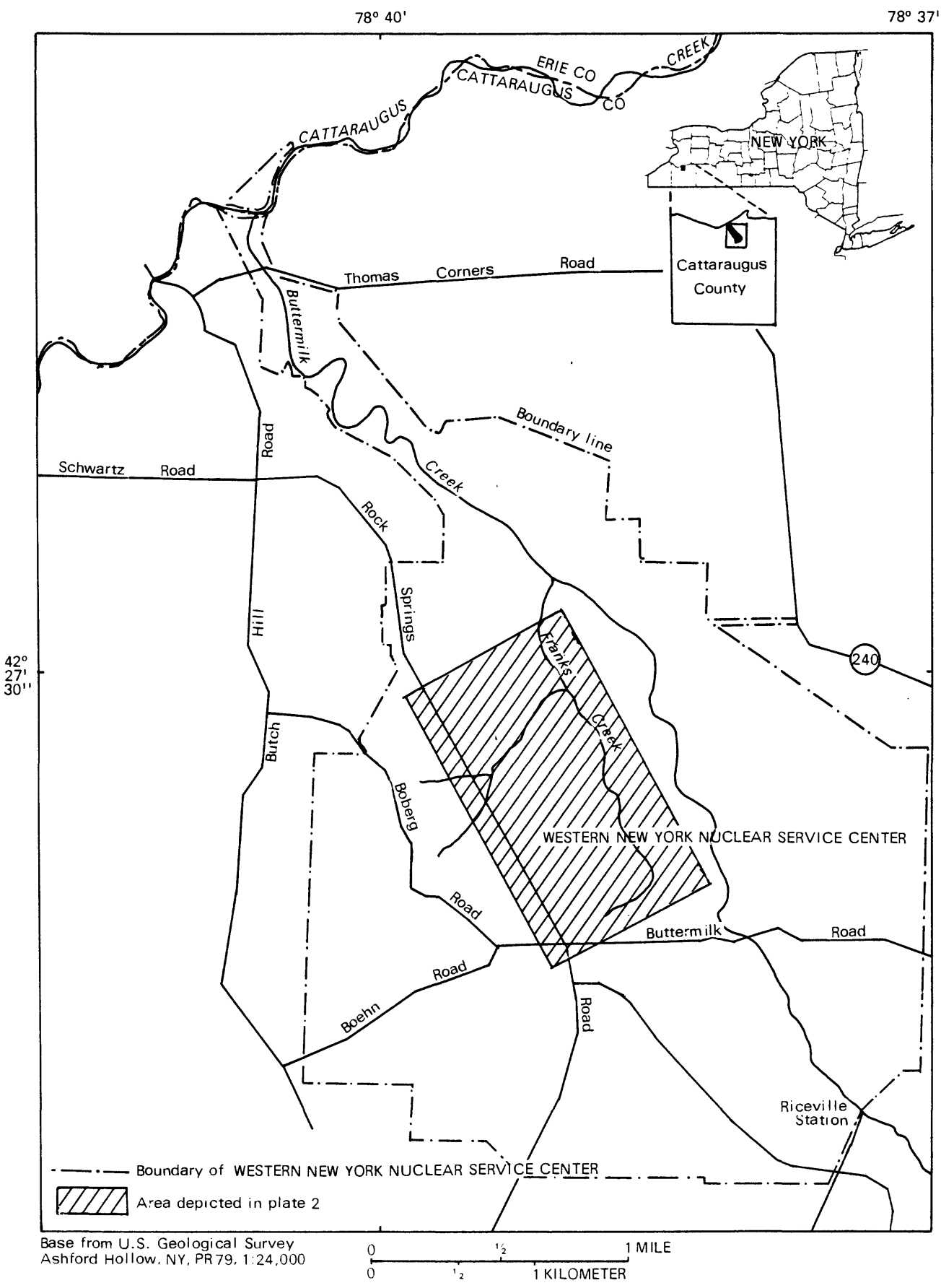
The Western New York Nuclear Service Center (WNYNSC) is a 3,336-acre (5.2-square mile) tract in northern Cattaraugus County, N.Y., about 30 miles south of Buffalo. In 1963, about 250 acres (0.4 square miles) was developed for a nuclear-fuel reprocessing plant and ancillary facilities, including a receiving and storage facility to store fuel prior to reprocessing, underground storage tanks for liquid high-level radioactive wastes from the fuel reprocessing, a low-level radioactive wastewater-treatment plant, and two burial grounds for shallow burial of solid radioactive waste. A series of geologic and hydrologic investigations was done by several agencies during 1960-83 as part of the development and construction of the facilities to evaluate the potential for movement of radionuclides during site operation. These studies produced a large quantity of well and boring data, but the data are scattered in numerous publications and unpublished reports, many of which are difficult to locate or obtain.

This report is a compilation of well and boring data collected by several agencies during this period. Included are records of 236 wells, logs of 147 wells and 161 test borings, and descriptions of 20 measured geologic sections. Two oversized maps show locations of the reported data. This compilation should be useful in future hydrogeologic studies at the site.

INTRODUCTION

In 1961, the New York State Office of Atomic Development acquired 3,336 acres (5.2 mi^2) near the hamlet of West Valley in the town of Ashford, about 30 miles south of Buffalo and named the site the Western New York Nuclear Service Center (WNYNSC). (Location is shown in fig. 1.) In 1963, the U.S. Atomic Energy Commission issued a permit authorizing development of about 250 acres (0.4 mi^2) of the WNYNSC to Nuclear Fuels Services, Inc. for construction of a nuclear-fuel reprocessing plant and ancillary facilities, including (1) a receiving and storage facility used to store fuel prior to reprocessing, (2) underground storage tanks for liquid high-level radioactive wastes from the fuel reprocessing, (3) a low-level wastewater-treatment plant, and (4) two burial grounds for shallow burial of solid radioactive waste.

During 1960-83, several geologic and hydrologic investigations were conducted by Federal and State agencies and consultants near and within the WNYNSC to evaluate the potential for radionuclide migration from the site. These



Location of Study Area in Cattaraugus County

investigations included the initial geologic site-feasibility investigations by several State and Federal agencies during 1960-63, hydraulic fracturing tests in bedrock by the U.S. Geological Survey during 1969-71, several soils and foundation investigations relating to construction of new facilities at the WNYNSC by several consultants during 1970-75, a U.S. Environmental Protection Agency (EPA) study of the State-licensed burial ground during 1973-75, and a series of geohydrologic and radiohydrologic studies by the U.S. Geological Survey and the New York State Geological Survey during 1974-83. The data resulting from these investigations are scattered in numerous publications and unpublished reports, many of which are difficult to locate or obtain.

Purpose and Scope

This report is a compilation of data collected from 1960 through 1983 during the geologic and hydrologic investigations noted above. It presents records of 236 wells and 161 test borings and generalized descriptions of 20 measured geologic sections. Locations of the wells, test holes, and vertical sections are shown in plates 1 and 2. Also included is a summary of data sources, listed in alphabetical order by author or compiler.

Acknowledgments

This author gratefully acknowledges the assistance, suggestions, and information provided by Allan D. Randall, David E. Prudic, Robert Schneider, and George H. Chase of the U.S. Geological Survey and James R. Albanese, Susan L. Anderson, and Steven Potter of the New York State Geological Survey.

ARRANGEMENT OF DATA

Wells and Borings

Numbering System

Several numbering systems were used during the several investigations to identify the wells and borings. The system used in the well record and logs (tables 1 and 2) incorporates the previous systems. The number identifying each well or boring consists of three parts: (1) the first two digits indicate the year in which the well or boring was drilled; (2) the two- to four-letter code that follows identifies the agency or organization responsible for drilling the well or boring; (3) the last number (one to three digits or letters) relates the present identifying number with the original system used. The second and third part of the identifying number for some wells may be the same as the original number. Examples of identifying numbers used in this report are shown in table 1.

Arrangement of Logs

Pertinent information about each well recorded during the 1960-83 studies is given in table 2; well logs and test borings are given in table 3.

Table 1.--Examples of well-identification numbers used in previous studies and code used in this compilation.

Example of original well or boring identification	Name of agency responsible for drilling or boring	Year completed or inventoried by USGS	Well or boring number assigned in this report
CT-284	private domestic well	1961	61-CT284
PAH (power auger hole)-1	New York State Department of Public Works, Bureau of Soil Mechanics	1961	61-PAH1
DH (deep hole)-1	New York State Department of Public Works, Bureau of Soil Mechanics	1961	61-DH1
boring 1	Nuclear Fuels Services, Inc.	1973	73-NFS1
boring 1	Dames and Moore, Inc.	1962	62-DMB1
boring 1	Empire Soils Investigations, Inc.	1975	75-ESI1
test pit 1	Dames and Moore, Inc.	1974	74-DMTP1
well A	U.S. Geological Survey	1975	75-USGSA
well 80-1	U.S. Geological Survey	1980	80-USGS1

The well records (table 2) are arranged according to 1-minute strips of latitude, beginning at the south boundary of the Western New York Nuclear Service Center and progressing north. Records from each strip are listed from east to west by degrees, minutes, and seconds of longitude. Where two or three wells are so close together that they have the same coordinates, their records are grouped together. Logs of wells (table 3) within a given latitude and longitude are listed in chronological order of drilling date. For wells drilled in the same year, the logs are grouped according to agency, then in numerical order by original well or boring number.

Computer Access

All information on wells and test holes included in table 2 of this report is stored in the computerized Ground-Water Site Inventory (GWSI) data base of the U.S. Geological Survey. The GWSI data base is a part of Geological Survey's National Water Data Storage and Retrieval System (WATSTORE), which is operated and maintained in the central computer facility of the Survey's National Headquarters in Reston, Va. Access information to WATSTORE is available at all U.S. Geological Survey offices. The GWSI site identification number is the latitude-longitude location given in table 2.

Descriptions of Geologic Sections

Descriptions of measured geologic sections are given in table 4. Each section is identified by the number or letter used by the investigators who described the sections. The location of each section is shown on plate 1.

Locations of Wells, Borings, and Geologic Sections

Plate 1 (scale 1:12,500) represents the entire 13-mi^2 study area; plate 2 (scale 1:1200) is a detailed 2-foot-contour map of 0.75 mi^2 of the Western New York Nuclear Service Center. Plate 2 shows the location of (1) the fuel-reprocessing plant and the ancillary facilities at the center, (2) a Nuclear Regulatory Commission-licensed waste-burial ground, and (3) a New York State-licensed waste-burial ground.

The location of each well, boring, and measured geologic section is shown on either plate 1 or plate 2. All data given in tables 2-4 can be located on the plates by latitude and longitude, to the nearest second. Even though the geologic logs and well records of several wells installed by Nuclear Fuel Services, Inc., near the fuel-reprocessing plant were unavailable for this compilation, their locations are shown in plate 2.

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Tables 2 through 4

The following tables present well records, well and test borings, logs, and records of measured geologic sections:

Table 2.--Record of wells and test holes in the Western New York Nuclear Service Center

EXPLANATION OF COLUMN HEADINGS

LOCATION.--Coordinates of latitude and longitude for each well. Wells are listed from east to west within successive 1-minute strips of latitude, beginning with the southernmost strip.

OWNER: Some names are abbreviated or run together because of space limitations. Abbreviations used include the following:

NYDPW BSM - New York State Department of Public Works, Bureau of Soil Mechanics
USGS - U.S. Geological Survey
WNYNSC - Western New York Nuclear Service Center

USE OF SITE:

- O Observation well for measurement of water level and temperature and for gas- or water-sample collection.
- T Test hole drilled to obtain geologic or hydrologic information needed for design of buildings or highways or location of water supplies. Most such holes were destroyed soon after completion; other were abandoned; still others were converted to other uses and are so recorded.
- U Unused.
- W Withdrawal of water for some use.
- Z Destroyed: filled and (or) casing pulled. Formerly used or intended for use other than as a test hole.

USE OF WATER:

- H Former domestic. At many farms, a single well supplies both the farmhouse and stock at the barn. In general, such use is coded H; wells on a few large farms are coded S
- S Former stock supply
- U Unused; applies to all wells except those used for withdrawal of water

LAND-SURFACE ALTITUDE: For many wells, estimated from topographic maps since 1979. Spirit levels used where available. Datum is National Geodetic Vertical Datum of 1929.

WELL DEPTH: Depth of the well, in feet below land surface.

Table 2.--Record of wells and test holes in the Western New York Nuclear Service Center (continued)

EXPLANATION OF COLUMN HEADINGS (continued)

WELL FINISH: Refers to the character of the openings that permit water to enter, as follows:

G	Gravel wall or gravel pack and commercial screen
P	Perforated or slotted casing
S	Commercial well screen
X	Open hole; no casing or other support opposite aquifer
W	Well point

GEOLOGIC UNIT:

SHBR	Shale bedrock (Machias Shale), Devonian age	SDGV	Sand and gravel, Pleistocene age
		SDST	Sand and silt, Pleistocene age
TILL	Till, Pleistocene age	SAND	Sand, Pleistocene age
LAKE	Lake deposits, Pleistocene age		

A few wells cased to or slightly into bedrock may obtain much of their water from sand or gravel immediately over the rock, but bedrock is listed as the aquifer for all wells drilled into bedrock unless water is specifically reported to enter around the end of the casing.

WATER LEVEL: Depth to water level, in feet below the measuring point of well.

REMARKS: Symbols, abbreviations, and words commonly used in the remarks include the following:

BR	bedrock	W/L	water level. W/L followed by two dates indicates that periodic water-level measurements by U.S. Geological Survey between the specified dates are available from the U.S. Geological Survey office in Ithaca, N.Y.
FT	foot or feet		
LOG	lithologic log in table 3		

Table 2.--Records of wells

LOCATION		WELL NUMBER	OWNER	USE OF SITE	USE OF WATER	YEAR DRIL-LED	ALTI-TUDE (FT)	WELL DEPTH (FT)	WELL FIN-ISH	HYDRO-LOGIC UNIT	WATER LEVEL FT	WATER LEVEL DATE	REMARKS
Lat	Long												
422453	783814	61-CT283	FELDMAN	W	H	1961	1760	88	X	SHBR	57.8	11/07/1961	BR AT 68 FT
422526	784018	62-CT299	SKINNER	W	H		1845	11.9		SHBR	4.86	04/21/1962	BR AT 11.9 FT
422542	783803	62-CT307	CODD	W	H		1450	250		BR	15		
422550	783758	62-PAH108	NYDPW BSM	T		1962	1428	18		TILL	16.5	01/25/1962	SEE LOG PAH-107
422551	783920	60-CT264	KWIECIEN	W	H		1660	22.6		TILL	21	12/08/1960	
422551	783920	60-CT265	KWIECIEN	U	U		1760	140		SHBR			
422557	783920	61-PAH52	NYDPW BSM	T		1961	1631.63	23		TILL	6	12/20/1961	LOG
422603	783914	60-CT263		W	H		1560	21.9			12.4	12/08/1960	
422605	783826	62-PAH106	NYDPW BSM	T		1962	1430	16		TILL			LOG
422609	783909	60-CT262	SCHWARTZ	W	H		1490	16.5		TILL	10.7	12/08/1960	
422613	784028	62-CT298	WILKOSZ	W	H		1820	100	X	SHBR			
422615	783720	62-CT309	SIMKO	W	H		1420	14.7			4.15	04/30/1962	
422615	783720	62-CT310	SIMKO	U	U		1420	10.5			5.6	04/30/1962	
422617	783956	62-PAH76	NYDPW BSM	T		1962	1823	9		TILL			LOG
422624	783911	60-CT261	BACKHAUS	W	H		1450	6.1			4.3	12/08/1960	
422624	783950	62-CT302		U	U		1770	19.4			12.98	04/27/1962	
422626	783858	62-DH2	NYDPW BSM	T		1962	1417.56	70		TILL	60.42	04/04/1962	LOG
422626	784003	62-PAH77	NYDPW BSM	T		1962	1760	15		TILL			LOG
422627	783758	62-PAH64	NYDPW BSM	T		1962	1402.13	6		TILL	3.75	01/03/1962	SEE LOG PAH-63
422627	783939	60-CT270		U	U		1760	25.5			21.2	12/08/1960	
422629	783823	60-CT260	TIEDE	U	U		1350	219			184.67	11/02/1960	
422629	783917	62-PAH69	NYDPW BSM	T		1962	1472.23	17		TILL			LOG
422632	783843	61-PAH27	NYDPW BSM	T		1961	1386.87	15			6.43	11/02/1961	SEE LOG PAH-26
422631	783909	61-PAH24	NYDPW BSM	T		1961	1424.34	10			7.33	10/31/1961	SEE LOG PAH-23
422634	783655	62-CT311	HADLEY	W	U		1450	11.9			7.53	04/30/1962	
422636	783752	62-PAH60	NYDPW BSM	T		1962	1394.92	40		TILL			LOG
422636	783830	62-DH14	NYDPW BSM	T		1962	1370.60	40		TILL			LOG
422636	783909	60-CT271	KEMPKA	W	H	1931	1420	18.2			5.74	12/09/1960	
422636	784042	62-CT297	RACHIC	W	H		1800	5.3		SHBR	2.82	04/21/1962	
422637	783824	60-CT259	LIPKA	U	U		1280	37.5			25.5	12/01/1960	
422637	783842	61-PAH1	NYDPW BSM	T		1961	1395.61	23		SDGV	20	09/25/1961	LOG
422637	783842	62-PAH121	NYDPW BSM	T		1962	1395.06	22		SDGV	11.2	04/27/1962	LOG
422637	783842	62-PAH122	NYDPW BSM	T		1962	1396.24	22		SDGV	12	04/27/1962	LOG
422637	783846	61-DH6	NYDPW BSM	T		1962	1387.90	80		SDST			LOG
422632	783857	61-PAH21	NYDPW BSM	T		1961	1386.95	31.5		TILL	6	10/19/1961	LOG
422632	783857	61-PAH22	NYDPW BSM	T		1961	1387.21	10			6.26	10/20/1961	SEE LOG PAH-21
422642	783804	69-USGS1	USGS	O		1969	1391.	1520		SHBR			Five wells used in USGS study
422642	783804	69-USGS2	USGS	O		1969	1396.5	1497.5		SHBR			of hydraulic fracturing of sha
422642	783804	69-USGS3	USGS	O		1969	1392.4	1520.		SHBR			Summary log of all wells given
422642	783804	69-USGS4	USGS	O		1969	1391.6	1520.		SHBR			in table 3 under 70-USGS1-5

Table 2.--Records of wells (continued)

LOCATION		WELL NUMBER	OWNER	USE OF SITE	USE OF WATER	YEAR DRIL-LED	ALTI-TUDE (FT)	WELL DEPTH (FT)	WELL FIN-ISH	HYDRO-LOGIC UNIT	WATER LEVEL FT	WATER LEVEL DATE	REMARKS
Lat	Long												
422642	783804	69-USGS5	USGS	O		1969	1388.7	1520.		SHBR			
422642	783840	61-PAH2	NYDPW BSM	T		1961	1393.78	28		TILL	14	09/21/1961	LOG
422642	783911	61-DH3	NYDPW BSM	T		1962	1398.40	73		SDGV			LOG
422643	783949	61-PAH51	NYDPW BSM	T		1961	1608.66	14		TILL	14.00	12/19/1961	LOG
422644	783809	62-DH9	NYDPW BSM	T		1962	1396.78	10		TILL			LOG
422643	783845	75-USGSW	USGS	O		1976	1384.30	138	S	LAKE			LOG,W/L 11/76-4/79
422644	784040	62-CT292		U	U		1780	17.8		SHBR	10.23	04/20/1962	
422642	783911	61-PAH31	NYDPW BSM	T		1961	1399.67	15			13.2	11/09/1961	SEE LOG DH-3
422645	783900	75-USGSK	USGS	T		1975	1385.90	50	S	TILL	20.00	08/19/1975	LOG,W/L 12/75-4/79
422647	783853	77-USGS11-1A	USGS	O		1977	1385.40	29.5	W	TILL	12.7	06/77	
422647	783854	77-USGS12-1A	USGS	O		1977	1385.70	14.9	W	TILL			
422647	783855	77-USGS13-1A	USGS	O		1977	1386.10	30.2	W	TILL	27.85	06/77	
422647	783839	61-PAH3	NYDPW BSM	T		1961	1385.32	27		TILL	20.50	09/22/1961	LOG
422647	783839	62-PAH118	NYDPW BSM	T		1962	1387.28	27		TILL	21.00	04/26/1962	LOG
422646	783850	75-USGSP	USGS	T		1975	1386	47.5	S	TILL			LOG,W/L 12/75-4/79
422647	783851	77-USGS8-1A	USGS	O		1977	1386.50	29	W	TILL			
422647	783851	77-USGS8-1B	USGS	O		1977	1388.56	30.0	W	TILL	17.68	06/77	
422647	783852	77-USGS10-1A	USGS	O		1977	1386.01	19.7	W	TILL			
422647	783852	77-USGS10-1B	USGS	O		1977	1386.00	27.5	W	TILL			
422647	783856	75-USGSQ	USGS	T		1975	1378.90	25	S	TILL			LOG,W/L 12/75-4/79
422647	783858	75-USGSU	USGS	O		1976	1378.60	10.1	S	TILL			LOG,W/L 6/76-4/79
422647	783859	75-USGSR	USGS	T		1975	1377.20	25	S	TILL			LOG
422648	783852	77-USGS9-1A	USGS	O		1977	1387.42	26.5	W	TILL			
422648	783852	77-USGS9-1B	USGS	O		1977	1386.20	29.5	W	TILL			
422648	783853	77-USGS11-2A	USGS	O		1977	1386.43	20	W	TILL			
422648	783856	77-USGS14-1A	USGS	O		1977	1386.35	27.3	W	TILL	24.35	06/77	
422648	783856	77-USGS14-2A	USGS	O		1977	1386.38	13	W	TILL			
422648	783756	62-PAH86	NYDPW BSM	T		1962	1447	8		TILL			LOG
422648	783848	79-EB8	USGS	T		1979	1359.39	15.80		TILL			LOG
422648	783857	75-USGSL	USGS	T		1975	1380	44.25	S	TILL			LOG,W/L 10/75-4/79
422648	783857	75-USGSL2	USGS	T		1975	1380	25.25	S	TILL			LOG,W/L 10/75-4/79
422647	783904	82-USGS2A	USGS	O		1982	1387.5	23.7	S	TILL			LOG
422647	783904	82-USGS2B	USGS	O		1982	1387.5	39.8	S	TILL			LOG
422647	783904	82-USGS2C	USGS	O		1982	1387.5	50.0	S	TILL			LOG
422648	783907	61-PAH33	NYDPW BSM	T		1961	1396.46	25		TILL	23.43	11/27/1961	SEE LOG PAH-32
422649	783902	82-USGS1A	USGS	O		1982	1382.5	19.1	S	TILL			LOG
422649	783902	82-USGS1B	USGS	O		1982	1382.5	39.9	S	TILL			LOG
422649	783902	82-USGS1C	USGS	O		1982	1382.5	49.7	S	TILL			LOG
422649	783901	82-USGS1D	USGS	O		1983	1382.5	98.0	S	LAKE			LOG
422649	783908	82-USGS3A	USGS	O		1982	1389.5	19.1	S	TILL			LOG

Table 2.--Records of wells (continued)

LOCATION		WELL NUMBER	OWNER	USE OF SITE	USE OF WATER	YEAR DRIL-LED	ALTI-TUDE (FT)	WELL DEPTH (FT)	WELL FIN-ISH	HYDRO-LOGIC UNIT	WATER LEVEL FT	WATER LEVEL DATE	REMARKS
Lat	Long												
422649	783908	82-USGS3B	USGS	O		1982	1389.5	36.0	S	TILL			LOG
422649	783908	82-USGS3C	USGS	O		1982	1389.5	49.2	S	TILL			LOG
422649	783908	82-USGS3D	USGS	O		1982	1389.5	101.5	S	LAKE			LOG
422649	783849	79-EB7	USGS	T		1979	1361.88	12.40		LAKE	9.70	04/26/1979	LOG
422650	783816	62-PAH67	NYDPW BSM	T		1962	1388.67	9		LAKE	8.00	01/04/1962	LOG
422650	783853	75-USGSN	USGS	T		1975	1385.55	48.00	S	TILL			LOG,W/L 12/75-4/80
422649	783854	75-USGSM	USGS	T		1975	1386.30	52.30	S	TILL			LOG,W/L 12/75-4/79
422651	783922	62-PAH-74	NYDPW BSM	T		1962	1446.59	21		TILL	17.56	01/12/1962	LOG
422652	783700	62-CT318	GREEN	W	H	1948	1570	90		SHBR			
422652	783858	76-USGS5-3A	USGS	O		1976	1387.03	30.0	W	TILL	14.43	06/76	
422652	783858	76-USGS5-3C	USGS	O		1976	1387.44	15.9	W	TILL	14.64	06/76	
422652	783858	76-USGS5-3D	USGS	O		1976	1386.55	24.1	W	TILL	13.95	06/76	
422652	783908	82-USGS4A	USGS	O		1982	1386	14.7	S	TILL			LOG
422652	783908	82-USGS4B	USGS	O		1982	1386	36.0	S	TILL			LOG
422652	783908	82-USGS4C	USGS	O		1982	1386	51.0	S	TILL			LOG
422653	783701	62-CT319	GREEN	W	H		1580	80		SHBR			
422653	783859	76-USGS5-2A	USGS	O		1976	1385.52	14.9	W	TILL	13.52	06/76	
422653	783859	76-USGS5-2B	USGS	O		1976	1384.94	29.3	W	TILL	14.34	06/76	
422653	783859	76-USGS5-2C	USGS	O		1976	1385.88	17.5	W	TILL	13.08	06/76	
422652	783858	75-USGSF	USGS	T		1975	1382.90	53.00	S	TILL	28.00	10/14/1975	LOG,W/L 12/75-7/78
422653	783901	75-USGSG	USGS	T		1975	1372.30	43.00	S	TILL	13.00	10/15/1975	LOG,W/L 12/75-4/79
422653	783904	82-USGS5A	USGS	O		1982	1379	20.4	S	TILL			LOG
422653	783904	82-USGS5B	USGS	O		1982	1379	44.3	S	TILL			LOG
422653	783904	82-USGS5C	USGS	O		1982	1379	49.7	S	TILL			LOG
422654	783800	62-PAH75	NYDPW BSM	T		1962	1424.95	12			11.90	01/16/1962	LOG
422653	783842	62-PAH4	NYDPW BSM	T		1961	1381.51	27		TILL	20.5	09/22/1961	LOG
422654	783853	77-EB1	USGS	T		1977	1356.14	8.86		SDGV	3.94	09/01/1977	LOG
422654	783853	78-EB2	USGS	T		1978	1353.85	6.73		TILL			LOG
422654	783854	76-USGSS1	USGS	O		1976	1345.90	14.60	S	TILL			LOG,W/L 9/76-4/79
422654	783854	76-USGSS2	USGS	O		1976	1345.90	5.60	S	TILL			LOG,W/L 5/76-4/79
422654	783859	76-USGS4-1A	USGS	O		1976	1387.30	28.2	W	TILL	17.1	06/76	
422654	783859	76-USGS4-1B	USGS	O		1976	1387.25	18.4	W	TILL	17.05	06/76	
422656	783859	75-USGSD	USGS	T		1975	1381.20	52.00	S	TILL			LOG,W/L 9/75-7/78
422656	783859	75-USGSD2	USGS	T		1975	1381	10.00	S	TILL			LOG,W/L 9/75-7/78
422654	783900	76-USGSH	USGS	O		1976	1377.50	8.80	G	TILL			LOG,W/L 7/76-4/79
422655	783858	75-USGSI	USGS	T		1975	1382.30	51.50	S	TILL	18.50	09/30/1975	LOG,W/L 12/75-4/79
422655	783858	75-USGSI4	USGS	O		1978	1351.50	12.80	S	TILL			LOG,W/L 8/76-4/79
422855	783858	76-USGS2-1A	USGS	O		1976	1385.74	29.84	W	TILL	23.04	06/76	
422655	783859	76-USGS3-1A	USGS	O		1976	1385.49	23.7	W	TILL	14.09	06/77	
422655	783959	76-USGS3-1B	USGS	O		1976	1386.00	17.9	W	TILL	14.70	06/77	

Table 2.--Records of wells (continued)

LOCATION		WELL NUMBER	OWNER	USE OF SITE	USE OF WATER	YEAR DRIL-LED	ALTI-TUDE (FT)	WELL DEPTH (FT)	WELL FIN-ISH	HYDRO-LOGIC UNIT	WATER LEVEL		REMARKS
											FT	DATE	
Lat	Long												
422655	783900	75-USGSE	USGS	T		1975	1380.70	48.30	S	TILL	5.00	09/10/1975	LOG,W/L 9/75-4/79
422655	783901	76-USGS5-1A	USGS	O		1976	1384.43	13.5	W	TILL	11.43	06/76	
422655	783901	76-USGS5-1B	USGS	O		1976	1384.08	20.1	W	TILL	17.72	06/76	
422656	783857	75-USGSJ	USGS	T		1975	1375.80	130.00	S	SDGV	4.00	09/25/1975	LOG,W/L 12/75-4/79
422656	783857	76-USGSJ4	USGS	O		1976	1377.40	10.00	S	TILL			LOG,W/L 10/76-4/79
422656	783919	80-USGS8	USGS	O		1980	1416.78	21	S	SDGV	14	09/29/1980	LOG
422657	783703	62-CT306	HEARY	W	H		1570	92.4		SHBR	59.86	04/28/1981	
422657	783859	75-USGSA	USGS	T		1975	1380.10	22.00	S	TILL			LOG,W/L 12/75-8/76
422657	783859	75-USGSA2	USGS	T		1975	1380.10	34.90	S	TILL	14.30	10/03/1975	LOG,W/L 12/75-7/78
422657	783901	75-USGSC2	USGS	T		1975	1378.50	40.50	S	TILL			LOG,W/L 12/75-7/78
422657	783902	77-USGSO	USGS	O		1977	1364.31	11.15	S	TILL			LOG,W/L 6/77-4/80
422657	783902	77-USGST	USGS	O		1977	1366.68	7.40	S	TILL			LOG,W/L 6/77-4/80
422657	783902	77-USGSX	USGS	O		1977	1351.12	9.50	S	TILL			LOG,W/L 6/77-4/80
422657	783902	77-USGSY	USGS	O		1977	1348.29	6.60	S	TILL			LOG,W/L 6/77-4/80
422657	783902	77-USGSZ	USGS	O		1977	1343.70	9.50	S	TILL			LOG,W/L 9/77-4/80
422658	783734	62-PAH80	NYDPW BSM	T		1962	1560	13		TILL			LOG
422658	783901	75-USGSB	USGS	T		1975	1374.70	46.00	S	SDGV	9.50	09/05/1975	LOG,W/L 9/75-7/78
422658	783908	60-CT269	WHITEMAN	U	U		1400	11.4			11.5	12/08/1960	
422653	783913	61-CT272	WNYNSC	U	U	1960	1395	155.8	X		92.76	10/16/1961	
422658	783954	62-PAH78	NYDPW BSM	T		1962	1565	15		TILL			LOG
422659	783910	61-PAH36	NYDPW BSM	T		1961	1395.82	6		SDGV	2.98	12/04/1961	SEE LOG PAH-35
422659	783912	60-CT268	SPITTLER	W	S		1400	5.1			4.5	12/08/1960	
422659	783957	62-CT286	BOBERG	U	U	1961	1580	110.	X		57.72	04/18/1962	
422700	783753	62-PAH79	NYDPW BSM	T		1962	1555.50	16		TILL	16	01/11/1962	LOG
422700	783921	80-USGS1	USGS	O		1980	1422.78	23	S	SDGV			LOG
422701	783857	75-USGSC	USGS	T		1975	1378.50	9.00	S	TILL			LOG,W/L 12/75-6/78
422701	783909	80-USGS7	USGS	O		1980	1392.73	6	S	SDGV	2.43	09/29/1980	LOG
422701	783922	62-PAH72	NYDPW BSM	T		1962	1422.80	10.00		TILL	10	01/10/1962	SEE LOG PAH-71
422701	783922	62-PAH73	NYDPW BSM	T		1962	1422.52	25		TILL	23.8	01/11/1962	SEE LOG PAH-71
422702	783847	75-USGSV	USGS	O		1976	1385.90	145.00	S	LAKE			LOG,W/L 11/76-4/79
422656	783857	76-USGSJ2	USGS	O		1976	1375.80	18.60	S	TILL			LOG,W/L 8/76-4/79
422656	783857	76-USGSJ5	USGS	O		1976	1375.80	3.00	S	TILL			LOG,W/L 8/76-4/79
422702	783918	61-DH4	NYDPW BSM	T		1961	1413.39	50.00		TILL	13.58	11/08/1961	LOG
422703	783800	62-CT305	KOWALSKI	U	U		1540	169			125	04/28/1962	
422703	783912	62-CT285	SPITTLER	W	H	1961	1410	160	X		84.82	04/18/1962	
422703	783923	80-USGS2	USGS	O		1980	1427.22	14	S	SDGV			LOG
422704	783846	61-PAH5	NYDPW BSM	T		1961	1385.48	31.5		TILL	29.25	09/29/1961	LOG
422704	783846	61-DH7	NYDPW BSM	T		1961	1385.17	10.00		TILL			LOG
422705	783809	62-DH10	NYDPW BSM	T		1962	1471.85	12.00		TILL	10.25	05/10/1962	LOG
422705	783908	60-CT266	GENTNER	W	S		1400	16			4		

Table 2.--Records of wells (continued)

LOCATION		WELL NUMBER	OWNER	USE OF SITE	USE OF WATER	YEAR DRIL-LED	ALTI-TUDE (FT)	WELL DEPTH (FT)	WELL FIN-ISH	HYDRO-LOGIC UNIT	WATER LEVEL FT	WATER LEVEL DATE	REMARKS
Lat	Long												
422705	783908	60-CT267	GENTNER	W	H		1400	8.7			5.9	12/08/1960	
422707	783805	62-PAH83	NYDPW BSM	T		1962	1488.82	15		TILL			LOG
422708	783845	62-DH5	NYDPW BSM	T		1962	1374.65	50.00		TILL			LOG
422708	783849	61-PAH6	NYDPW BSM	T		1961	1377.44			TILL	10	10/02/1961	LOG
422708	783854	61-PAH16	NYDPW BSM	T		1961	1371.83	11.5		TILL	8	10/10/1961	LOG
422708	783854	62-PAH110	NYDPW BSM	T		1962	1371.94	11			11		SEE LOG PAH-16
422708	783854	62-PAH111	NYDPW BSM	T		1962	1371.75	11			11	04/19/1962	SEE LOG PAH-16
422708	783854	62-PAH112	NYDPW BSM	T		1962	1372.08	11			11	04/19/1962	SEE LOG PAH-16
422708	783955	62-CT287					1560	16.6			7.72	04/18/1962	
422710	783756	62-PAH82	NYDPW BSM	T		1962	1487.32	9		TILL			LOG
422711	783911	80-USGS4	USGS	O		1980	1381.32	10	S	SDGV			LOG
422711	783847	61-PAH9	NYDPW BSM	T		1961	1372.51	16.5		SDGV	14	10/05/1961	
422711	783847	61-PAH17	NYDPW BSM	T		1961	1372.85	33		SAND	4.1	10/16/1961	LOG
422709	783903	80-USGS6	USGS	O		1980	1370.88	14	S	SDGV			LOG
422712	783810	62-PAH81	NYDPW BSM	T		1962	1444.50	15		TILL			LOG
422712	783903	61-PAH38	NYDPW BSM	T		1961	1381.84	7		TILL	2.7	12/05/1961	SEE LOG PAH-37
422713	783852	61-PAH7	NYDPW BSM	T		1961	1379.10	31.5		SAND	30.5	10/05/1961	LOG
422713	783852	61-PAH8	NYDPW BSM	T		1961	1378.99	15		TILL	30.5	10/05/1961	SEE LOG PAH-7
422713	783852	62-PAH115	NYDPW BSM	T		1962	1379.17	30		TILL			SEE LOG PAH-114
422713	783852	62-PAH116	NYDPW BSM	T		1962	1379.09	30		TILL	27.42	04/24/1962	SEE LOG PAH-114
422713	783917	80-USGS3	USGS	O		1980	1380.81	6	S	SDGV			LOG
422716	783658	62-CT320	EDINGER	W	H		1560	37					
422716	783713	62-CT316	ZAKULSKI	W	H		1515	100					
422716	783855	61-PAH10	NYDPW BSM	T		1961	1375.68	16.5		TILL			LOG,W/L 10/76-4/79
422716	783855	62-PAH114	NYDPW BSM	T		1962	1376.51	31.5		TILL	18	04/24/1962	LOG
422718	783859	61-PAH-13	NYDPW BSM	T		1961	1368.75	21.5		TILL			LOG
422718	783935	61-PAH43	NYDPW BSM	T		1961	1407.25	6		TILL	6	12/12/1961	SEE LOG PAH-42
422718	784033	62-CT301	LUTHERAN	W	H		1580	12			6.14	04/27/1962	
422719	783854	61-PAH12	NYDPW BSM	T		1961	1356.36	16.5		SDGV	15	10/06/1961	LOG
422719	783858	62-DH8	NYDPW BSM	T		1962	1370.10	10.00		SDGV			LOG
422712	783914	80-USGS5	USGS	O		1980	1378.39	14.	S	SDGV			LOG
422720	783858	61-PAH11	NYDPW BSM	T		1961	1367.93	11.5		SDGV	11	10/06/1961	LOG
422721	784010	62-CT300	EMERSON	W	H	1947	1560	6.4			2.27	04/26/1962	
422722	783912	61-PAH41	NYDPW BSM	T		1961	1374.80	6		TILL	3	12/08/1962	SEE LOG PAH-40
422722	783946	61-PAH47	NYDPW BSM	T		1961	1444.61	15		TILL	15	12/18/1961	SEE LOG PAH-46
422723	783717	62-CT317	GREEN	W	H		1515	90					
422723	784023	62-CT289	COBO	W	H	1930	1555	40	X		4.9	04/20/1962	
422723	784033	62-CT288	COBO	W		1955	1555	70	X		30		
422725	783815	62-PAH101	NYDPW BSM	T		1962	1408.20	6		SAND	4	01/23/1962	SEE LOG PAH-100
422725	783922	61-PAH48	NYDPW BSM	T		1961	1368.34	7		TILL	7	12/18/1961	SEE LOG PAH-49

Table 2.--Records of wells (continued)

LOCATION		WELL NUMBER	OWNER	USE OF SITE	USE OF WATER	YEAR DRIL-LED	ALTI-TUDE (FT)	WELL DEPTH (FT)	WELL FIN-ISH	HYDRO-LOGIC UNIT	WATER LEVEL FT	WATER LEVEL DATE	REMARKS
Lat	Long												
422733	783930	62-PAH70	NYDPW BSM	T		1962	1368.03	10		TILL	10	01/09/1962	SEE LOG PAH-59
422734	784037	61-CT275		U	U		1525	40.8		SHBR	22.19	10/21/1961	BR AT 20 FT
422737	783952	62-CT308	BURNS				1460	10.8			3.03	04/30/1962	BR AT 15.3 FT
422738	783837	62-DH11	NYDPW BSM	T		1962	1360.85	100.00		TILL	18.00	05/09/1962	LOG
422739	784034	62-CT295	MILLER	U	U		1540	15.3		SHBR	2.2	04/21/1962	
422741	783952	62-PAH56	NYDPW BSM	T		1962	1411.04	34		TILL	34	01/04/1962	SEE LOG PAH-55
422741	783952	62-PAH57	NYDPW BSM	T		1962	1410.51	7		TILL	7	01/04/1962	SEE LOG PAH-55
422743	783954	62-CT304	PEARCE	U	U		1430	15.9			2.9	04/28/1962	
422743	784034	62-CT294	MILLER	U	U		1525	48.5	X	SHBR	7.62	04/21/1962	
422746	784033	62-CT293	MILLER	W	H	1961	1525	51.3	X	SHBR	17.08	04/21/1962	
422748	783810	62-CT315	NELSON	W	H		1450	130			25	01/01/1943	
422752	783857	62-PAH91	NYDPW BSM	T		1962	1337.50	10		TILL	10	01/18/1962	LOG
422801	783917	62-PAH93	NYDPW BSM	T		1962	1326	15		TILL			SEE LOG PAH-92
422802	783816	61-CT282	SMITH	W	H	1960	1460	73	X	SHBR	51.84	11/07/1961	BR AT 65 FT
422809	784040	62-CT290	KELLEY				1367	53.1	X	SHBR	12.43	04/20/1962	
422810	784036	62-CT291	FRENCH	U	U	1961	1370	54.4	X	SHBR	5.34	04/20/1962	BR AT 15 FT
422813	783917	62-PAH102	NYDPW BSM	T		1962	1326.50	30		TILL	19	01/23/1962	LOG
422813	783917	62-PAH103	NYDPW BSM	T		1962	1326.50	20		TILL	20	01/23/1962	SEE LOG PAH-102
422813	783946	62-PAH105	NYDPW BSM	T		1962	1247.50	6		SAND			SEE LOG PAH-104
422827	783811	62-CT314	CODD	U	U		1475	16.4			12.12	05/01/1962	
422838	784045	61-CT280	FELTON	O	U	1958	1280	12.36.	P		10.32	10/24/1961	
422847	783943	61-CT273	WATERSTRAM	W	S		1330	11		SDGV	10.79	10/21/1961	
422848	783845	61-CT276	EMERSON	W	S	1960	1360	130		SHBR	70	06/01/1960	
422849	783828	61-CT274	FALT				1410	16.2		SDGV	10.62	10/21/1961	
422851	783830	61-CT281	HANSEN	U	U		1410	61.7			9.77	10/24/1961	
422854	783803	61-CT279	THURBER	W	H	1942	1480	78		SHBR	30.67	10/23/1961	
422857	783720	61-CT277	NISITA	U	U		1465	83.1		SHBR	26.24	10/23/1961	
422900	783702	61-CT278	NISITA	U	U		1560	41.5		SHBR	10.54	10/23/1961	

Table 3.--Logs of wells and test borings

EXPLANATION OF COLUMN HEADINGS

Logs listed in this table are preceded by the site-identification number, date of completion, latitude, longitude, and source of the log. The logs are organized chronologically, as described in text.

SITE-IDENTIFICATION NUMBER: The number identifying each well or boring consists of two parts, as described in text.

ALTITUDE: Land-surface altitude above NGVD of 1929. For many wells and borings, altitude was determined by spirit leveling. For other wells and borings, altitude was estimated from most recent topographic map.

SOURCE OF LOG: All logs were obtained either from written or published records of a public agency or private firm or were prepared by the U.S. Geological Survey. Sources include records or reports of the following:

New York State Department of Public Works, Bureau of Soil Mechanics

Many of the wells and borings were drilled by or for the New York State Department of Public Works, Bureau of Soil Mechanics, as part of an initial site-feasibility investigation near the present WNYNSC facilities. Most logs were prepared by a soils engineer or technicians from visual inspection and sieve analysis of split-spoon drive samples collected at 5-foot intervals.

Dames and Moore, Inc.

Some borings were drilled for or by Dames and Moore as part of several site investigation studies by the firm during 1962-75. These borings include power-auger borings, rotary borings, and backhoe-dug test pits. Logs were prepared by geologists or engineers employeed by the firm based on visual inspection and sieve analyses of closely spaced or continuous drive samples.

Empire Soil Investigations, Inc.

Borings were made by Empire Soil Investigations (ESI), Inc. in 1975. Logs of these borings present the observations by the driller while at the site, supplemented by visual laboratory inspection by ESI technicians of core samples taken at selected sites.

Table 3.--Logs of wells and test borings (continued)

EXPLANATION OF COLUMN HEADINGS (continued)

U.S. Geological Survey

Many wells and borings were drilled for or by the U.S. Geological Survey during studies of the New York State-licensed burial ground (low-level radioactive waste burial trenches), the Nuclear Regulatory Commission licensed-burial ground, and an area near the main fuel reprocessing plant facilities within the Western New York Nuclear Service Center. Logs were prepared by a U.S. Geological Survey geologist by visual inspection of materials obtained from closely spaced or continuous drive samples.

Other logs were based on sample studies by a New York State Geological Survey or U.S. Geological Survey geologist of materials from test borings drilled for or by the New York State Department of Public Works or the U.S. Geological Survey.

TERMINOLOGY: The terminology used in each log is generally that used by the person or organization that presented it.

With respect to grain size, the most abundant grain size is listed first; less abundant sizes are prefixed as follows:

	Dames and Moore, Inc. and Empire Soils Investigations, Inc.	New York State Department of Public Works
Trace	10 percent or less	10 percent or less
Little	10 to 20 percent	--
Some	20 to 35 percent	10 to 40 percent
And	35 to 50 percent	40 to 50 percent

The color description in many logs refers to the predominant color of materials in a sample in its natural state. In many of the U.S. Geological Survey logs, however, color is described according to the Munsell Rock Color System.

Table 3.--Logs of Wells and Test Borings

61-PAH1 Augered September 25, 1961. Lat 42°26'37" Long 78°38'42". Altitude 1,395.61 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-12 ft	Moist yellow, brown, gray silt, trace of clay and fine stone (hard)
12-19	Wet gray silt, some clay (medium-plastic)
19-23	Wet gray coarse sand plus gravel stone, trace of silt (loose)

61-PAH2 Augered September 21, 1961. Lat 42°26'42" Long 78°38'40". Altitude 1,393.78 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10 ft	Moist yellow, brown (mottled) silt, trace of clay, stone and layered stone
10-15	Wet gray silt, some clay and shale stone (medium-plastic)
15-20	Wet gray silt, some layer sand (medium)
20-25	Wet gray silt, some clay, trace of shale stone (soft + plastic)
25-28	Wet gray sand, trace of silt (compact)

61-PAH3 Augered September 22, 1961. Lat 42°26'47" Long 78°38'39". Altitude 1,385.32 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-15 ft	Moist yellow, brown (mottled) silt, trace of clay, stone and sand (compact), 2-inch gravel layer at 10 ft with small amount water seepage.
15-20	Wet gray silt, trace to some clay (medium)
20-25	Moist gray silt, trace of shale and rounded gravel stone, trace of sand and clay (medium)
25-27	Wet gray sand, trace of silt (compact)

61-PAH4 Augered September 22, 1961. Lat 42°26'53" Long 78°38'42". Altitude 1,381.51 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Dry yellow, brown (mottled) silt, trace of clay and fine stone (hard)
8-22	Moist gray silt, some clay, trace of fine stone (medium and plastic) wet at 16 ft
22-27	Wet gray silt, trace of clay and layered fine sand (medium)

61-PAH5 Augered September 29, 1961. Lat 42°27'04" Long 78°38'46". Altitude 1,385.48 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-6 ft	Dry yellow, brown silt, trace of clay, trace of stone (medium)
6-10	Moist yellow, brown silt and fine sand, trace of clay (medium)
10-20	Moist gray silt, trace of clay and fine stone (medium)
20-25	Wet gray silt, some sand (medium-firm)
25-28	Wet gray silt, some clay, trace of fine stone (medium + plastic)
28-32	Wet gray silt, some fine sand, trace of silt (loose)

61-PAH6 Augered October 2, 1961. Lat 42°27'08" Long 78°38'49". Altitude 1,377.44 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-12 ft	Dry yellow, brown silt, trace to some rounded gravel stone and fine sand (medium) wet gray at 10 ft
12-16.5	Moist gray silt, trace of clay and fine stone (hard)

61-PAH7 Augered October 5, 1961. Lat 42°27'13" Long 78°38'52". Altitude 1,379.10 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-15 ft	Moist yellow, brown sand and rounded gravel stone, trace of silt (firm to compact), wet at 10 ft
15-21	Moist gray silt, trace of clay and fine stone (hard)
21-26	Moist gray silt, trace of sand and clay and fine stone (hard)
26-29	Wet gray silt, some clay, traces of fine sand (medium and plastic)
29-32	Wet gray sand, trace of silt (loose)

61-PAH8 Augered October 5, 1961. Lat 42°27'13" Long 78°38'52". Altitude 1,378.99 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-15 ft	No samples taken. Bottom of hole at 15 ft (See log of PAH 7)

61-PAH9 Augered October 5, 1961. Lat 42°27'11" Long 78°38'47". Altitude 1,372.51 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-16 ft	Moist yellow, brown sand, some gravel stone, trace of silt (firm to compact), wet at 6 ft
16-17	Wet gray silt, some clay and stone

61-PAH10 Augered October 6, 1961. Lat 42°27'16" Long 78°38'55". Altitude 1,375.68 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-14 ft	Brown to yellow sand, some gravel stone, trace of silt (loose to firm), moist at 6 ft
14-17	Moist gray silt, trace of stone, clay (medium)

61-PAH11 Augered October 6, 1961. Lat 42°27'20" Long 78°38'58". Altitude 1,367.93 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-12 ft	Moist brown sand, some gravel stone, trace of silt (medium, firm), moist yellow brown silt, trace of clay and stone (medium) at bottom of hole

61-PAH12 Augered October 6, 1961. Lat 42°27'19" Long 78°38'54". Altitude 1,356.36 ft. Log from

records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-17 ft	Moist brown, yellow sand, some gravel stone, trace of silt (loose), wet at 11 ft
17	Bottom of hole; wet gray silt, trace of gravel stone and clay (medium)

61-PAH13 Augered October 9, 1961. Lat 42°27'18" Long 78°38'59". Altitude 1,368.75 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-19 ft	Moist brown sand, some angular gravel stone and fractured rock, trace of silt (compact)
19-22	Moist gray silt, trace of fine stone and clay (hard)

61-PAH14 Augered October 9, 1961. Lat 42°27'27" Long 78°39'01". Altitude 1,340.56 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10 ft	Moist yellow brown silt, trace of clay and fine stone (medium)
20-26.5	Wet gray silt, some clay, trace of fine stone (soft and plastic)

61-PAH15 Augered October 10, 1961. Lat 42°27'27" Long 78°39'01". Altitude 1,340.24 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10 ft	No samples taken, bottom of hole 10 ft (See log of PAH 14)

61-PAH16 Augered October 10, 1961. Lat 42°27'08" Long 78°38'54". Altitude 1,371.83 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Wet brown sand, some fine gravel stone, trace of silt (firm)
8-12	Moist gray silt, trace of fine stone and clay

61-PAH17 Augered October 16, 1961. Lat 42°27'11" Long 78°38'47". Altitude 1,372.85 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	Moist yellow brown sand and gravel stone, trace of silt (loose to firm)
7-14	Wet yellow brown sand, some fine stone, trace of silt (compact)
14-30	Moist gray silt, some clay, trace of stone (medium and semi-plastic)
30-33	Wet gray coarse sand, trace of stone and silt (loose)

61-PAH18 Augered October 17, 1961. Lat 42°26'57" Long 78°38'39". Altitude 1,384.38 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-13 ft	Moist yellow brown (mottled) silt, trace of clay and fine stone (hard), gray at 11 ft
13-42	Wet gray silt, some clay, trace of fine stone (medium and plastic)

61-PAH19 Augered October 17-18, 1961. Lat 42°26'58" Long 78°38'50". Altitude 1,378.81 of Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-13 ft	Moist yellow brown silt, trace of clay and fine stone (hard)
13-20	Moist gray silt, some clay, trace of fine stone (medium and plastic)
20-25	Moist gray silt, some clay, trace of layered sand and fine stone (medium)
25-42	Moist to wet gray silt, some clay, trace of fine stone (medium and plastic)

61-PAH20 Augered October 18-19, 1961. Lat 42°27'33" Long 78°39'07". Altitude 1,349.11 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-4 ft	Moist yellow brown silt and sand (loose)
4-10	Brown angular stone, some sand, trace of silt (loose)
10-13	Gray silt, some clay (medium and plastic)
13-20	Gray silt, trace of clay and layered sand (medium)
20-23	Gray yellow sand and gravel, trace of silt (compact)
23-26.5	Gray silt, some clay, trace of fine stone (medium and plastic)

61-PAH21 Augered October 19, 1961. Lat 42°26'32" Long 78°38'57". Altitude 1,386.96 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-2 ft	Wet yellow brown silt, trace of clay
2-8	Wet gray silt, some sand and gravel (medium)
8-29	Wet gray silt, some clay, trace of stone (medium and plastic)
29-31.5	Wet gray sand, trace of silt (loose)

61-PAH22 Augered October 20, 1961. Lat 42°26'32" Long 78°38'57". Altitude 1,387.21 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10 ft	No samples taken; bottom of hole 10 ft (See log of PAH 21)

61-PAH23 Augered October 20, 1961. Lat 42°28'31" Long 78°39'09". Altitude 1,425.01 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-2 ft	Wet brown silt, some sand and gravel stone (loose)
2-11	Wet brown silt, trace of clay, sand and stone (medium)
11-20	Wet gray brown silt, some layered sand and angular stone (medium, becoming hard)

61-PAH24 Augered October 31, 1961. Lat 42°26'31" Long 78°39'09". Altitude 1,424.34 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10 ft	No samples taken; bottom of hole 10 ft (See log of PAH 23)

61-PAH25 Augered October 31, 1961. Lat 42°26'30" Long 78°38'57". Altitude 1,402.25 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	Moist yellow silt and sand, trace of stone (medium)
7-18	Moist gray silt, some stone and sand, trace of clay (medium to hard)
18-41.5	Wet gray silt, some clay, trace of fine stone and sand (medium)

61-PAH26 Augered November 1, 1961. Lat 42°26'32" Long 78°38'43". Altitude 1,396.94 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Moist yellow, gray, brown silt, trace of clay, fine stone and very fine sand (medium)
8-11	Moist gray silt, trace of clay (medium)
11-15	Wet gray silt, some fine layered sand (medium)
15-46.5	Wet gray silt, some clay (medium and plastic)

61-PAH27 Augered November 2, 1961. Lat 42°26'32" Long 78°38'43". Altitude 1,386.87 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-15 ft	No samples taken; bottom of hole 15 ft. (See log of PAH26)

61-PAH28 Augered November 2, 1961. Lat 42°26'28" Long 78°38'22". Altitude 1,397.54 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Moist brown silt, some sand and gravel stone (medium)
8-14	Wet gray silt, trace to some clay and stone (medium)
14-26.5	Wet gray silt, some clay, trace of fine stone (medium and plastic)

61-PAH29 Augered November 6-8, 1961. Lat 42°26'45" Long 78°39'01". Altitude 1,385.39 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Brown silt, trace of gravel
5-36.5	Moist gray brown silt, trace of clay and fine stone (medium to hard), dry gray at 10 ft, moist at 15 ft, moist to wet (medium and plastic) at 20 ft, dry at 35 ft

61-PAH30 Augered November 8, 1961. Lat 42°26'49" Long 78°38'51". Altitude 1,383.43 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-11	Moist yellow brown silt, trace of clay and stone (medium to hard)
11-36.5	Moist gray silt, trace to some clay and fine stone (medium and plastic)

61-PAH31 Augered November 9, 1961. Lat 42°26'42" Long 78°39'11". Altitude 1,399.67 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-15 ft	No samples taken; bottom of hole 15 ft (See log of PAH30)

61-PAH32 Augered November 27-28, 1961. Lat 42°26'48" Long 78°39'07". Altitude 1,398.68 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-0.5 ft	Topsoil
0.5-8	Moist yellow brown silt, trace of clay and fine stone (medium)
8-31.5	Moist gray silt, trace of clay and fine stone (medium and plastic), moist to wet at 15 ft

61-PAH33 Augered November 27, 1961. Lat 42°26'48", Long 78°39'07". Altitude 1,396.46 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-25 ft	No samples taken; bottom of hole 25 ft (See log of PAH32)

61-PAH34 Augered November 28-29, 1961. Lat 42°26'58", Long 78°38'58". Altitude 1,372.13 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-0.5 ft	Topsoil
0.5-13	Dry yellow brown silt, trace of clay, fine stone and fine sand (medium), moist brown gray at 10 ft
13-31.5	Moist gray silt, trace of clay and fine stone (medium and plastic), wet at 25 ft (soft and plastic)

61-PAH35 Augered November 28-29, 1961. Lat 42°26'59", Long 78°39'11". Altitude 1,395.97 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-11 ft	Wet yellow brown fine gravel stone, some coarse sand and silt (compact)
11-33.5	Wet gray silt, trace to some clay and stone (medium and plastic)

61-PAH36 Augered December 4, 1961. Lat 42°26"59', Long 78°39'11". Altitude 1,395.82 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-6	No samples taken; bottom of hole 6 ft (See log of PAH 35)

61-PAH37 Augered December 4, 1961. Lat 42°27'07", Long 78°39'05". Altitude 1,382.07 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Moist brown silt, trace of fine stone, clay and sand (medium to hard)
8-31.5	Moist gray silt (some clay, trace of fine stone (hard, becoming soft and plastic at 15 ft), wet at 20 ft

61-PAH38 Augered December 5, 1961. Lat 42°27'07", Long 78°39'05". Altitude 1,381.84 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	No samples taken; bottom of hole 7 ft (See log of PAH37)

61-PAH39 Augered December 6, 1961. Lat 42°27'12", Long 78°39'24". Altitude 1,398.15 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-15 ft	Moist brown gray silt, trace to some stone and clay (medium), gray at 5 ft
15-31.5	Gray silt, some clay and stone (medium and plastic)

61-PAH40 Augered December 8, 1961. Lat 42°27'25", Long 78°39'12". Altitude 1,375.29 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	Moist brown yellow silt, some fine stone, trace of clay and sand (medium)
7-21.5	Moist gray silt, some clay, trace to some stone (hard), wet at 15 ft (becoming medium and plastic)

61-PAH41 Augered December 8, 1961. Lat 42°27'25", Long 78°39'12". Altitude 1,374.80 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-6 ft	No samples taken; bottom of hole 6 ft (See log of PAH40)

61-PAH42 Augered December 11, 1961. Lat 42°27'18", Long 78°39'35". Altitude 1,407.08 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	Brown yellow gray silt, trace of layered fine sand and clay (medium)
7-31.5	Gray silt, some clay, trace of fine stone (medium and plastic)

61-PAH43 Augered December 12, 1961. Lat 42°27'18", Long 78°39'35". Altitude 1,407.25 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-6 ft	No samples taken; bottom of hole 6 ft (See log of PAH42)

61-PAH44 Augered December 12, 1961. Lat 42°27'23", Long 78°39'30". Altitude 1,382.57 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10 ft	Yellow brown gray sand, some stone and silt (loose)
10-31.5	Gray silt, trace to some clay (medium and plastic)

61-PAH45 Augered December 12, 1961. Lat 42°27'23", Long 78°39'30". Altitude 1,382.89 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	No samples taken; bottom of hole 7 ft (See log of PAH44)

61-PAH46 Augered December 15, 1961. Lat 42°27'22", Long 78°39'46". Altitude 1,443.81 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Moist, yellow brown (mottled) silt, trace of sand, stone and clay (medium)
8-14	Wet yellow brown silt, some sand and stone, trace of clay (medium)
14-26.5	Wet brown gray silt, trace to some clay and stone (medium to firm)

61-PAH47 Augered December 18, 1961. Lat 42°27'22", Long 78°39'46". Altitude 1,444.61 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-15 ft	No samples taken; bottom of hole 15 ft (See log of PAH46)

61-PAH48 Augered December 18, 1961. Lat 42°27'25", Long 78°39'22". Altitude 1,368.34 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-6 ft	No samples taken; bottom of hole 7 ft (See log of PAH49)

61-PAH49 Augered December 19, 1961. Lat 42°27'25", Long 78°39'22". Altitude 1,368.79 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	Moist, yellow brown gray silt, trace of clay and fine stone (medium)
7-26.5	Wet gray silt, some clay trace of fine stone (soft and plastic, medium and plastic at 20 ft)

61-PAH50 Augered December 19, 1961. Lat 42°26'16", Long 78°39'07". Altitude 1,462.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-12 ft	Silt, some sand and gravel
12-21	Brown silt, some sand, trace of clay
21-33	Coarse angular shaley sandstone fragments
below 33	Possible shale bedrock

Table 3.--Logs of Wells and Test Borings (continued)

61-PAH51 Augered December 19, 1961. Lat 42°26'43", Long 78°39'49". Altitude 1,608.66 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-6 ft	Brown silt, some .25 in. to .5 in pebbles, trace of clay
6-14	Gray silt, some clay and shale fragments
below 14	Shale bedrock

61-PAH52 Augered December 20, 1961. Lat 42°25'57", Long 78°39'20". Altitude 1,631.64 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-6 ft	Brown silt, some fine stone
6-12	Brown silt, some clay and stone
12-23	Brown silt and angular shale fragments
below 23	Probable shale bedrock

61-PAH53 Augered December 21, 1961. Lat 42°27'33", Long 78°39'46". Altitude 1,422.90 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Moist brown silt, trace of fine sand, clay and fine stone (medium)
8-15	Moist gray brown silt, trace to some layered sand and stone, trace of clay (hard)
15-25	Moist gray silt, trace of clay and fine stone (hard to medium)
25-31.5	Wet gray silt, trace to some sand and fine stone, trace of clay (medium)

61-PAH54 Augered December 21, 1961. Lat 42°27'33", Long 78°39'46". Altitude 1,427.41 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	No samples taken; bottom of hole 7 ft (See log of PAH53)

61-PAH55 Augered December 21, 1961. Lat 42°27'41", Long 78°39'52". Altitude 1,410.94 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	Moist yellow brown silt, trace of fine stone, sand and clay (medium)
7-17	Moist gray silt, trace to some fine stone, trace of clay and sand (medium), wet at 16 ft
17-31.5	Moist gray silt, some clay, trace of fine stone (medium), wet at 18 ft (medium and plastic)

62-PAH56 Augered January 4, 1962. Lat 42°27'41", Long 78°39'52". Altitude 1,411.04 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-34 ft	No samples taken; bottom of hole 34 ft (See log of PAH55)

62-PAH57 Augered January 4, 1962. Lat 42°27'41", Long 78°39'52". Altitude 1,410.51 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	No samples taken; bottom of hole 7 ft (See log of PAH55)

62-PAH58 Augered January 5, 1962. Lat 42°27'41", Long 78°39'41". Altitude 1,375.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Brown silt, trace of clay and stone (medium)
8-23	Gray silt, trace to some clay and stone (medium and plastic)
23-27	Gray silt, trace of clay, layered sand and stone (medium)
27-36.5	Gray silt, trace of clay and stone (medium)

62-PAH59 Augered January 8, 1962. Lat 42°27'33", Long 79°39'30". Altitude 1,368.59 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Brown silt, trace of clay and stone (medium)
8-23	Gray silt, trace to some clay and stone (medium and plastic)
23-28	Gray silt, trace to some layered sand and clay (medium)
28-41.5	Gray silt, some clay, trace of stone (medium and plastic)

62-PAH60 Augered January 2, 1962. Lat 42°26'36", Long 78°37'52". Altitude 1,394.82 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	Brown silt, trace of clay
7-30	Gray silt, trace to some clay
30-40	Gray silt, trace of clay and stone (hard)

62-PAH61 Augered January 2, 1962. Lat 42°26'33", Long 78°39'05". Altitude 1,407.17 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	Brown silt, some stone and sand
7-11	Brown silt, trace of sand
11-17	Gray silt, some to trace of clay, trace of angular gravel
17-20	Brown sand and gravel

62-PAH62 Augered January 3, 1962. Lat 42°20'41", Long 78°38'02". Altitude 1,394.73 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	Brown silt, some fine stone, trace of clay
7-40	Gray silt, some clay (soft, plastic)

62-PAH63 Augered January 3, 1962. Lat 42°26'27", Long 78°37'58". Altitude 1,402.38 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	Brown silt, trace to some sand and stone
7-40	Silt, some clay

62-PAH64 Augered January 3, 1962. Lat 42°26'27", Long 78°37'58". Altitude 1,407.13 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-6 ft	No samples taken; bottom of hole 6 ft (See log of PAH63)

62-PAH65 Augered January 4, 1962. Lat 42°26'40", Long 78°37'43". Altitude 1,433.10 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Brown silt, trace of clay and stone
5-16	Gray silt, some clay (soft and plastic)
16-21	Gray silt and angular shale fragments
21	Possible shale bedrock

62-PAH66 Augered January 4, 1962. Lat 42°26'50", Long 78°38'16". Altitude 1,388.74 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Moist brown silt, trace of clay
5-10	Wet gray silt and very fine sand
10-30	Wet gray silt, trace of very fine sand and clay
30-40	Wet gray silt, some clay (soft and plastic)

62-PAH67 Augered January 4, 1962. Lat 42°26'50", Long 78°38'16". Altitude 1,388.67 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Brown silt
5-7	Silt and very fine sand
7-9	Sand

62-PAH68 Augered January 5, 1962. Lat 42°26'41", Long 78°38'46". Altitude 1,395.40 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10 ft	Moist brown silt, trace of clay
10-45	Moist gray silt, some clay, trace of stone (medium and plastic)

62-PAH69 Augered January 5-9, 1962. Lat 42°26'29", Long 78°39'17". Altitude 1,472.23 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10	Moist brown silt, trace of clay
10-17	Dry brown silt, trace to some weathered shale
below 17	Probable shale bedrock

62-PAH70 Augered January 9, 1962. Lat 42°27'33", Long 78°39'30". Altitude 1,368.03 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10	No samples taken; bottom of hole 10 ft (See log of PAH59)

62-PAH71 Augered January 10-11, 1962. Lat 42°27'01", Long 78°39'22". Altitude 1,422.52 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-17 ft	Brown silt, some stone and sand (hard)
17-23	Gray silt, trace of clay and stone (medium and plastic)
23-28	Gray sand and silt
28-36.5	Gray silt, trace to some clay, trace of stone and very fine sand (medium and plastic)

62-PAH72 Augered January 10,,1962. Lat 42°27'01", Long 78°39'22". Altitude 1,422.80 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10 ft	No samples taken; bottom of hole 10 ft (See log of PAH71)

62-PAH73 Augered January 11, 1962. Lat 42°27'01", Long 78°39'22". Altitude 1,422.80 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-25 ft	No samples taken; bottom of hole 25 ft (See log of PAH71)

62-PAH74 Augered January 12, 1962. Lat 42°26'51", Long 78°39'22". Altitude 1,446.59 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Yellow brown silt, trace of sand and stone (hard)
8-17	Gray brown silt, trace to some weathered shale (very hard)
17-21	Brown silt, trace to some weathered shale and clay (very hard)
below 21	Probable shale bedrock

62-PAH75 Augered January 16, 1962. Lat 42°26"54', Long 78°38'00". Altitude 1,424.95 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-12 ft	No samples taken; bottom of hole 12 ft (See log of PAH95)

62-PAH76 Augered January 10, 1962. Lat 42°26'17", Long 78°39'56". Altitude 1,823.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Brown silt, trace of clay and stone
5-9	Gray brown silt, trace of shale fragments (angular) and clay
below 9	Probable shale bedrock

Table 3.--Logs of Wells and Test Borings (continued)

62-PAH77 Augered January 10, 1962. Lat 42°26'26", Long 78°40'03". Altitude 1,760.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Brown silt, trace of very fine sand and fine stone
5-15	Gray brown silt, some angular shale fragments
below 15	Probable shale bedrock

62-PAH78 Augered January 11, 1962. Lat 42°26'58", Long 78°39'54". Altitude 1,565.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	Brown silt, trace of clay and fine shale stone
7-15	Gray silt, some angular shale fragments
below 15	Probable shale bedrock

62-PAH79 Augered January 11, 1962. Lat 42°27'00", Long 78°37'53". Altitude 1,555.50 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10 ft	Brown silt, trace of clay and fine shale stone
10-16	Gray silt, trace of clay and angular shale fragments
below 16	Possible shale bedrock

62-PAH80 Augered January 11, 1962. Lat 42°26'58", Long 78°37'34". Altitude 1,560.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10 ft	Brown silt, trace of clay and very fine sand
10-13	Brown gray shale stone and silt
below 13	Possible shale bedrock

62-PAH81 Augered January 12, 1962. Lat 42°27'12", Long 78°38'10". Altitude 1,444.50 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-4 ft	Brown silt, trace of small angular stone
4-8	Brown gray silt, some angular stone
8-15	Gray silt, some angular stone and shale

62-PAH82 Augered January 12, 1962. Lat 42°27'10", Long 78°37'56". Altitude 1,487.32 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	Brown silt, trace of fine sand and fine angular stone
7-9	Silt and shale

62-PAH83 Augered January 12, 1962. Lat 42°27'07", Long 78°38'07". Altitude 1,488.82 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10	Brown silt, trace of very fine sand and fine angular stone
10-15	Gray silt, some flat angular stone

62-PAH84 Augered January 12, 1962. Lat 42°26'47", Long 78°38'56". Altitude 1,381.02 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Brown silt, trace of clay
5-15	Gray silt, trace of clay and fine angular stone
15-45	Gray silt, some clay (soft and plastic)

62-PAH85 Augered January 16, 1962. Lat 42°26'39", Long 78°39'17". Altitude 1,446.25 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Brown silt, trace of clay
8-12	Brown gray silt, trace of angular stone

62-PAH86 Augered January 16, 1961. Lat 42°26'53", Long 78°37'39". Altitude 1,447.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Brown silt, trace of very fine sand and stone
5-8	Silt and shale stone

62-PAH87 Augered January 16, 1962. Lat 42°27'36", Long 78°38'34". Altitude 1,363.70 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Brown silt, trace of clay (soft and plastic)
8-45	Gray silt, some clay, trace of small flat stones (soft and plastic)

62-PAH88 Augered January 16, 1961. Lat 42°27'43", Long 78°38'51". Altitude 1,337.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Brown silt, trace of clay
5-12	Brown silt and sand, trace of clay and gravel stone
12-40	Gray silt, trace to some clay and sand, trace of stone (soft)

62-PAH89 Augered January 17, 1962. Lat 42°27'43", Long 78°38'51". Altitude 1,337.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Wet brown silt, trace of clay
5-10	Wet brown silt and sand, trace of clay and gravel stone

62-PAH90 Augered January 18, 1962. Lat 42°27'52", Long 78°38'57". Altitude 1,337.50 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-4 ft	Brown silt
4-7	Brown silt, trace to some sand and gravel stone
7-13	Brown silt, some very fine sand, trace of clay
13-24	Gray sand, trace of silt and clay
24-40	Gray silt, trace of sand, stone and clay (soft and plastic)

Table 3.--Logs of Wells and Test Borings (continued)

62-PAH91 Augered January 18, 1962. Lat 42°27'52", Long 78°38'57". Altitude 1,337.50 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-4 ft	Brown silt
4-7	Wet brown silt, trace to some sand and gravel stone
7-9	Wet brown silt, some very fine sand, trace of clay
9-10	Wet gray silt and clay

62-PAH92 Augered January 19, 1962. Lat 42°28'01", Long 78°39'17". Altitude 1,326.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-6 ft	Brown silt, trace of sand and stone
6-8	Brown sand, some silt
8-13	Yellow brown fine sand and silt
13-20	Brown silt, some sand
20-25	Brown gray silt, some clay, trace of sand
25-40	Gray silt, some clay

62-PAH93 Augered January 19, 1962. Lat 42°28'01", Long 78°39'17". Altitude 1,326.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-15 ft	No samples taken; bottom of hole 15 ft (See log of PAH92)

62-PAH94 Augered January 23, 1962. Lat 42°28'13", Long 78°39'19". Altitude 1,326.50 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-14 ft	Brown silt, trace of clay and stone
14-16	Yellow brown silt and fine sand
16-19	Brown silt, trace to some gravel stone and sand
19-26	Brown silt, trace of clay and stone
26-35	Brown silt, some fine sand, trace of clay
35-40	Gray silt, some clay

62-PAH95 Augered January 16, 1962. Lat 42°26'54', Long 78°38'00". Altitude 1,425.29 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-1 ft	Topsoil
1-2	Silt, trace of sand and stone
2-5	Moist yellow brown silt, some sand and gravel stone
5-15	Gray yellow (mottled) silt, trace of clay and shale stone (medium)
15-18	Gray silt and weathered shale (very hard)

62-PAH96 Augered January 12, 1962. Lat 42°27'27", Long 78°38'23". Altitude 1,389.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Brown silt, some sand and gravel stone
5-10	Gray brown silt, trace of clay and stone (medium)
10-14	Gray silt, trace of very fine sand and clay (medium)
14-27	Gray silt, trace to some layered sand, trace of clay (medium)
27-31.5	Gray silt, some clay (soft and plastic)

62-PAH97 Augered January 17, 1962. Lat 42°27'27", Long 78°38'23". Altitude 1,389.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-18 ft	No samples taken; bottom of hole 18 ft (See log of PAH96)

62-PAH98 Augered January 12, 1962. Lat 42°27'27", Long 78°38'23". Altitude 1,389.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	No samples taken; bottom of hole (See log of PAH96)

62-PAH99 Augered January 18, 1962. Lat 42°27'38", Long 78°38'08". Altitude 1,453.50 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Brown silt, trace of sand and gravel stone
5-23	Brown silt, trace of flat stone, fractured rock and sand (hard)
23-34	Brown silt and sand (medium)

62-PAH100 Augered January 23, 1962. Lat 42°27'25", Long 78°38'15". Altitude 1,408.20 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Brown yellow sand, some silt, trace of clay and stone (loose)
8-19	Gray silt, some clay, trace of flat stone (medium and plastic)
19-31.5	Gray silt, some coarse sand and stone, trace to some clay (very hard, becoming medium)

62-PAH101 Augered January 23, 1962. Lat 42°27'25", Long 78°38'15". Altitude 1,408.20 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-6 ft	No samples taken, bottom of hole 6 ft (See log of PAH100)

62-PAH102 Augered January 23, 1962. Lat 42°28'13", long 78°39'17". Altitude 1,326.50 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-14 ft	Brown silt, trace of clay and stone
14-16	Yellow brown silt and fine sand
16-19	Brown silt, trace to some gravel stone and sand
19-26	Brown silt, trace of clay and stone
26-30	Brown silt, some fine sand, trace clay

Table 3.--Logs of Wells and Test Borings (continued)

62-PAH103 Augered January 23, 1962. Lat 42°28'13", Long 78°39'17". Altitude 1,326.50 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-20 ft	No samples taken; bottom of hole 20 ft (See log of PAH -94)

62-PAH104 Augered January 23, 1962. Lat 42°28'13", Long 78°39'46". Altitude 1,247.50 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-2 ft	Brown sand, some silt
2-7	Brown sand, trace of silt and fine stone
7-10	Brown silt, some clay
10-40	Gray silt, some clay

62-PAH105 Augered January 23, 1962. Lat 42°28'13", Long 78°39'46". Altitude 1,247.50 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-6 ft	No samples taken; bottom of hole 6 ft (See log of PAH104)

62-PAH106 Augered January 24, 1962. Lat 42°26'05", Long 78°38'26". Altitude 1,430.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-9 ft	Brown silt, trace of clay and stone
9-12	Gray silt, trace of clay and flat stone
12-16	Gray silt, some clay, trace of flat stone

62-PAH107 Augered January 25, 1962. Lat 42°25'50", Long 78°37'58". Altitude 1,428.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-7 ft	Brown silt, some sand and gravel stone
7-12	Gray silt, trace of clay
12-17	Brown silt, some fine stone, trace of clay
17-18	Brown fine sand
18-27	Brown fine sand, some silt, trace of clay
27-40	Gray silt, some sand and clay

62-PAH108 Augered January 25, 1962. Lat 42°25'50", Long 78°37'58". Altitude 1,428.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-18 ft	No samples taken; bottom of hole 18 ft (See log of PAH107)

62-PAH109 Augered April 19, 1962. Lat 42°28'42", Long 78°40'08". Altitude 1,302.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-1 ft	Topsoil
1-14	Moist gray sand and gravel stone (compact)
14-18	Moist gray silt, trace of clay and stone (medium)

62-PAH110 Augered April 19, 1962. Lat 42°27'08", Long 78°38'54". Altitude 1,371.94 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-11 ft	No samples taken; bottom of hole 11 ft (See log of PAH16)

62-PAH111 Augered April 19, 1962. Lat 42°27'08", Long 78°38'54". Altitude 1,371.75 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-11 ft	No samples taken; bottom of hole 11 ft (See log of PAH16)

62-PAH112 Augered April 19, 1962. Lat 42°27'08", Long 78°38'54". Altitude 1,372.08 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-11 ft	No samples taken; bottom of hole 11 ft (See log of PAH16)

62-PAH113 Augered April 20-23, 1962. Lat 42°27'29" Long, 78°38'57". Altitude 1,367.57 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-12 ft	Brown sand, some gravel stone, trace of silt (firm)
12-30	Gray silt, some clay, trace of stone (medium and plastic)
30-36.5	Gray silt, some clay, trace to some sand (medium)

62-PAH114 Augered April 23,-24, 1962. Lat 42°27'16" Long 78°38'55". Altitude 1,376.51 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-15 ft	Brown sand, some angular gravel stone, trace of silt (firm)
15-31.5	Gray silt, some clay, trace of fine stone (medium and plastic)

62-PAH115 Augered April 23-24, 1962. Lat 42°27'13", Long 78°38'52". Altitude 1,379.17 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-30 ft	No samples taken; depth of hole 30 ft (See log of PAH7)

62-PAH116 Augered April 24, 1962. Lat 42°27'13", Long 78°38'52". Altitude 1,379.09 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-30 ft	No samples taken; bottom of hole 30 ft (See log of PAH7)

62-PAH117 Augered April 25-26, 1962. Lat 42°26'57", Long 78°38'44". Altitude 1,383.19 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

Table 3.--Logs of Wells and Test Borings (continued)

0-13 ft	Brown silt, trace of clay (medium), gray at 11 ft
13-30	Gray silt, some clay (medium and plastic)
30-37	Gray silt, some clay, trace of layered sand (medium and plastic)
37-41.5	Gray silt, some clay (medium and plastic)

62-PAH118 Augered April 26, 1962. Lat 42°26'47", Long 78°38'39". Altitude 1,387.28 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Brown silt, trace of clay
5-27	Moist gray silt, some clay, trace of fine stone (medium and plastic)

62-PAH119 Augered April 26, 1962. Lat 42°26'47", Long 78°38'39". Altitude 1,387.29 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	Moist brown silt, trace of clay
5-31	Gray silt, some clay, trace of fine stone

62-PAH120 Augered April 27, 1962. Lat 42°26'47", Long 78°38'39". Altitude 1,393.13 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-30 ft	No samples taken; bottom of hole 30 ft (See log of PAH3)

62-PAH121 Augered April 27, 1962. Lat 42°26'37", Long 78°38'42". Altitude 1,395.06 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-22 ft	Gray sand, some silt, trace of clay and stone (compact)

62-PAH122 Augered April 27, 1962. Lat 42°26'37", Long 78°38'42". Altitude 1,396.24 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-22 ft	Sand and silt, trace of clay and gravel stone (compact)

62-PAH123 Augered April 30, 1962. Lat 42°27'07", Long 78°39'12". Altitude 1,393.07 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-23 ft	Wet brown sand, some angular stone, trace of silt (compact, becoming very compact as depth increases)
23-41.5	Gray silt, some clay, trace to some fine stone (hard to medium and plastic)

62-PAH124 Augered May 1, 1962. Lat 42°28'44", Long 78°39'23". Altitude 1,360.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-36.5	Brown sand, trace to some fine gravel stone and silt (loose, becoming more compact as depth increases)

62-PAH125 Augered May 1, 1962. Lat 42°28'44", Long 78°38'46". Altitude 1,365.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-20 ft	Sand, trace of fine gravel stone and silt (loose)
20-27	Fine sand, trace of silt (loose)
27-36.5	Silt, trace of clay and fine sand (soft and plastic)

62-PAH126 Augered May 2, 1962. Lat 42°26'10", Long 78°37'36". Altitude 1,400.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-17 ft	Brown sand and gravel stone, trace of silt (compact)
17-21.5	Gray silt, some clay, trace of gravel stone (medium and plastic)

62-PAH127 Augered May 2, 1962. Lat 42°26'12", Long 78°37'23". Altitude 1,410.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-15 ft	Gray brown silt, some clay (medium and plastic), gray at 10 ft
15-23	Brown sand, trace of stone and silt (very compact)
23-26.5	Gray silt, some clay (medium and plastic)

62-PAH128 Augered May 2, 1962. Lat 42°26'18", Long 78°37'10". Altitude 1,440.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-3 ft	Yellow gray brown silt, some sand, trace of clay
3-7	Wet brown sand, some gravel stone, trace of silt (firm)
7-15	Wet gray silt, some clay, trace of layered, very fine sand (medium and plastic)
15-19	Wet gray brown layered sand, trace of silt and clay
19-21.5	Brown sand and fractured stone, trace of silt and organic matter

62-DH1 Drilled January 31, 1962. Lat 42°26'09", Long 78°38'44". Altitude 1,520.00 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-3 ft	Muck first foot, brown silt, trace of clay and stone
3-8	Moist brown to gray to mottled yellow silt, trace of clay, fine sand, layered shale (very hard)
8-10.5	Moist gray silt, some layered shale, trace of clay and sand. Overlying probable shale bedrock

Table 3.--Logs of Wells and Test Borings (continued)

62-DH2 Drilled March 3-April 4, 1962. Lat 42°26'26", Long 78°38'58". Altitude 1,417.56 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-9 ft	Brown silt, somme flat stone, trace of sand and clay (hard)
9-34	Brown sand, some stone and silt, trace of clay (compact)
34-37	Brown fractured rock, some sand and silt (very hard)
37-41	Brown silt, some sand and fine stone, trace of clay (hard)
41-68	Gray silt, some clay, trace of fine stone (medium and plastic)
68-74	Gray silt, trace to some clay, fine stone and sand (medium and plastic)
74-78	Gray silt, some clay, trace of rounded gravel stone (medium)
78-88	Gray silt, some clay, fine stone, coarse sand (hard to medium)
88-94	Gray silt, trace of very fine sand (hard)
94-98	Gray fine stone, some silt, trace of clay and sand (compact)
98-103	Gray silt, some clay, trace of stone (medium and plastic)
103-109	Gray silt, some clay and fine stone, trace of coarse sand (medium and plastic)
109-114	Gray fine stone, some silt and shale rock (hard)
114-117	Flat angular stone
117-120	Gray silt, trace of clay, sand, and fine stone
120-125	Gray to mottled yellow silt, some fine stone and sand, trace of clay (very hard)
125-130.75	Angular stone (very hard)
130.75-133	Layered silt and shale (very hard). Overlies broken shale bedrock with thin interbedded limestone strata.

61-DH3 Drilled September 9-October 10, 1961. Lat 42°26'42", Long 78°39'11". Altitude 1,398.40 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-13 ft	Moist, yellow brown angular stone, some sand and silt, becoming gray and wet (compact)
13-28	Dry, gray silt, trace of clay and stone, becoming moist (hard)
28-46	Wet, gray, fine stone, some silt, trace of clay, coarse sand (compact)
46-53	Wet, gray silt, trace of fine stone, clay and sand (medium)
53-56.5	Wet, gray fine stone, trace to some silt, clay, and coarse sand (compact)
56.5-62	Wet, gray sand, some silt, trace to fine stone (firm)
62-64.83	Stone and fractured rock, some silt, trace of clay (compact). Overlies seamed and broken shale bedrock with thin interbedded limestone strata

61-DH4 Drilled October 11-November 8, 1961. Lat 42°27'02", Long 78°39'18". Altitude 1,413.39 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-2 ft	Moist, reddish-brown silt, trace to some flat stone (loose)
2-15	Moist, brown silt, trace to some coarse sand and stone, trace of clay (medium)
15-17	Moist, reddish-brown silt, some layered fine sand (medium)
17-38	Moist, brown silt, some sand and stone, trace of fractured rock and clay (hard)
38-60	Wet, gray silt, some clay, trace of fine stone (medium to hard)
60-62	Gravel and fractured rock (very hard)
62-67	Wet, gray sand, some fine flat stone and silt (very compact)
77-105	Dry, gray silt, trace to some stone and sand, becoming wet (very hard)
105-111.58	Wet, gray silt, some sand and clay, trace of fractured shale rock (very hard). Overlies seamed and broken shale bedrock

61-DH6 Drilled September 7-October 3, 1961. Lat 42°26'37", Long 78°38'46". Altitude 1,387.90 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10 ft	Dug first foot. Moist, mottled yellow-brown silt, trace of clay and fine stone (medium)
10-21	Moist to wet, gray silt, some clay, trace of fine stone and layered fine sand (medium and plastic)
21-22	Wet, gray sand layer
22-74	Wet, gray silt, some clay, trace of fine stone (medium and plastic)
74-85	Dry, mottled brown-yellow sand and silt, some stone (compact)
85-95	Wet, gray silt, some clay, trace of stone and fine sand
95-105	Wet, gray silt, some clay, trace of fine stone (medium and plastic)
105-110	Moist, gray silt, trace of clay and fine sand (medium)
110-120	Moist, gray silt, some clay, trace of layered sand (hard)

62-DH5 Drilled November 11-February 2, 1962. Lat 42°27'08", Long 78°38'45". Altitude 1,374.65 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10 ft	Yellow-brown silt, trace of clay (hard) First 0.58 ft topsoil
10-17	Gray silt, some stone, trace to some clay (hard)
17-27	Gray, coarse sand and stone, some silt, trace of clay (compact)
27-140	Gray silt, some clay and fine stone (hard)
140-160	Gray silt, trace of clay and fine stone (hard)
160-163.5	Gray silt, trace to some sand, trace of weathered shale and stone (very hard)
163.5-165	Silt and weathered shale
165-172	Gray silt, trace of clay (hard)
172-181	Gray silt, trace of sand, clay, and stone (hard). Overlies shale bedrock containing thin limestone layers

Table 3.--Logs of Wells and Test Borings (continued)

120-125	Wet, gray silt, some clay, trace of fine stone (hard)
125-130	Wet, gray sand and gravel stone (compact)
130-135	Wet, gray silt, some clay, trace of fine stone (hard)
135-140	Wet, gray gravel stone, some sand, trace of silt and clay (compact)
140-150	Wet, gray silt, some clay, trace of fine stone (hard)
150-176	Moist, gray silt, trace of clay (hard)
176-191.5	Moist, gray sand, trace of silt and clay (compact)
191.5-200	Wet, gray silt, trace of clay (hard)
200-240.42	Gray silt, trace of clay and fine sand (very hard, becoming harder with depth). Hole ends in this unit.

61-DH7 Drilled November 1-December 4, 1961. Lat 42°27'04", Long 78°38'46". Altitude 1,385.17 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Moist, brown-gray silt, trace of clay (hard)
8-80	Wet, gray silt, some clay, trace of stone (soft to medium and plastic)
80-85	Dry silt, some angular stone and sand (very hard)
85-105	Moist, brown sand, some silt and stone (very compact)
105-132	Moist, brown silt, some fine sand, trace of fine stone (very hard)
132-181.5	Wet, gray silt, some clay, trace of stone (medium and plastic, becoming hard). Becoming moist with depth. Hole ends in this unit

62-DH8 Drilled December 5-January 5, 1962. Lat 42°27'19", Long 78°38'38". Altitude 1,370.10 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-2 ft	Moist, yellow-brown silt, some fine sand, trace of stone (medium)
2-14	Moist, gray-brown coarse sand and stone, some silt (compact)
14-30	Moist, gray silt, some stone and clay (hard), becoming wet
30-134	Wet, gray silt, some clay, trace of stone (medium and plastic, becoming hard)
134-140	Moist, gray-brown silt, some stone and sand, trace to some clay (hard)
140-180	Moist, gray silt, trace to some clay, trace of very fine sand (hard becoming very hard). Becoming wet
180-185	Wet, gray silt, trace to some clay and fine stone (very hard)
185-192	Wet, gray silt, trace of clay and very fine sand (very hard)
192-201.5	Wet, gray silt, trace to some clay, trace of fine stone and very fine sand (very hard). Hole ends in this unit

62-DH9 Drilled January 8-February 6, 1962. Lat 42°26'44", Long 78°38'09". Altitude 1,396.78 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-5 ft	First foot is topsoil. Yellow-brown silt, trace of fine sand and clay (medium)
5-8	Brown sand, trace of flat stone, silt, clay (loose)
8-13	Brown silt, some vertical sand seams (medium to hard)
13-55	Gray silt, some clay, trace to some stone (medium and plastic)
55-67	Gray silt, some stone, trace of sand and clay (very hard)
67-95	Gray silt, trace to some clay and fine stone (medium becoming hard, and plastic)
95-155	Gray silt, some clay, trace of fine stone (medium to hard, and plastic)
155-201.5	Gray silt, trace to some clay (very hard). Hole ends in this unit

62-DH10 Drilled March 29-May 10, 1962. Lat 42°27'05", Long 78°38'09". Altitude 1,471.85 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	First foot is topsoil. Moist, mottled (yellow, brown, red) silt, trace of clay and very fine sand (medium)
8-25	Mottled (gray, brown, yellow) silt, trace of weathered shale, clay and very fine sand (very hard).
25-53	Layered silt and shale (very hard). Overlies seamed and broken calcareous shale bedrock

62-DH11 Drilled April 5-May 9, 1962. Lat 42°27'38". Long 78°38'37". Altitude 1,360.85 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-10 ft	Brown silt, trace of clay and layered sand (medium and plastic)
10-30	Gray silt, some clay, trace of stone (medium and plastic)
30-35	Gray sand, trace of silt (loose)
35-45	Gray silt, some clay, trace to some stone (medium and plastic)
45-65	Gray silt, some fine stone and clay, trace of sand (medium and plastic)
65-87	Gray silt, some clay, trace of fine stone (medium and plastic)
87-110	Gray silt, some clay and angular stone (hard becoming very hard)
110-120	Gray sand, some angular stone and silt (very compact)
120-140	Gray sand, some fine stone, trace of silt (very compact)
140-160	Gray silt, some clay, trace to some fine stone (medium and plastic)
160-162	Layered sand
162-190	Gray silt, some clay, trace of stone and very fine sand (medium and plastic)
190-194	Gray silt, some clay and fine stone, trace of sand (very hard)
194-207.25	Gray silt, some clay and gravel stone, trace of fine layered sand (very hard) Overlies seamed and broken shale bedrock

Table 3.--Logs of Wells and Test Borings (continued)

61-DH13 Drilled November 20-24, 1961. Lat 42°27'08", Long 78°38'54". Altitude 1,371.66 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-9 ft	Moist, brown sand, trace of silt and fine gravel, stone (firm)
9-18	Moist, gray silt, trace of clay and fine stone (hard)
18-22	Wet, gray silt, some fine stone and sand, trace of clay (medium)
22-25	Wet, gray silt, trace to some clay and fine stone (medium)
25-31.5	Wet, gray fine stone, some silt and sand, trace of clay (firm). Hole ends in this unit

62-DH14 Drilled February 13-19, 1962. Lat 42°26'36", Long 78°38'30". Altitude 1,370.6 ft. Log from records of New York State Dept. of Public Works, Bureau of Soil Mechanics.

0-8 ft	Gray-brown silt, trace of layered sand and clay (medium)
8-17	Silt, trace of clay, very fine sand and fine stone (medium). Gray at 11 ft
17-53	Gray silt, some clay, trace of fine stone (medium), medium, hard, plastic at 41 ft
53-61	Gray-brown sand and gravel stone, some silt (very compact)
61-66	Yellow-brown fine sand and silt (very compact). Yellow-brown-gray at 65 ft

62-DMB1 Drilled November 2-3, 1962. Lat 42°27'01", Long 78°39'09". Altitude 1,388.77. Log from reports by Dames and Moore (1963).

0-4 ft	Mottled brown and gray clayey silt with roots
4-7	Gray sandy gravel
7-33	Brownish-gray silty clay with gravel
33-35	Grayish-brown sand gravel
35-62	Brownish-gray silty sandy clay with gravel, grading less silt and sand at 44 ft

62-DMB2 Drilled November 1-2, 1962. Lat 42°27'01", Long 78°39'09". Altitude 1,390.38 ft. Log from report by Dames and Moore (1963).

0-1 ft	Soft brown clay with roots and organic matter
1-11	Brownish-gray sandy gravel
11-54	Brownish-gray silty clay with gravel, grading trace of sand at 50 ft
54-55	Sandy gravel
56-85	Brownish-gray silty clay with gravel

62-DMB3 Drilled November 2, 1962. Lat 42°27'02", Long 78°39'08". Altitude 1,386.10 ft. Log from report by Dames and Moore (1963).

0-3.5 ft	Mottled brown and gray mixture of silt, sand and gravel
3.5-27	Brownish-gray silty clay with gravel

62-DMB4 Drilled November 5, 1962. Lat 42°27'01", Long 78°39'08". Altitude 1,386.10 ft. Log from report by Dames and Moore (1963).

0-7.5 ft	Mottled brown and gray mixture of silt, sand and gravel
7.5-27	Brownish-gray silty clay with gravel

62-DMB5 Drilled November 5, 1962. Lat 42°27'00", Long 78°39'10". Altitude 1,393.97 ft. Log from report by Dames and Moore (1963).

0-8 ft	Mottled tan and brown mixture of silt, sand and gravel
8-30	Brownish-gray silty clay with gravel
30-31	Gray silt and sand
31-33	Gray-brown sandy gravel
33-42	Brownish-gray silty clay with gravel

62-DMB6 Drilled November 7, 1962. Lat 42°27'02", Long 78°39'10". Altitude 1,390.56 ft. Log from report by Dames and Moore (1963).

0-0.5 ft	Topsoil-roots and organic matter
0.5-6	Brown mixture of clay, silt, sand and gravel
6-42	Brownish-gray silty clay with gravel and rock fragments, grading to trace of sand at 20 ft and no sand at 25 ft.

62-DMB7 Drilled November 8-12, 1962. Lat 42°27'02" Long 78°39'11". Altitude 1,394.03 ft. Log from report by Dames and Moore (1963).

0-1.0 ft	Brown silty clay with roots and gravel
1-11	Mottled tan and gray mixture of clay, silt, sand, gravel, and angular rock fragments
11-80	Brownish-gray silty clay with trace of gravel, grading to no gravel at 23 ft, and trace of gravel at 40 ft
80-94	Gray mixture of silt and sand with gravel and rock fragments
94-102	Dark grayish-brown silty fine sand, occasional thin clay lenses
102-166	Dark gray clayey silt, grading to little or no clay at 130 ft, and occasional gravel at 158 ft

62-DMB8 Drilled November 6, 1962. Lat 42°27'01", Long 78°39'11". Altitude 1,396.69 ft. Log from report by Dames and Moore (1963).

0-11.0 ft	Brown mixture of silt, sand, gravel and rock fragments
11-42	Brownish-gray silty clay with gravel

62-DMB9 Drilled November 6, 1962. Lat 42°26'59", Long 78°39'10". Altitude 1,393.13 ft. Log from report by Dames and Moore (1963).

0-13 ft	Brown-mixture of clay, silt, sand and gravel
13-28	Gray silty clay with trace of gravel

Table 3.--Logs of Wells and Test Borings (continued)

62-DMB10 Drilled November 6, 1962. Lat 42°27'01", Long 78°39'11". Altitude 1,393.73 ft. Log from report by Dames and Moore (1963).

0-11 ft	Brown mixture of silt, sand, gravel and rock fragments
11-27	Brownish-gray silty clay with gravel

62-DMB12 Drilled November 11-13, 1962. Lat 42°27'09", Long 78°39'06". Altitude 1,389.99 ft. Log from report by Dames and Moore (1963).

0-4 ft	Roots and other organic matter, grayish-brown silty clay
4-24	Brown mixture of clay, silt, sand with gravel
24-82	Brownish-gray silty clay with gravel and angular rock frsgments, grading to trace of gravel at 32 ft

62-DMB16 Drilled November 14-15, 1962. Lat 42°27'13", Long 78°39'16". Altitude 1,409.18 ft. Log from report by Dames and Moore (1963).

0-3 ft	Brown clayey silt with some gravel (roots and organic matter present in top 2 in.
3-26	Mottled tan and gray mixture of clay, silt, sand with some gravel and angular rock fragments
26-27	Brown silty clay
27-40	Brown clay, silt, sand, gravel mixture
40-62	Brownish-gray silty clay with gravel and rock fragments

62-DMB17 Drilled November 17, 1962. Lat 42°27'01", Long 78°39'15". Altitude 1,406.67 ft. Log from report by Dames and Moore (1963).

0-3 ft	Brown clayey silt with some gravel (roots and other organic matter present in top 4 in.
3-17	Brown mixture of clay, silt, sand, gravel and rock fragments
17-25	Brownish-gray silty clay with layers of gravel
25-31	Brown mixture of clay, silt, sand and gravel
31-42	Brownish-gray silty clay with layers of gravel

62-DMB18 Drilled November 15-16, 1962. Lat 42°27'03", Long 78°39'20". Altitude 1,413.69 ft. Log from report by Dames and Moore (1963).

0-3 ft	Brown clayey silt (roots and other organic matter present in top 3 in.)
3-22	Brown mixture of clay, silt and sand with some gravel
22-63	Brownish-gray silty clay with gravel and rock fragments, grading to less gravel at 25 ft, snd trace of fine sand and more gravel at 42 ft.
63-67	Green mixture of clay, silt, sand and angular gravel

62-DMB19 Drilled November 16, 1981. Lat 42°27'01" Long 78°39'20". Altitude 1,415.00 ft. Log from report by Dames and Moore (1963).

0-2 ft	Brown clayey silt (roots and organic matter present in top 6 in.)
2-13	Brown mixture of clay, silt, sand, gravel, and angular rock fragments
13-27	Brownish-gray silty clay with trace of sand
37-41	Gray mixture of clay, silt, sand and gravel
41-43	Gray silty clay with gravel
43-52	Gray mixture of clay, silt, sand and gravel

63-DMB20 Drilled February 6-7, 1963. Lat 42°27'02" Long 78°39'17". Altitude 1,413.58 ft. Log from report by Dames and Moore (1963).

0-22 ft	Brown mixture of silt, sand, gravel and rock fragments (roots and organic matter present in upper 3 in.), grading to high concentration of gravel and rock fragments
22-24	Brown sand with trace of small gravel
24-58	Brownish-gray silty clay with trace of sand and small gravel, grading to thin lenses of fine sand at 35 ft, to no sand lenses at 39 ft, to more silt, sand and gravel at 45 ft, no sand and increasing gravel content at 50 ft
58-82	Greenish-gray mixture of clay, silt, sand gravel and rock fragments, grading to smaller gravel and less rock fragments at 71 ft

63-DMB21 Drilled February 11, 1963. Lat 42°27'02" Long 78°39'20". Altitude 1,417.50 ft. Log from report by Dames and Moore (1963).

0-1.5 ft	Dark brown silt and fine sand with trace of gravel and rock fragments (roots and other organic matter in top 6 in.)
1.5-21	Brown mixture of clay, silt, sand, gravel and rock fragments, grading to high concentration of gravel and rock fragments
21-58	Brownish-gray silty clay with gravel layers, layers of gravel grading out and lenses of silty fine sand with trace of fine gravel grading in at 28 ft, lenses of silty fine sand grading out at 34 ft, gravel grading out at 39 ft, grading to trace of fine gravel at 48 ft, snd more gravel at 54 ft
58-77	Greenish-gray mixture of clay, silt, sand, gravel and rock fragments
77-80	Bedrock

63-DMB22 Drilled February 9-10, 1963. Lat 42°27'03", Long 78°39'19". Altitude 1,411.95 ft. Log from report by Dames and Moore (1963).

0-1 ft	Dark brown silt and fine sand with trace of gravel (roots and other organic matter present in top 4 in.)
1-24	Brown mixture of clay, silt, sand, gravel and rock fragments
24-66	Brownish-gray silty clay with gravel, grading to much gravel at 29 ft, no gravel at 33 ft, trace of gravel at 38 ft, and more gravel at 54 ft
66-73	Greenish-gray mixture of clay, silt, sand gravel, and rock fragments
73-78	Bedrock

63-DMB23 Drilled Febrary 7-8, 1963. Lat 42°27'05", Long 78°39'19". Altitude 1,411.95 ft. Log from report by Dames and Moore (1963).

0-11 ft	Brown mixture of clay, silt, sand, gravel and rock fragments (roots and other organic matter in top 4 in.)
11-78	Brownish-gray silty clay, grading to trace of gravel at 14 ft, lenses of silty sand at 21 ft, more gravel at 46 ft, high concentration of gravel and rock fragments at 51 ft, less gravel at 63 ft, and more gravel at 77 ft
77-83	Bedrock

63-DMB24 Drilled February 6, 1963. Lat 42°26'57", Long 78°39'16". Altitude 1,410.28 ft. Log from report by Dames and Moore (1963).

0-12 ft	Brown mixture of silt, fine sand, small gravel and rock fragments, grading to more gravel at 3 ft and predominantly angular rock fragments at 9 ft
12-20.5	Brownish-gray silty clay with trace of small gravel, grading to more silt at 17 ft
20.5-25	Brown sand with trace of small gravel
25-42	Gray silty clay with some gravel, grading to more gravel at 29 ft, less gravel at 32 ft, no gravel at 33 ft, and more gravel at 39 ft

63-DMB25 Drilled February 9, 1963. Lat 42°27'00", Long 78°39'19". Altitude 1,412.55 ft. Log from report by Dames and Moore (1963).

0-1 ft	Dark brown silt, clay, fine sand, with trace of gravel (roots and other organic matter in top 3 in.)
1-18	Brown mixture of clay, silt, sand, gravel, and rock fragments, grading to more gravel and rock fragments at 8 ft and less gravel at 17 ft
18-20	Brownish-gray silty clay with trace of fine gravel
20-23	Brown clayey fine sand
23-52	Brownish-gray silty clay with some gravel, grading to sand and more gravel at 29 ft, less and and gravel at 33 ft, and more gravel at 50 ft
52-77	Greenish-gray mixture of clay, silt, sand, gravel and rock fragments
77-77.5	Bedrock

69-USGS1-5 Summary log of pertinent rock characteristics from cores and geophysical logs from observation wells 70-USGS2 through 70-USGS5 and injection well 70-USGS1. Drilled in 1969. Lat 42°26'42", Long 78°38'04". Altitude 1368.5 ft. Log from unpubliahed records of USGS.

0-169 ft	Soil, glacial drift, and till (driller and personal observation). Contains numerous large boulders and cobbles in a firm matrix of clay and silt.
169-175	Shale, weathered
175-356	Shale, medium light gray, medium dark gray and greenish gray, noncalcareous, mostly non-montmorillonitic, moderately fissile to blocky fracture; interbedded with numerous thin layers (most less than 0.01 ft but some up to 0.1 ft) of medium to coarse-grained siltstone, some of which are calcareous; small-scale angular and erosional disconformities common at the contacts of shale and siltstone layers; also at or near such contacts some crumpling of beds and sharpstone conglomerate indicating penecontemporaneous effects; such contact features constitute lines of weakness and exhibit preferential tendencies toward "bedding-plane" or near-horizontal fracture. Slightly to moderately montmorillonitic 206-213 ft
356-490	Shale, as above but with much less interbedded siltstone; most of these rocks have a tendency toward blocky fracture but some especially the sale, break readily on bedding planes. Slightly monmorillonitic at 370 ft and 430 ft
490-527	Shale, light gray to medium dark gray, with widely scattered thin beds of siltstone; small-scale disconformities noted at many of the contacts and planes of weakness in tension are parallel to the bedding. Slightly montmorillonitic at 518 ft
527-528	Sharpstone conglomerate
528-618	Shale, silty, noncalcareous, non-montmorillonitic, medium dark gray to dark gray; interbedded with thin layers of light gray to medium gray shaly siltstone, some of which is slightly calcareous; individual beds massive, but tend to fracture parallel to contacts
618-730	Siltstone, shaly, light gray, mostly noncalcareous or only moderately calcareous, nonmontmorillonitic, in thicker beds than above, variously indurated; interbedded with silty non-calcareous and nonmontmorillonitic darker gray shale; an exceptionally calcareous zone with a small septarian nodule from 634.5 to 635 ft
730-749	Shale, silty, medium gray, with some slightly calcareous sharpstone at 730 ft; becomes brownish black and petroliferous between 742 and 749 ft.

Table 3.--Logs of Wells and Test Borings (continued)

69-USGS1-5 (continued)

749-771	Siltstone, shaly, mostly gray but containing scattered grayish-black layers; interbedded with silty, noncalcareous, nonmontmorillonitic medium gray shale; small-scale disconformities noted near contacts
771-901	Shale, mostly silty, medium gray, greenish gray and grayish black, nonmontmorillonitic, petroliferous 802 to 803 ft, 854 to 865 ft, and 872 to 874 ft, in general well laminated; fractures parallel to bedding, very pyritic at 815 and 864 ft; at 815 ft pyrite is so common that the rock resembles a conglomerate at first glance; contains scattered very thin siltstone layers, the thickest of which are between 771 and 815 ft
901-901.7	Sharpstone conglomerate
901.7-907	Shale, gray black to brownish black, very petroliferous, noncalcareous, nonmontmorillonitic
907-908	Sharpstone conglomerate
908-910.9	Shale, silty, dark gray to black or brownish black, very petroliferous, noncalcareous, nonmontmorillonitic; well laminated
910.9-913.7	Siltstone, shaly, medium gray
913.7-916.5	Sharpstone conglomerate and poorly bedded shale
916.5-927.7	Siltstone, massive, light gray to medium gray
927.7-934.5	Shale, medium gray to greenish gray, noncalcareous, nonmontmorillonitic, fairly thin bedded
934.5-937.5	Sharpstone conglomerate
937.5-1014	Siltstone, medium gray, mostly shale but in places fairly coarse-grained, massive-bedded, moderately to very calcareous, nonmontmorillonitic; interbedded with thin layers of dark gray to grayish black, mostly noncalcareous, petroliferous shale; contains sharpstone conglomerate from 955.3 to 955.7 ft
1014-1055	Shale, dark gray to grayish black, noncalcareous, petroliferous, very pyritic and marcasitic 1126.5 to 1127 ft; interbedded with lighter gray siltstone; thickest layer 1030.5 to 1032 ft.
1055-1055.6	Sharpstone conglomerate
1055.6-1138	Shale, silty, dark gray to grayish black, moderately petroliferous, noncalcareous, very pyritic and marcasitic 1126 to 1127 ft; interbedded with fine-grained shaly, medium gray, calcareous, nonmontmorillonitic siltstone; percentage of siltstone decreases with depth to about 1118 ft, but several layers below 1118 ft sre 2 to 4 ft thick and massive; small-scale disconformities, both angular and erosional are noted at the contacts of the thickest beds
1138-1139	Sharpstone conglomerate
1139-1144	Shale, greenish-gray, moderately petroliferous; contains numerous pyritic seams; interbedded with light to medium-gray siltstone; small-scale angular disconformities at or near contacts
1144-1149	Sandstone, very fine grained, silty, and coarse-grained calcareous siltstone, pyritic; interbedded with thin layers of shale
1149-1212	Shale, brownish gray to grayish-black, mostly very petroliferous, noncalcareous, very thin bedded but massive in appearance in the freshly cut core; interbedded with very thin layers of siltstone, especially between 1171 and 1181 ft; very pyritic and marcasitic 1159 to 1161 ft and 1198.4 to 1200 ft; planar fracture habit parallel to bedding when under tension but well indurated
1212-1256.1	Shale, mostly silty, in general less petroliferous than the shale described above but with some thin petroliferous beds, mostly medium gray to olive gray; abundant pyrite and marcasite at 1218.4 and 1238 ft; banding appears related to relative amounts of hydrocarbons present but perhaps also to depositional situation; fairly well laminated; planar fracture habit under tension
1256.1-1257.1	Large calcareous septarian nodule or concretion, having most intersecting internal cracks filled with secondary mineralization
1257.1-1298.1	Shale, medium gray, dark greenish gray and brownish black, noncalcareous, well laminated, very petroliferous 1259 to 1264 ft and 1283 to 1298.2 ft; contains large concretions of pyrite and marcasite between 1270 and 1271 ft and much disseminated pyrite elsewhere; planar fracture habit parallel to bedding planes, when under tension
1298.1-1299.1	Large calcareous septarian nodule or concretion with filled intersecting internal cracks
1299.1-1307	Shale, non-calcareous, nonmontmorillonitic, silty, well laminated, very petroliferous; interbedded with two siltstone layers about 0.5 ft thick and with scattered very thin light gray siltstone layers; planar fracture habit under tension
1307-1308	Siltstone, medium gray; solid petroleum residues at 1308 ft
1308-1322.8	Shale, non-calcareous, mostly silty, thin bedded, petroliferous between 1308 and 1311 ft; interbedded with a few very thin scattered siltstone layers
1322.8-1323.8	Large, silty calcareous septarian nodule or concretion having intersecting internal cracks filled by secondary mineralization
1323.8-1340.2	Shale, silty, noncalcareous, medium gray to brownish black, very thin bedded, mostly nonpetroliferous; interbedded with a few very thin light gray siltstone layers

Table 3.--Logs of Wells and Test Borings (continued)

69-USGS1-5 (continued)

1340.2-1371.7	Rhinestreet Shale Member: Shale, black, well laminated, very petroliferous, noncalcareous, very pyritic and marcasitic; contains numerous pyritized septarian nodules; interbedded with thin layers of siltstone; small-scale angular disconformities near contacts of siltstone and shale
1371.1-1447.8	Shale, grayish-black and brownish black, very petroliferous, mostly noncalcareous and nonmontmorillonitic; in part slightly silty but very few siltstone layers of appreciable thickness (most less than 0.01 ft, however, two of 0.1 and 0.2 ft between 1390 and 1391 ft and one of 0.2 ft at 1432 ft); contains .5-inch pyritized, concretions between 1421 and 1422 ft and finely disseminated pyrite and marcasite on bedding planes between 1428 and 1439 ft; especially calcareous at 1391 ft; good planar fracture habit under tension; well laminated; some banding apparently due to differences in hydrocarbon content; fairly well indurated
1447.8-1449	Large calcareous silty septarian nodule or concretion with only partially filled intersecting internal fractures; small angular disconformities noted in beds above and below this layer
1449-1497.5	Shale, silty, noncalcareous to slightly calcareous, mostly very petroliferous, nonmontmorillonitic; finely laminated; good planar fracture habit under tension but well indurated; interbedded with shaly siltstone layers, especially from 1464 to 1465 ft and from 1482 to 1483 ft; pyritic and marcasitic seams noted especially between 1480.9 and 1481.9 ft and between 1465 and 1468 ft

70-DMB1 Drilled June 4, 1970. Lat 42°26'33", Long 78°37'51". Altitude 1,407 ft. Log from report by Dames and Moore (1970).

0-5	Brown and gray silty clay with rock fragments (fill)
5-25	Brownish-gray silty clay with roots to 6 ft, grading gray in color and with occasional fine to coarse gravel
25-29	Gray clay with occasional coarse sand and fine gravel medium stiff
29-42	Brownish-gray silty fine to coarse gravel and fine to coarse sand (very dense)

70-DMB2 Drilled June 9, 1970. Lat 42°26'33", Long 78°37'51". Altitude 1406.6 ft. Log from report by Dames and Moore (1970).

0-3	Greenish-gray clayey silt with rock fragments (fill)
3-10.5	Grayish-brown silty clay
10.5-27	Gray clay with occasional coarse sand and fine gravel
27-34	Gray fine to coarse sand with some fine to coarse gravel and a little silt
34-49	Brown fine sand, grading very fine
49-78	Gray clay
78-89	Gray silt with a little fine sand, medium dense
89-95	Brownish-gray very fine sand, dense
95-110	Gray silty clay, medium stiff
110-115	Gray clayey fine sand, medium dense
115-120	Gray silty clay
120-135	Gray clayey silt, medium stiff, grading with layers of gray fine sand
135-139.5	Gray fine to coarse sand and gravel
139.5-221	Gray clayey silt, grading with coarse gravel at 146 ft, with less gravel at 150, with some coarse sand and fine gravel at 195, with rock fragments at 220 ft
221-231	Gray shale, fractured

70-DMB3 Drilled June 4, 1970. Lat 42°26'33", Long 78°37'51". Altitude 1,405 ft. Log from report by Dames and Moore (1970).

0-17 ft	Fill 0 to 2 ft clay, gravel and broken stones, brownish-gray silty clay with roots to 2.5 ft
17-25	Gray clay more plastic and soft
25-42	Gray fine to coarse sand and gravel, layer of fine sand from 33 to 35½ ft, grading coarser

70-DMB4 Drilled June 9, 1970. Lat 42°26'33", Long 78°37'51". Altitude 1,403.3 ft. Log from Dames and Moore (1970).

0-15 ft	Brown silty clay with roots 0 to 2 ft
15-25	Gray clay with occasional gravel
25-30	Brownish-gray silty fine to coarse sand
30-38	Brown fine sand with some silt
38-42	Gray fine to coarse sand with some gravel

70-DMB5 Drilled June 12, 1970. Lat 42°26'33", Long 78°37'51". Altitude 1,408.6 ft. Log from report by Dames and Moore (1970).

0-3 ft	Grayish-brown clayey silt with rock fragments-fill
3-28	Grayish-brown silty clay with occasional sand pockets
28-45	Brownish-gray silty fine to coarse sand and gravel, brownish-green fine gravel fragments, more sand at 41 ft
45-79	Gray silty clay with some fine to medium sand, more silt at 50 ft
79-95	Gray fine sand, trace of silt
95-107	Gray silty clay with occasional lenses and layers of fine sand, more fine sand at 100 ft
107-120	Gray sandy silt with a little clay, more sand at 115 ft
120-123	Gray clay
123-137	Grading with some medium to coarse sand and a little clay
137-156	Gray silty clay, grading with a little fine sand at 145 ft, with cobble and occasional boulders at 150 ft

156-220	Gray clayey silt with traces of fine sand, grading with rock fragments at 217 ft
220-230	Gray shale-fractured

70-DMB6 Drilled June 12, 1970. Lat 42°26'33", Long 78°37'51". Altitude 1,407.0 ft. Log from report by Dames and Moore (1970).

0-3 ft	Grayish-brown silty clay with rock fragments (dill)
3-18	Grading with some fine to coarse gravel
18-26	Gray clay with occasional gravel
26-35	Gray silty fine to coarse sand and gravel, more gravel at 30 ft
35-38.5	Gray fine to medium sand
38.5-42	Gray silty fine to coarse sand and gravel

70-DMB7 Drilled June 12, 1970. Lat 42°26'33", Long 78°37'51". Altitude 1,405.4 ft. Log from report by Dames and Moore (1970).

0-17 ft	Grayish-brown silty clay with occasional fine to coarse sand, grading with some fine to coarse gravel
17-25	Gray clay
25-42	Grayish-brown silty fine to coarse sand and gravel

70-DMB 8 Drilled June 13, 1970. Lat 42°26'33", Long 78°37'51". Altitude 1,404.4 ft. Log from report by Dames and Moore (1970).

0-18 ft	Brown silty clay with occasional sand pockets
18-25	Gray clay
25-42	Gray silty fine to coarse sand and gravel, layer of light brown fine sand from 35 to 39 ft

70-DMB9 Drilled June 13, 1970. Lat 42°26'33", Long 78°37'51". Altitude 1,407.0 ft. Log from report by Dames and Moore (1970).

0-16 ft	Gray silty clay, rock fragments to 1 ft (fill), brownish-gray silty clay with occasional pockets
16-27	Gray clay
27-42	Grayish-brown silty fine to coarse sand and gravel

70-DMB26 Drilled August 7, 1970. Lat 42°27'00", Long 78°39'19". Altitude 1,415.00 ft. Log from report by Dames and Moore (1970).

0-20 ft	Grayish-brown gravel with some sand and silt (dense)
20-24	Gray silty clay with trace of fine sand and occasional gravel (stiff)
24-32	Gray clayey fine to coarse sand and gravel (dense)
32-58	Gray silty clay with a trace of fine sand and occasional gravel (stiff), sand pockets at 51 ft
58-77	Gray silty fine to medium sand with some coarse sand and gravel; till (very dense)

70-DMB27 Drilled August 8, 1970. Lat 42°27'00", Long 78°39'20". Altitude 1,415.0 ft. Log from report by Dames and Moore (1970).

0-20 ft	Grayish-brown gravel with some sand and silt (dense)
20-24	Gray silty clay with occasional gravel (stiff)
24-28	Gray clayey fine to coarse sand and gravel (dense)
28-50	Gray silty clay with some sand and fine gravel (stiff)
50-76	Gray silty fine to medium sand with with some coarse sand and gravel till (very dense)

71-DMB28 Drilled August 20, 1971. Lat 42°26'53", Long 78°39'20". Altitude 1,417.00 ft (est.). Log from report by Dames and Moore (1971).

0-6 ft	Brown silt with base of sand and gravel and roots (very stiff)
6-14	Dark brown sand silty with some gravel (stiff) grading to gray
14-20	Light gray shale (weathered rock)
20-32	Gray shale, less weathered

71-DMB29 Drilled August 23, 1971. Lat 42°26'51", Long 78°39'15". Altitude 1,393.00 ft (est.). Log from report by Dames and Moore (1971).

0-1 ft	Dark brown sandy silty with wood (topsoil)
1-3	Light brown silt (hard)
3-42	Brown silty clay (very stiff), grading to gray at 9 ft, less stiff at 10 ft, with sand and gravel at 12 ft, and with some rock fragments at 29 ft

71-DMB30 Drilled August 19, 1971. Lat 42°26'53", Long 78°39'14". Altitude 1,393.00 ft (est.). Log from report by Dames and Moore (1971).

0-4 ft	Brown sandy silt with gravel and roots (dense), grading to brown and gray
4-8	Brown and gray silty clay (medium stiff)
8-17	Brown clayey fine to coarse sand and gravel (medium dense), grading to more dense at 12.5 ft with more silty clay at 14 ft
17-34	Gray silty clay (stiff)
34-67	Dark gray clayey silt with some gravel and fine to coarse sand (very stiff), grading to stiffer at 58 ft
67-73	Dark gray fine to medium sand with trace of silt (dense)
73-101	Dark gray clayey silt with some fine to coarse sand and gravel (hard) grading to no clay at 82 ft with more sand at 88 ft
101-115	Dark gray silt with some weathered rock fragments
115-125	Gray shale

71-DMB31 Drilled August 20, 1971. Lat 42°26'56", Long 78°39'15". Altitude 1,404.00 ft (est.). Log from report by Dames and Moore (1971).

0-8 ft	Brown silt with some sand and gravel (very stiff), grading with aome clay
8-22	Brown and gray silty fine to coarse sand and gravel (loose), grading dense at 20 ft.
22-42	Dark gray silty clay with occasional lenses of silt (stiff), grading with some sand and gravel at 34 ft

71-DMB32 Drilled August 26, 1971. Lat 42°26'55", Long 78°39'08". Altitude 1,378.00 ft (est.). Log from report by Dames and Moore (1971).

0-2 ft	Light brown silt (dense)
2-7	Brown silty fine to coarse sand with some gravel (medium dense)
7-85	Gray silty clay with trace of fine gravel (stiff), grading with layers of fine to medium sandy silt at 13 ft, sand silt grading out at 20 ft, 6-in. layer of gray silty fine sand at 35.75 ft, grading to medium stiff at 73 ft.
85-114	Grayish-brown silt with lenses of clayey silt (stiff), grading to gray at 89 ft, clayey silt grading out at 92 ft.
114-116	Gray clayey fine to coarse sand
116-133	Dark gray silty clay with a trace of fine gravel and coarse sand (stiff)
133-195	Dark gray clayey silt with a trace of sand and fine gravel (very stiff), clay grading out at 141 ft
195-205	Gray sand silt, gravel and occasional cobbles
205-215	Gray shale

73-NFS1 Drilled November 30, 1973. Lat 42°26'56", Long 78°39'02". Altitude 1385 ft. Log by Henry H. Bailey of New York State Geological Survey based on examination of split-spoon samples of hole 1 stored in West Valley at Nuclear Fuels Service, Inc. (June 2, 1975).

19-21 ft	6-in. core, silt, light olive to olive gray (5Y5/1) with a trace of pebbles, angular to subround, ranging up to 15x20x25 mm and medium to coarse sand; trace of fine to very fine sand. Pebbles and sand are randomly distributed within the silt matrix. No bedding or sedimentary structures. The samples from hole no. 1 are dry
29-31	3.5-in. core, silt, light olive to olive gray (5Y 5/1) with a trace of pebbles, angular to subround, ranging up to 15x20x25 mm and medium to coarse sand; trace of fine to very fine sand. Pebbles and sand are randomly distributed within silt matrix. No bedding or sedimentary structures
35-37	8.5-in. core, silt, light olive to olive gray (5Y 5/1) with a trace of pebbles, angular to subround, ranging up to 15x20x25 mm and medium to coarse sand; trace of fine to very fine sand. Pebbles and sand are randomly distributed within silt matrix. No bedding or sedimentary structures
39-41	6-in. core, silt, light olive to olive gray (5Y 5/1) with a trace of pebbles, angular to subround, ranging up to 15x20x25 mm and medium to coarse sand; trace of fine to very fine sand. Pebbles and sand are randomly distribited within silt matrix. No bedding or sedimentary structures
45-47	5.5-in. core, silt, light olive to olive gray (5Y 5/1) with a trace of pebbles, angular to subround, ranging up to 15x20x25 mm and medium to coarse sand; trace of fine to very fine sand. Pebbles and sand are randomly distributed within silt matrix. No bedding or sedimentary structures
49-51	12.5-in. core, silt, light olive to olive gray (5Y 5/1) with a trace of pebbles, angular to subround, ranging up to 15x20x25 mm and medium to coarse sand; trace of fine to very fine sand. Pebbles and sand are randomly distributed within silt matrix. No bedding or sedimentary structures

Log of 73-NFS1 by driller from Giardina and others (undated), p. 45.

4-6 ft	Brown silt clay few small stones
9-11	Brownish gray silt clay few small stones
14-16	Gray silt clay small amount fine stones
19-21	Gray clay silt, very few stones
24-26	Gray clay silt, few small stones
29-31	Gray clay, some silt, very few small stones
34-36	Gray clay silt, few stones
39-41	Gray clay silt, few stones
44-46	Gray clay silt, few stones
49-51	Gray clay silt, few small stones

73-NFS2 Drilled November 29, 1973. Lat 42°26'57", Long 78°39'01". Altitude 1,386 ft. Log by Henry H. Bailey of New York State Geological Survey based on examination of split-spoon samples of hole 2 stored in West Valley at Nuclear Fuels Service, Inc. (June 2, 1975).

5-7 ft	3-in. core, silt, light olive gray (5Y 5/2) mottled dark yellowish orange (10YR 6/6), trace of pebbles, angular to subround ranging up to 10 mm, and sand, medium to coarse, trace of fine to very fine sand. Sand and pebbles randomly distributed in silt matrix.

15-17	11.5-in. core, 3.25-in. silt, light olive gray (5Y 5/2) mottled dark yellowish orange (10YR 6/6) and very pale orange (10YR 8/2), otherwise as above. 6.5-in. silt, light olive gray (5Y 5/2) mottled medium gray (N-5), otherwise as above. 1.75-in. silt, light olive gray (5Y 6/1), otherwise as above
19-21	10.75-in. core, 6.5-in. silt, olive gray (5Y 4/1), otherwise as above. 4.25-in. silt, light olive gray (5Y 6/1) mottled dark yellowish orange (10YR 6/6) and moderate brown (5YR 4/4), otherwise as above
25-27	16.5-in. core, silt, ranging in color from olive back (5Y 2/1) through olive gray (5Y 4/1) to light olive gray (5Y 6/1) depending on degree of dampness of core samples, with trace of pebbles ranging up to 25 mm., angular to subround, and medium to coarse sand, trace of fine and very fine sand. No bedding observed. Samples range from moderately damp to dry
29-31	10-in. core, as above
35-37	15-in. core, as above
39-41	12-in. core, as above
45-47	14-in. core, as above
49-51	12-in. core, as above

Log of 73-NFS2 by driller from Giardina and others (undated), p. 45.

4-6 ft	Brown silt clay, few small stones
9-11	Brown silt clay, few small stones
14-16	Gray-brown silt clay, few small to medium stones
19-21	Dry gray clay with silt, very few small stones
24-26	Gray clay silt, few stones
29-31	Gray clay silt, few stones
34-36	Gray clay silt, few stones
39-41	Gray clay silt, few stones
44-46	Moist gray clay silt, few stones
49-51	Gray clay silt, very few stones

73-NFS3 Drilled November 28-29, 1973. Lat 42°26'57", Long 78°39'01". Altitude 1,380 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of split-spoon samples of hole 3 stored at West Valley at Nuclear Fuels Services, Inc. (June 12, 1975).

5-7 ft	3-in. core, silt, light olive gray (5Y 6/1), trace of pebbles, ranging up to 25 mm angular to subround, and medium to coarse sand, trace of fine and very fine sand. One rootlet in core sample
9-11	3-in. core, silt, light olive gray (5Y 6/1), mottled grayish orange (10YR 7/4), trace of pebbles ranging to 18x25x30 mm, angular to subround, otherwise as above
15-17	10-in. core, 4.5-in. silt, olive gray (5Y 4/1) otherwise as above
19-21	9-in. core, 2.5-in. silt, dark yellowish orange (10YR 6/6) (50 percent) and pebbles 50 percent ranging up to 9x25x35 mm, angular to subround, trace sand, very fine to coarse. 3¼-in.-segment of core sample is a mix of both types of both lithologies above. Silt, ranging from olive black (5Y 2/1) through olive gray (5Y 4/1) to light olive gray (4Y 6/1), depending on degree of dampness of core samples. Trace of pebbles, ranging to 15x20x25 mm, angular to subround, and medium to coarse sand, trace of fine and very fine sand. No bedding observed
25-27	12-in. core, as above
29-31	16-in. core, as above
35-37	14-in. core, as above
39-41	13-in. core, as above
45-47	11.5-in. core, as above
49-51	12.5-in. core, as above

Log of 73-NFS1 by driller from Giardina and others (undated), p. 45.

4-6	Brown silt clay few small stones
9-11	Brownish-gray silt clay, few small stones
14-16	Gray silt clay, small amount fine stones
19-21	Gray clay silt, very few stones
24-26	Gray clay silt, few small stones
29-31	Gray clay some silt, very few small stones
34-36	Gray clay silt, few stones
39-41	Gray clay silt, few stones
44-46	Gray clay silt, few stones
49-51	Gray clay silt, few small stones

73-NFS4 Drilled November 28, 1973. Lat 42°26'57", Long 78°39'00". Altitude 1,383 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of split-spoon samples of hole 4 stored at West Valley at Nuclear Fuels Services, Inc. (June 2, 1975).

9-11 ft	3.25-in. core, silt, dark grayish orange (10YR 6/4); trace of pebbles, angular to subround, ranging 12x27x42 mm; and medium to coarse sand, trace of fine to very fine sand
15-17	7.25-in. core, 3.75-in. silt, pale grayish orange (10YR 8/4), otherwise as above. 3.5-in. silt, light olive gray (5Y 7/1), otherwise as above
19-21	10.5-in. core, silt, light olive gray (5Y 6/1) with a trace of pebbles, angular to subround, ranging up to 12x20x25 mm and medium to coarse sand, trace of fine to very fine sand. Pebbles and sand are randomly distributed within silt matrix. No bedding or sedimentary structures unless noted. Samples vary in water content from dry to slightly damp

25-27	14.5-in. core, as above
29-31	11-in. core, as above
35-47	11-in. core, as above
39-41	14.5-in. core, as above
49-51	7.5-in. core, 5-in. silt, as above. 2.5-in. silt, as above, and sand (40 percent) fine to very fine. This portion of the core is friable, easily broken. Porosity and permeability are estimated to be fair. No bedding observed

Log of 73-NFS4 by driller from Giardina and others (undated), p. 45.

4-6 ft	Brownish-gray silty fine gravel clay
9-11	Brown silt clay, few small stones
14-16	Brown silt some clay, some small stones
19-21	Gray silt clay, few small stones
24-26	Gray silt clay, few small stones (moist)
29-31	Gray moist silty clay gravel (some water)
34-36	Gray silty clay, few small stones
39-41	Gray silty clay, few small stones
44-46	Gray silty clay sand layer 45.5 ft
49-51	Gray silty clay, few small stones

73-NFS5 Drilled December 3, 1973. Lat 42°26'56", Long 78°38'59". Altitude 1,387 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of split-spoon samples of hole 5 stored at West Valley at Nuclear Fuels Services, Inc. (June 2, 1975).

5-7 ft	2-in. core, silt, yellowish gray (5Y7/2), mottled grayish orange (10YR 7/4) and pebbles (± 40%) in the 15- to 40-mm range angular to subround. Sample badly fragmented
9-11	5-in. core, 3.5-in. silt, grayish orange to moderate yellowish brown (10YR 6/4) mottled light olive gray (5Y 6/1), trace pebbles, angular to subround, ranging to 12x23x40 mm, and medium to coarse sand, trace of fine to very fine sand. 1.5-in. silt, light gray (N7), otherwise as above
15-17	3-in. core, 3.75-in. silt, light olive gray (5Y 6/1), otherwise as above. 1.75-in. silt, intermediate between yellowish gray and light olive gray (5Y 6/2), otherwise as above
19-21	3-in. core, silt, light olive gray (5Y 7/2), otherwise as above
25-27	15.5-in. core, as above
29-31	13-in. core, as above
35-37	14.-5in. core, 5.5-in. sand, light olive gray (5Y 6/1), very fine to fine grained and silt of same color. Sand makes up approximately 50% of core sample. Core is friable, easily broken. Porosity and permeability are estimated to be fair. No bedding. 9-in. silt, as in 19-21 ft sample
45-47	8-in. core, silt as above
49-51	3-in. core, silt. Wrapping of gray (N7) silt around the brown (10YR 5/4) silt suggets an accidental inclusion of surface material in spoon. No pebbles or sand larger than fine. Pebbles and sand randomly distributed within silt matrix where specifically described. No bedding or sedimentary structures. Samples are dry

73-NFS6 Drilled December 3, 1973. Lat 42°26'53", Long 78°38'55". Altitude 1,387 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of shelby-tube samples of hole 6 stored at West Valley at Nuclear Fuels Services, Inc. (June 2, 1975).

5-7 ft	8.25-in. core, silt, grayish orange (10YR 7/4), mottled light gray (N7), trace of pebbles ranging up to 17 mm, angular to subround, and sand, medium to coarse, trace of fine to very fine sand
9-11	1.5-in. core, silt, yellowish gray (5Y 7/2), otherwise as above
15-17	12-in. core, 2-in. silt, olive black (5Y 2/1) mottled light gray (N7), otherwise as above. 3-in. silt, olive gray (5Y 6/1) mottled grayish orange (10YR 7/4) otherwise as above. 3.5-in. silt, light olive gray (5Y 6/1) otherwise as above. 3.5-in. silt, light olive gray (5Y 6/1) weakly mottled dark yellowish orange (10YR 6/6), pebbles to 7x18x26 mm, otherwise as above
19-21	9-in. core, silt, light olive gray (5Y 6/1) to olive gray (5Y 4/1) depending on degree of dampness of core samples, trace of pebbles ranging to 8x15x25 mm, angular to subround, and medium to coarse aand, trace of fine to very fine sand
25-27	13.75-in. core, as above
39-41	11.5-in. core, as above
45-47	12-in. core, as above
49-51	4.5-in. core, as above

Log of 73-NFS6 by driller from Giardina and others (undated), p. 46.

4-6 ft	Brown silt clay, few small stones
9-11	Brown silt clay, few small stones
14-16	Gray silt clay, few small stones (moist)
19-21	Gray clay silt, few small stones
24-26	Gray clay silt, few small stones (moist)
29-31	Gray silt clay, fine gravel
31-33	Gray silt clay, fine gravel
33-35	Gray silt clay, fine gravel
39-41	Gray clay silt, few fine stones
44-46	Gray silt clay, few small stones
49-51	Gray clay silt, few small stones

Log of 73-NFS6 by driller from Giardina and others (undated), p. 46.

4-6 ft	Brown silt clay, few small stones
9-11	Brown silt clay, few small stones
14-16	Gray silt clay, few small stones (moist)
19-21	Gray clay silt, few small stones
24-26	Gray clay silt, few small stones (moist)
29-31	Gray silt clay, fine gravel
31-33	Gray silt clay, fine gravel
33-35	Gray silt clay, fine gravel
39-41	Gray clay silt, few fine stones
44-46	Gray silt clay, few small stones
49-51	Gray clay silt, few small stones

73-NFS7B Drilled December 5, 1973. Lat 42°26'53", Long 78°38'59". Altitude 1,387 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of split-spoon samples of hole 7B stored at West Valley at Nuclear Fuels Services, Inc. (June 2-3, 1975).

5-7	2.75-in. core, pebbles, ranging to 10x15x25 mm, angular to subround (60%) in a matrix of sand and silt, pale yellowish brown (10YR 6/2) to dark yellowish brown (10YR 4/2) mottled dark yellowish orange, chaotic structure. Possible spotty porosity and permeability in this core sample
9-11	10-in. core, 4-in. silt, yellowish gray (5Y 7/2) mottled medium light gray (NG), trace of pebbles and medium to coarse sand, trace of fine to very fine sand. 1.75-in. silt, grayish orange (10YR 7/4) mottled moderate yellowish brown (10YR 5/4) to moderate brown (5YR 4/4). No texture change across mottling, otherwise as above. 4.25-in. silt, intermediate between grayish orange. Moderate yellowish brown (est. 10YR 6/4), otherwise as above
15-17	5-in. core, 3-in. silt, dark yellowish brown (10YR 4/2), otherwise as above. 3.5-in. silt, light olive gray (5Y 6/1), otherwise as above
19-21	5-in. core, silt, olive black (5Y 2/1) to light olive gray (5Y 5/1), otherwise as above. This sample was really just a wad of material, noncylindrical
25-27	4-in. core, sand, olive gray (5Y 6/1) to olive black (5Y 2/1), medium to coarse gained, badly sorted, trace of pebbles, under 10 mm, very friable, very easily broken. No bedding or layering observed. Good porosity and permeability. Sample was a wad of sand, no real core shape
29-31 ft	9-in. core, silt, light olive gray (5Y 6/1), through olive gray (5Y 4/1) to olive black (5Y 2/1) depending on degree of dampness of core sample, trace of pebbles, ranging to 15x18x28 mm, angular to subround, and medium to coarse sand, trace of fine to very fine sand. The pebbles and sand are randomly distributed in the silt matrix. No bedding or sedimentary structures
35-37	17-in. core, as above
39-41	14-in. core, as above
45-47	15-in. core, as above
49-51	15-in. core, as above

Log of 73-NFS7B by driller from Giardina and others (undated), p. 46.

4-6 ft	Brown silt clay, few small stones
9-11	Brown silt clay, few small stones
14-16	Gray silt clay, few small stones
19-21	Gray silt clay, few small stones (moist)
34-36	Gray clay silt, few small stones (moist)
39-41	Gray clay silt, few small stones (moist)
44-46	Moist gray clay silt, few small stones
49-51	Moist gray clay silt, few small stones

73-NFS8 Drilled December 4, 1973. Lat 42°26'47", Long 78°38'50". Altitude 1,386 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of split-spoon samples of hole 8 stored at West Valley at Nuclear Fuels Services, Inc. (June 3, 1975).

9-11 ft	4.5-in. core, silt, yellowish gray (5Y 7/2) mottled with grayish orange (10YR 7/4), trace of pebbles, ranging to 8x15x20 mm, angular to subround, and medium to coarse sand, trace of fine to very fine sand
15-17	8.5-in. core, 2.5-in. silt, light gray (N7), otherwise as above; 6-in. silt, light olive gray (5Y 6/1), otherwise as above (pebble to 8x25x40 mm)
19-21	6.5-in. core, silt, light olive gray (5Y 6/1) to olive gray (5Y 4/1), trace of pebbles ranging to 11x21x35 mm, angular to subround, and medium to coarse sand, trace of very fine to fine sand. Sand and pebbles are randomly distributed in the silt matrix. No bedding
25-27	11.5-in. core, as above
35-37	11-in. core, as above
39-41	18-in. core, as above
45-47	14-in. core, as above
49-51	16-in. core, as above

Log of 73-NFS8 by driller from Giardina and others (undated), p. 46.

4-6 ft	Brown silt clay, few small stones
9-11	Brown silt clay, few small stones
14-16	Grayish brown silt clay, few small stones
19-21	Gray silt clay, few small stones
24-26	Gray silt clay, few small stones
29-31	Gray clay silt, few small stones
34-36	Gray clay silt, few small stones
39-41	Gray clay silt, few small stones
44-46	Gray clay silt, few small stones
49-51	Gray clay silt, few small stones

73-NFS9 Drilled December 4, 1973. Lat 42°26'46", Long 78°38'51". Altitude 1,383 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of split-spoon samples stored at West Valley at Nuclear Fuels Services, Inc. (June 3, 1975).

5-7 ft	3-in. core, silt, dark yellowish brown (10YR 4/2) mottled pale yellowish orange (10YR 8/6), and moderate reddish brown (10R 4/6), trace of pebbles, ranging to 10x15x20 mm, angular to subround, and medium to coarse sand, trace fine to very fine sand. Sample contains unaltered organic material (roots or stems)
9-11	5.25-in. core, 2.25-in. silt, light olive gray (5Y6/1), strongly mottled with grayish orange (10YR 7/4), otherwise as above. 3-in. silt, yellowish gray (5Y 7/2), with pinpoint mottling of grayish brown (5YR 3/2), otherwise as above
15-17	13-in. core, 7-in. silt, light olive gray (5Y 5/2) mottled with grayish orange (10YR 7/4) (pebble to 16x18x33 mm), otherwise as above. 6-in. silt, olive gray (5Y 5/1), otherwise as above
19-21	11.5-in. core, silt, light olive gray (5Y 6/1) to olive gray (5Y 4/1), depending on dampness of core sample, trace of pebbles, ranging to 18x30x35 mm, angular to subround, and medium to coarse sand, trace of fine to very fine sand. Pebbles and sand are randomly distributed in silt matrix. No bedding
25-27	13.5-in. core, as above
39-41	10-in. core, as above
	12.5-in. core, as above
	12-in.in. core, as above

Log of 73NFS9 by driller from Giardina and others (undated), p. 47.

4-6 ft	Brown silt clay, fine stones
9-11	Brown silt clay, fine stones (moist)
14-16	Gray silt clay, fine stones (moist)
19-21	Gray clay silt, few fine stones (moist)
24-26	Gray clay silt, fine stones (moist)
29-31	Gray clay silt, fine stones (moist)
31-33	Gray clay silt, few fine stones (moist)
33-35	Gray clay silt, few fine stones (moist)
39-41	Gray silt clay, few fine stones (moist)
44-46	Moist gray clay silt, fine gravel
49-51	Moist gray clay silt, fine gravel

73-NFS10 Drilled December 3, 1973. Lat 42°26'53", Long 78°38'59". Altitude 1,387 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of split-spoon samples of hole 10 stored at West Valley at Nuclear Fuels Services, Inc. (June 3, 1975).

5-7	3.5-in. core, silt, yellowish gray (5Y 7/2) mottled pale yellowish orange (10YR 8/6), trace of pebbles, ranging to 12x30x35 mm, angular to subround, and medium to coarse sand, trace of fine to very fine sand
9-11	4.5-in. core, silt, yellowish gray (5Y 7/2) mottled very pale orange (10YR 8/2) and grayish orange (10YR 7/4), otherwise as above
15-17	4-in. core, 2-in. silt, yellowish gray (5Y 7/2), otherwise as above. 2-in. silt, light olive gray (5Y 6/1), otherwise as above
19-21	6-in. core, silt, light olive gray (5Y 6/1) to olive gray (5Y 4/1 and 5Y 3/1) depending on dampness of core sample, trace of pebbles, ranging up to 12x30x35 mm, angular to subround, and medium to coarse sand, trace of fine to very fine sand. Pebbles and sand are randomly distributed in silt matrix. No bedding
25-27	13.5-in. core, as above
29-31	16-in. core, as above
35-37	16-in. core, as above
39-41	25-in. core, as above
45-47	16.5-in. core, as above
49-51	11-in. core, as above

Log of 73-NFS10 by driller from Giardina and others (undated), p. 47.

4-6 ft	Brown silt clay, few fine stones
9-11	Brown silt clay, few fine stones
14-16	Gray clay silt, few fine stones (moist)
19-21	Gray clay with silt gravel (moist)
24-26	Gray silty gravel, some clay (moist)
29-31	Gray clay silt, few fine stones (moist)
34-36	Gray clay silt, few fine stones (moist)
39-41	Gray clay silt, few fine stones (moist)
44-46	Gray clay silt, few fine stones (moist)
49-51	Gray clay with silt fine gravel (moist)

74-NFS2A Drilled April 2, 1974. Lat 42°26'57", Long 78°39'01". Altitude 1,386 ft. Log from letter report dated April 19, 1974, to Thomas Cashman from Kerman Davis of New York State Dept. of Environmental Conservation.

0-6 ft	Clayey silt, moist gray and brown, mottled with obvious disturbed structure. Firm to soft, moist. Fill material
6-9	Sharp change in color, texture, looks like developed soil zone
9-14.5	Sharp change in character: tough, homogeneous brown silty clay with scattered gravel bits. Weathered
14.5-24	Grey, plastic clay, scattered gravel, occasional buff-colored spot; some pebbles. Unweathered. Bottom at 24 ft

Log of 74-NFS2A by Henry H. Bailey of New York State Geological Survey based on examination of split-spoon samples stored in West Valley at Nuclear Fuels Services, Inc. (June 2, 1975).

0.3-6	Silt, light olive gray (5Y 6/1), olive gray (5Y 4/1) and olive black (5Y 2/1), trace pebbles, up to 8x20x30 mm, angular to subround, and medium to coarse sand, trace of fine to very fine sand, mottled dark yellowish orange (10YR 6/6), carbonized roots (?) to 4.5-6.0 sample
6-24	silt, dark yellowish brown (10YR 4/2) to dusky yellowish brown (10YR 2/2), otherwise as above

Table 3.--Logs of Wells and Test Borings (continued)

74-NFS2B Drilled 1974. Lat 42°26'57", Long 78°39'01". Altitude 1,386 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of shelby-tube samples stored at West Valley at Nuclear Fuels Services, Inc. (June 3, 1975).

4-6 ft	8-in. core, silt, yellowish brown to dark yellowish brown (est. 10YR 5/2), trace pebbles to 15 mm subangular to subround, and medium to coarse sand, trace fine to very fine sand
8-10	13-in. core, silt, light olive gray (5Y 6/1), mottled light yellowish gray (5Y 8/1), otherwise as above
12-14	15-in. core, silt, yellowish gray to light olive gray (est. 5Y 6/2), otherwise as above
14-16	19.5-in. core, silt, light olive gray (5Y 6/1) mottled grayish orange (10YR 7/4) (pebbles to 10x20x25 mm); otherwise as above

74-NFS2C Drilled 1974. Lat 42°26'57", Long 78°39'02". Altitude 1,381 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of shelby-tube samples stored at West Valley at Nuclear Fuels Services, Inc. (June 3, 1975).

4-6 ft	8-in. core, silt, light olive gray (5Y 6/1), trace of pebbles, to 12 mm, and medium to coarse sand, trace fine to very fine sand
8-10	14.5-in. core, 13.5-in. silt, yellowish gray (5Y 7/2), sparsely mottled dark yellowish orange (10YR 6/6), otherwise as above. 1-in. pebbles, ranging to 15x30x35 mm, angular to subround, (60%) in a matrix of silt, as above
14-16	11.75-in. core, silt, light olive gray (5Y 6/1), trace of pebbles, to 20 mm, and medium to coarse sand, trace of fine very fine sand. Randomly distributed "vuglets" ±0.5 mm diam. Surface of "vuglet" wall is dark brown to black with a halo of dark yellowish orange which grades into light olive gray of the matrix. No indication that these "vuglets" or pores are connected to form a permeability system

74-NFS2B Drilled 1974. Lat 42°26'57", Long 78°39'01". Altitude 1,386 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of shelby-tube samples stored at West Valley at Nuclear Fuels Services, Inc. (June 3, 1975).

4-6 ft	8-in. core, silt, yellowish brown to dark yellowish brown (est. 10YR 5/2), trace pebbles to 15 mm subangular to subround, and medium to coarse sand, trace fine to very fine sand
8-10	13-in. core, silt, light olive gray (5Y 6/1), mottled light yellowish gray (5Y 8/1), otherwise as above
12-14	15-in. core, silt, yellowish gray to light olive gray (est. 5Y 6/2), otherwise as above
14-16	19.5-in. core, silt, light olive gray (5Y 6/1) mottled grayish orange (10YR 7/4) (pebbles to 10x20x25 mm); otherwise as above

74-NFS2C Drilled 1974. Lat 42°26'57", Long 78°39'02". Altitude 1,381 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of shelby-tube samples stored at West Valley at Nuclear Fuels Services, Inc. (June 3, 1975).

4-6 ft	8-in. core, silt, light olive gray (5Y 6/1), trace of pebbles, to 12 mm, and medium to coarse sand, trace fine to very fine sand
8-10	14.5-in. core, 13.5-in. silt, yellowish gray (5Y 7/2), sparsely mottled dark yellowish orange (10YR 6/6), otherwise as above. 1-in. pebbles, ranging to 15x30x35 mm, angular to subround, (60%) in a matrix of silt, as above
14-16	11.75-in. core, silt, light olive gray (5Y 6/1), trace of pebbles, to 20 mm, and medium to coarse sand, trace of fine very fine sand. Randomly distributed "vuglets" ±0.5 mm diam. Surface of "vuglet" wall is dark brown to black with a halo of dark yellowish orange which grades into light olive gray of the matrix. No indication that these "vuglets" or pores are connected to form a permeability system

74-NFS2D Drilled 1974. Lat 42°26'58", Long 78°39'02". Altitude 1,377 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of shelby-tube samples stored at West Valley at Nuclear Fuels Services, Inc. (June 3, 1975).

4-6 ft	19-in. core, silt, light olive gray (5Y 6/1), mottled grayish orange (10YR 7/4) and dark yellowish orange (10YR 6/6), trace of pebbles, to 10x26x37 mm, angular to subround, trace of fine to very fine sand
8-10	8-in. core, pebbles, to 30x30x30 mm, angular to subround (80%), in a matrix of yellowish gray (5Y 8/1) silt, randomly mottled dark yellowish orange (10YR 6/6). Pebbles are the most broken ones seen in the samples examined, having appearance of crushed stone used for road metal
12-14	5-in. core, silt, light olive gray (5Y 6/1), mottled dark yellowish orange (10YR 6/6), trace of pebbles, to 15 mm, angular to subround, and medium to coarse sand, trace of fine to very fine sand
14-16	11.5-in. core, silt, pale yellowish brown (10YR 4/2), otherwise as above

Table 3.--Logs of Wells and Test Borings (continued)

74-NFS9A Drilled Apr. 3, 1974. Lat 42°26'46", Long 78°38'51". Altitude 1,383 ft (est.). Log from letter report dated April 19, 1974 to Thomas Cashman from Kernan Davis of New York State Dept. of Environmental Conservation.

0-9 ft	Silty clay, gray and brown, obviously disturbed. Fill material. Some change in character at about 9 ft
9-14	Silty clay, with gravel bits, brown, very fine. Weathered
14-19.5	Silty clay, with gravel bits, pebbles, gray firm. Unweathered
19.5-23	Gravelly, clayey silt and fine sand, damp from 19.5 to 21 ft. Soft clay between 21 and 21.5 ft. Gritty silty clay from 21.5 to 22 ft, and clay with reddish gritty partings to 23 ft.

Log of 74-NFS9A by Henry H. Bailey of New York State Geological Survey based on examination of split-spoon samples in West Valley at Nuclear Fuels Services, Inc. (June 3, 1975).

0.5-6.5 ft	Silt, olive gray (5Y 3/2) to medium olive gray (5Y 4/2), trace of pebbles, to 13 mm, and medium to coarse sand, trace of fine to very fine sand Organic material to 5.0 ft
6.5-14	Silt, dark yellowish brown (10YR 4/2), otherwise as above
14-20	silt, as 0.5 to 6.5 ft

74-NFS9B Drilled 1974. Lat 42°26'46", Long 78°38'51". Altitude 1,383 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of Shelby tube samples stored at West Valley at Nuclear Fuels Services, Inc. (June 3, 1975).

8-10 ft	17-in. core, silt, moderate yellowish brown (10YR 5/4) mottled with light olive gray (5Y 6/1), trace of pebbles, ranging to 7x18x35 mm, angular to subround, and medium to coarse sand, trace of fine to very fine sand
10-15	8-in. core, silt, light olive gray (5Y 6/1), mottled dark yellowish orange (10YR 6/6), otherwise as above
15-17	19-in. core, silt, dark yellowish brown (10YR 5/4) rarely mottled light gray (N7), otherwise as above

74-NFS9C Drilled 1974. Lat 42°26'46", Long 78°38'51". Altitude 1,383 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of Shelby tube samples stored at West Valley at Nuclear Fuels Services, Inc. (June 3, 1975).

8-10 ft	10.5-in. core, 7½-in. silt, intermediate between light olive gray and olive gray (est. 5Y 7/1), trace of pebbles, to 20 mm, subangular to subround, and medium to coarse sand, trace of fine to very fine sand. 3-in. silt, as above mottled dark yellowish orange (10YR 6/6)
12-14	13.5-in. core, silt, light olive gray (5Y 6/1), rarely mottled dark yellowish orange (10YR 6/6) around light brown centers (some pinpoint, others linear) halo of color gradually fades to light olive gray matrix color, otherwise as above
14-16	20-in. core, silt, light olive gray (5Y 6/1) to olive gray (5Y 4/1) depending on dampness of sample, trace of pebbles, ranging to 20x27x30 mm, and medium to coarse sand, trace of fine to very fine sand. Pebbles and sand randomly distributed in the silt matrix. No bedding
18-20	18-in. core, as above

74-NFS9D Drilled 1974. Lat 42°26'46", Long 78°38'51". Altitude 1,382 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of Shelby tube samples stored at West Valley at Nuclear Fuels Services, Inc. (June 3, 1975).

8-10 ft	20.5-in. core, silt, yellowish gray (5Y 7/2), trace of pebbles, to 12 mm, and medium to coarse sand, trace of very fine to fine sand
12-14	10.75-in. core, silt, light olive gray (5Y 6/1) as above (pebbles to 10x15x20 mm)
14-16	16.5-in. core, 14-in. silt, as above. 2.5-in. silt, light olive gray (5Y 6/1) as above with fine and very fine sand making up about 25% of the sample. Core material has a gritty feel, no bedding. Sand dispersed evenly in the silt matrix. No porosity or permeability

74-NFS-12 Drilled 1974. Lat 42°26'53", Long 78°38'59". Altitude 1,387 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of Shelby tube samples stored at West Valley at Nuclear Fuels Services, Inc. (June 2, 1975). Bored into side of trench 5 to a depth of 27 ft.

10-12 ft	18-in. core, silt, light olive gray (5Y6/1) mottled grayish orange (10YR 7/4) to dark yellowish orange (10YR 6/6), trace of pebbles, angular to subround, ranging up to 25x35x45 mm, and medium to coarse sand, trace of fine to very fine sand. No textural change in mottled areas
14-16	21-in. core, silt, intermediate between light olive gray and olive gray (5Y 5/1), otherwise as above
18-18.9	4.75-in. core, silt, light olive gray (5Y 6/1) mottled yellowish gray, otherwise as above
22-24	7-in. core, silt, light olive gray (5Y 6/1) otherwise as above.

Note.--Pebbles and sand in all of above are randomly distributed within the silt matrix. No bedding or sedimentary structures. Samples vary in water content from dry to slightly damp.

Table 3.--Logs of Wells and Test Borings (continued)

74-NFS13 Drilled 1974. Lat 42°26'53", Long 78°38'59". Altitude 1,387 ft (est.). Log by Henry H. Bailey of New York State Geological Survey based on examination of Shelby tube samples stored at West Valley at Nuclear Fuels Services, Inc. (June 3, 1975). Bored under trench 5 to a depth of 50 ft.

12-14 ft	8-in. core, silt, yellowish gray (5Y 7/2) mottled light gray (N7) rare mottling
18-20	18-in. core, silt, olive gray (5Y 5/2) pebbles to 10x35x45 mm, otherwise as above
20-22	13.5-in. core, silt, light olive gray (5Y 5/2) to olive gray (5Y 3/2), pebbles to 14 mm, angular to subangular, otherwise as above
22-24	10-in. core, as above
30-32	12½-in. core, silt, olive gray (5Y 4/1), pebbles to 15x25x30 mm, otherwise as above. This sample contains a bleb of sand, very fine to fine, very friable; porosity and permeability are estimated to be good
32-34	16.5-in. core, 6-in. silt, olive gray (5Y 4/1) mottled light gray (N7), no pebbles, minimal coarse sand, trace of fine to very fine sand. 4.5-in. silt, pale yellowish brown (10YR 6/2) mottled light gray (N7), as above. 1.5-in. silt, olive gray (5Y 4/1) trace of pebbles, to 7 mm, bleb of sand, light gray, fine to very fine grained, clean, very friable, porosity and permeability estimated to be good. Height 20 mm, width 35 mm, and depth 20 mm. 1.5-in. silt, olive gray (5Y 4/1) as 1.5-in. described above, with highly irregular bleb of sand 10 mm thick forming one end of sample. Sand is fine to very fine grained, clean, friable; porosity and permeability are estimated to be good. 3-in. silt as above with highly irregularly shaped bleb of sand as above; height 40 mm, width 20 mm, depth 20 mm
46-48	20.5-in. core, silt, olive gray (5Y 4/1) mottled light gray (N7), trace of pebbles, to 18 mm, angular to subround, and medium to coarse sand, trace of fine to very find sand

74-DMB33 Drilled April 18, 1974. Lat 42°27'03", Long 78°39'23". Altitude 1,419.58 ft. Log from report by Dames and Moore (1975b).

0-15 ft	Brown fine to coarse sand and clayey silt, some fine to coarse gravel (very dense)
15-43	Gray silty clay, trace of fine to coarse sand-hard, grading soft with a little fine to coarse sand
43-52	Gray fine to coarse sand and silty clay, some fine gravel, occasional cobbles (hard)
52-68	Gray silty clay, little fine to medium sand, occasional gravel (very stiff)
68-68.5	Gray shale

74-DMB34 Drilled April 25, 1974. Lat 42°27'02", Long 78°39'23". Altitude 1,424.30 ft. Log from report by Dames and Moore (1975b).

0-22 ft	Brown fine to coarse sand and clayey silt, some fine to coarse gravel (very dense)
22-75	Gray silty clay, with trace of fine gravel and sand (stiff), grading with some fine to coarse sand, trace of fine gravel at 43 ft, grading with little fine gravel and weathered rock fragments
75-80.5	Gray shale with few very fine light blue gray dolometic limestone layers, numerous closely spaced bedding plane partings

74-DMB35 Drilled April 8, 1974. Lat 42°27'00", Long 78°39'21". Altitude 1,418.90 ft. Log from report by Dames and Moore (1975b).

0-18 ft	Brown fine to coarse sand and gravel and clayey silt, some fine to coarse gravel (medium dense)
18-29	Gray fine to coarse sand and silty clay, some fine to coarse gravel (stiff)
29-49	Gray silty clay, some fine to coarse sand, trace of fine gravel (medium stiff)
49-67	Gray fine to coarse gravel and clayey silt, some fine to coarse sand, occasional cobbles (very dense)
67-75	Gray shale with few very fine, light blue-gray dolomitic limestone layers, numerous closely spaced bedding-plane partings

74-DMB36 Drilled May 13, 1974. Lat 42°26'59", Long 78°39'21". Altitude 1,418.90 ft. Log from report by Dames and Moore (1975b).

0-25 ft	Brown fine coarse gravel, some fine to coarse sand, a little clayey silt (medium dense to dense)
25-33	Gray fine to coarse sand, some silty clay, little fine gravel (stiff)
33-43	Gray silty clay, little fine sand, trace of gravel (stiff)
43-60	Gray fine to coarse gravel, some fine to coarse sand, little silty clay (very dense), grading with occasional cobbles
60-67	Gray silty clay, little fine to coarse sand, trace of gravel (hard), grading with frequent cobbles
67-72	Gray weathered shale with light gray dolomitic limestone
72-98	Gray shale with numerous fine layers of light blue-gray dolomitic limestone, numerous bedding-plane partings and several vertical joints

74-DMB37 Drilled April 16, 1974. Lat 42°26'57", Long 78°39'21". Altitude 1,421.30 ft. Log from report by Dames and Moore (1975b).

0-35 ft	Brown fine to coarse gravel, some fine to coarse sand, a little clayey silt (dense), grading to medium dense at 20 ft
35-53	Gray silty clay, trace of fine to coarse sand (soft)
53-59	Gray clayey silt with weathered shale fragments (very dense)
59-84.5	Gray shale and layers of light blue-gray dolomitic limestone, many bedding-plane partings and several high-angle and vertical joints, grading with more vertical joints at 73 ft

74-DMB38 Drilled May 15, 1974. Lat 42°26'56", Long 78°39'25". Altitude 1,434.00 ft. Log from report by Dames and Moore (1975b).

0-8 ft	Brown fine to coarse gravel and clayey silt, little fine to coarse sand (medium dense)
8-20.5	Gray fine to coarse sand and gravel, some silty clay (very dense)

74-DMB39 Drilled April 23, 1974. Lat 42°26'57", Long 78°39'18". Altitude 1,415.10 ft. Log from report by Dames and Moore (1975b).

0-15 ft	Brown fine to coarse gravel and clayey silt, little fine to coarse sand (medium dense)
15-20	Gray silty clay, little fine to coarse sand, trace of fine gravel (stiff)
20-29	Brown fine to coarse sand, some clayey silt, some fine to coarse gravel, grading with trace of gravel at 25 ft
29-53	Gray silty clay, some fine to coarse sand, trace of fine to coarse gravel (soft to medium stiff), grading very stiff at 34 ft

74-DMB40 Drilled May 3, 1974. Lat 42°27'02", Long 78°39'16". Altitude 1,410.00 ft. Log from report by Dames and Moore (1975b).

0-25	Brown fine to coarse sand and clayey silt, some fine to coarse gravel (medium dense to dense)
25-31	Gray silty clay, trace of fine to coarse sand and gravel (stiff)
31-34	Gray fine to coarse sand and silty clay, little fine to coarse gravel (hard)
34-63	Gray silty clay, trace of fine to coarse sand and gravel (stiff), grading to medium stiff at 43 ft with more sand and gravel (stiff at 50 ft)
63-94	Gray fine to coarse gravel and clayey silt, some fine to coarse sand, occasional (very dense), grading with shale fragments at 69 ft
94-113	Gray silty clay, trace of sand and grsvel (very stiff), grading with more sand and gravel at 110 ft
113-122	Gray fine to coarse sand and silty clay, little fine gravel (very dense), grading with cobbles at 120 ft
122-128	Gray clayey silt and fine to coarse gravel and sand, occasional shale fragments (very dense)
128-135	Gray shale and alternating bands of light blue-gray dolomitic limestone, a few bedding plane fractures

74-DMB41 Drilled April 9, 1974. Lat 42°27'00", Long 78°39'26. Altitude 1,432.40 ft. Log from report by Dames and Moore (1975b).

0-10 ft	Brown fine to coarse gravel and clayey silt, some fine to coarse sand (medium dense to dense)
10-15	Gray silty clay, trace of fine to coarse sand and gravel (stiff)
15-20.5	Gray clayey silt, some fine to coarse gravel and sand (very dense)
20.5-36.5	Gray shale with few irregular fine limestone lamination, many bedding plane partings

74-DMB42 Drilled April 3, 1974. Lat 42°27'00", Long 78°39'24". Altitude 1,426.80 ft. Log from report by Dames and Moore (1975b).

0-18 ft	Brown fine to coarse gravel and clayey silt, some fine to coarse sand (dense)
18-50	Gray silty clay, trace to little fine to coarse sand and gravel (medium stiff), grading with some fine to coarse sand (stiff at 23 ft, to medium stiff at 29 ft, and very stiff at 34 ft)
50-53	Gray clayey silt with shale fragments
53-68	Gray shale and light blue gray dolomitic limestone with many bedding-plane fractures and few high-angle fractures

74-DMB43 Drilled April 10, 1974. Lat 42°27'14", Long 78°39'26". Altitude 1,435.50 ft. Log from report by Dames and Moore (1975b).

0-14 ft	Brown fine to coarse gravel and clayey silt, some fine to coarse sand (dense)
14-29	Gray silty clay, little fine to coarse sand, trace of fine gravel (stiff)
29-49	Gray silt and fine to coarse sand, little fine gravel (dense to very dense), grading with shale fragments at 40 ft
49-54	Gray shale and limestone fragments, occasionally cemented with calcium carbonate

74-DMRB1 Drilled October 27, 1974. Lat 42°27'04", Long 78°39'00". Altitude 1,341.40 ft. Log from report by Dames and Moore (1975b).

0-6 ft	Brownish gray, fine to coarse gravel, some silty clay, occasional cobbles (dense)
6-65	Gray silty clay, occasional fine to coarse gravel (stiff to very stiff)
65-91	Gray clayey silt, trace fine sand (stiff to very stiff), gravel from 86-88 ft

91-100.5	Dark gray silty clay (very stiff)
100.5-101.5	Gray clayey silt (stiff)
101.5-110	Gray silty clay, fine gravel (very stiff)
110 - 113	Gray fine to coarse gravel, some fine to coarse sand, little clay (very dense)
113 - 134	Gray silty clay (very stiff)
134 - 151	Dark gray clayey silt (very stiff)
151-151.5	Dark gray silty clay (very stiff)

74-DMRB2 Drilled October 28, 1974. Lat 42°26'59", Long 78°39'02". Altitude 1,336.14 ft. Log from report by Dames and Moore (1975b).

0-1.5 ft	Brownish gray silty clay, frequent roots (medium stiff)
1.5-5	Gray silty clay, trace fine gravel, occasional lenses of fine sand (medium stiff)
5-9	Dark gray fine to medium sand, occasional fine gravel (medium dense)
9-57	Gray silty clay, trace fine to coarse gravel, occasional cobbles (stiff to very stiff)
57-70	Brownish gray fine sand, little silt (dense)
70-71	Brownish gray fine to medium sand, trace silt (very dense)
71-74	Brownish gray fine gravel, some fine to medium sand (dense)
74-89	Gray clayey silt (stiff)
89-94	Gray fine to coarse gravel, little clay, trace silt, occasional fine to coarse sand (very dense)
94-101	Gray silty clay, occasional fine to coarse gravel (very stiff)

74-DMRB3 Drilled October 29, 1974. Lat 42°27'03", Long 78°39'03". Altitude 1,328.08 ft. Log from report by Dames and Moore (1975b).

1-6 ft	Gray silty clay, trace fine gravel, occasional fibrous material
6-9	Gravel layer, 3-in cobbles in wash
9-75	Gray silty clay, trace of embedded fine to medium gravel (medium stiff to stiff), grading less stiff at 65 ft
75-94	Brownish gray fine sand, some silt (very dense)
94-100.5	Gray fine to coarse angular gravel, little silt, trace clay, trace fine to coarse sand (very dense)

74-DMRB4 Drilled October 30, 1974. Lat 42°27'00", Long 78°39'03". Altitude 1,362.20 ft. Log from report by Dames and Moore (1975b).

1-3 ft	Brownish gray fine to coarse gravel, some clay, occasional fine to coarse sand (very dense)
3-35	Gray silty clay, trace fine to medium gravel (stiff to very stiff)
35-36.5	Gray fine to coarse gravel, some silty clay, and fine occasionally with pockets of fine to medium sand (very dense)
36.5-41	Gray silty clay, trace fine to medium gravel (very stiff)
41-42.5	Gray fine sand, little silt (medium dense)
42.5-69	Gray silty clay, trace fine to medium gravel (very dense)
69-71	Gray fine to medium sand, some clay, occasional fine gravel (dense)
71-101.5	Gray silty clay, trace fine gravel, occasional lenses of fine sand (very stiff)

74-DMRB5 Drilled October 31, 1974. Lat 42°27'01", Long 78°39'01". Altitude 1,359.90 ft. Log from report by Dames and Moore (1975b).

0-98 ft	Gray silty clay, trace fine to coarse gravel, occasional cobbles (stiff to very stiff), grading less stiff at 84 ft
98-102	Brownish gray fine sand, some silty (very dense), trace of gravel

74-DMRB7 Drilled November 1, 1974. Lat 42°27'00", Long 78°39'02". Altitude 1,382.78 ft. Log from report by Dames and Moore (1975b).

0-1.5 ft	Brown fine to coarse gravel, little silt, frequent fine to medium sand (very dense)
1.5-5	Brown clayey silt, little fine to coarse gravel, trace of sand (very stiff)
5-67	Gray silty clay, trace fine to medium gravel (very stiff), grading with frequent gravel at 29 ft, with occasional cobbles at 50 ft, with less gravel at 58 ft
67-69	Drilling indicates gravel pocket
69-72	Gray clayey silt, trace of fine sand

74-DMTP1 Completed November 8, 1974. Lat 42°27'00", Long 78°39'03". Altitude 1,360 ft (est.). Log from report by Dames and Moore (1975b).

0-11 ft	Brownish gray silty clay, trace of to fine coarse gravel, frequent roots and fibrous material
11-12	Brownish gray and gray-brown silty clay, occasional orange-brown patches, little coarse to fine gravel, occasional cobbles

74-DMTP2 Completed November 8, 1974. Lat 42°26'58", Long 78°39'02". Altitude 1,365 ft (est.). Log from report by Dames and Moore (1975b).

0-3.5 ft	Brownish gray silty clay, occasional sandy zones, little coarse to fine gravel, occasional roots, some brown patches from 1 to 2 ft, cobbles at 2 ft
3.5-9	Brownish gray silty clay, trace of embedded fine gravel, occasional roots.

74-DMTP3 Completed November 8, 1974. Lat 42°27'01", Long 78°38'58". Altitude 1,380 ft (est.). Log from report by Dames and Moore (1975b).

0-3 ft	Yellowish brown, grading brown, silty clay, trace of sand
3-9	Brownish gray silty clay, trace of embedded fine to coarse gravel

Table 3.--Logs of Wells and Test Borings (continued)

74-DMTP4 Completed November 8, 1974. Lat 42°26'57", Long 78°39'06". Altitude 1,365 ft (est.). Log from report by Dames and Moore (1975b).

0-8.5 ft Brownish gray silty clay, trace of fine to coarse gravel, some brown staining.

74-DMTP5 Completed November 8, 1974. Lat 42°26'55", Long 78°39'04". Altitude 1,355 ft (est.). Log from report by Dames and Moore (1975b).

0-2 ft Brown silty clay, trace sand, a little gravel, occasional roots
2-8 Brownish gray silty clay, trace of embedded coarse to fine gravel

74-DMTP6 Completed November 8, 1974. Lat 42°26'53", Long 78°39'09". Altitide 1,365 ft (est.). Log from report by Dames and Moore (1975b).

0-2.5 ft Brown silty clay, trace sand, trace of fine gravel (considerable amount of gravel and cobbles in top 1 ft)
2.5-9 Brownish gray silty clay, trace of embedded coarse to fine gravel

75-ESIB1 Drilled August 20, 1975. Lat 42°26'58", Long 78°39'48". Altitude 1530 ft. (est). Log from report by Empire Soils Investigation, Inc., (1975).

0-0.33 ft Topsoil
0.33-5 Brown sand and silt, trace of embedded gravel (moist)
5-20 Brown silt, trace of sand and embedded gravel (moist, firm), grades color change to gray (moist, firm) at 10 ft, gray silt and sand, trace of embedded gravel (moist, compact) at 15 ft, and some embedded gravel (moist, very compact) at 18 ft

75-ESIB2 Drilled August 20, 1975. Lat 42°26'35", Long 78°39'43". Altitude 1,710 ft. (est.). Log from report by Empire Soils Investigation, Inc., (1975).

0-0.33 ft Topsoil
0.33-10.5 Brown silt, trace fine sand and fine gravel (dry), grades to a little sand, little embedded gravel (moist, very compact) at 5 ft, with weathered rock (moist, very compact) at 10 ft

75-ESIB3 Drilled August 20, 1975. Lat 42°26'35", Long 78°39'43". Altitude 1,710 ft. (est.). Log from report by Empire Soils Investigation, Inc., (1975).

0-0.42 ft Topsoil
0.42-8 Brown silt, some fine sand, trace of embedded gravel (dry), grades to little sand (dry, firm) at 5 ft
8-10.5 Gray weathered rock, a little silt (dry, compact)

75-ESIB4 Drilled August 20, 1975. Lat 42°26'35", Long 78°39'43". Altitude 1,710 ft. (est.). Log from report by Empire Soils Investigation, Inc., (1975).

0-0.42 ft Topsoil
0.42-7.5 Brown silt, some fine sand, trace of embedded gravel, grades trace sand, some embedded gravel and fragments (moist, very compact)
7.5-10.5 Gray weathered rock, little silt (dry, very compact)

75-ESIB5 Drilled August 20, 1975. Lat 42°26'35", Long 78°39'43". Altitude 1,710 ft. (est.). Log from report by Empire Soils Investigation, Inc., (1975).

0-0.42 ft Topsoil
0.42-8.0 Brown silt, some fine sand, trace of embedded gravel (dry), grades to trace of sand, little embedded gravel and fragments (dry, very compact) at 5 ft
8-8.8 Gray weathered rock, some silt (dry, very compact)

75-USGSA Drilled October 1-2, 1975. Lat 42°26'57", Long 78°38'59". Altitude 1,380.10 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-1 ft Drilled; no core taken
1-3 Shelby tube; not examined
3-5.5 Cored; no recovery; cuttings are brown to gray till (backfill)
5.5-7.2 Backfill: dark yellowish brown (10RY4/2) irregularly mottled with yellowish brown (10YR5/4) calcareous, very fine grained, pebbly, clayey silt. Pebbles to 12 mm are 5-10% of core. Zones of medium gray, N5, to grayish orange (10YR7/4) coarse silt are less than 5% of core. Roots are few
7.2-7.5 Backfill: as above, mottled with grayish black (N2) clay with a strong organic odor. Some roots but not common
7.5-7.7 Soil Zone: brownish black (5YR2/1) humus with numerous roots and stems of brown grass; strong odor
7.7-7.8 Soil Zone: mottled light olive gray (5Y6/1) and brownish black (5YR2/1) clayey silt, highly organic with a strong odor; also some moderate yellowish brown (10YR5/4) streaks. Pebbles to 3 mm are less than 2% of core; roots are greater than 10% of core; one twig more than 50 mm long
7.8-11 Till: oxidized, yellowish brown to yellowish orange except light olive gray at top; many woody roots; no core samples recovered
11-14 Silt: oxidized, with some very fine or fine sand; no core samples recovered
14-15.5 Till: oxidized, medium to dark yellowish brown (10YR4/2) calcareous, very fine grained, pebbly, clayey silt with pebbles to 30 mm forming 5-10% of core. Fracture plane is lined with medium gray (N5) near 14 ft. Core grades to a medium olive gray (N5-5Y5/1) near 15.5 ft. No bedding apparent
15.5-16.5 Cored; no recovery

16.5-20.8 Till: unoxidized, medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt with pebbles to 50 mm forming 5-10% of core. No bedding or fractures apparent

20.8-21.0 Lacustrine: unoxidized, medium olive gray (N5-5Y5/1) calcareous, very fine grained, clayey silt with light gray, N7, thin, wispy beds of coarse silt to fine sand. Cobble, 80 mm, at 21 ft

21.0-27.0 Cored; no recovery

27.0-30.0 Till: as above 20.8 ft, pebbles to 1 cm form 5-10% of core

30.0-32.0 Cored; no recovery

75-USGSA2 Drilled October 2-3, 1975. Lat 42°26'57", Long 78°38'59". Altitude 1,380.10 ft. Log from U.S. Geological Survey study of low-level radioactive waste-burial trenches.

0-1 ft Drilled; no sample collected

1-3 Shelby tube, not examined

3-6.9 Backfill: oxidized, chaotic mottling of a dark yellowish brown (10YR4/2) and a medium olive gray (N5-5Y5/1) calcareous, very fine gained, pebbly, clayey, silty till, with irregular globs of moderate yellowish brown (10YR5/4) silty clay, and pale yellowish brown (10YR6/2) sandy silt. Pebbles to 25 mm form 10-15% of core

6.9-7.2 Topsoil: grayish black (N2) odoriferous, organic clay streaked with medium olive gray (N5-5Y5/1) and pale yellowish brown (10YR6/2) clayey silt. Fractures are subvertical, medium gray (N5) at center, changing abruptly to a dark yellowish orange (10YR6/6) outward. Roots are common, particularly in the gray fracture zones

7.2-9.7 Till: oxidized, yellowish gray (5Y7/2) calcareous, very fine grained, pebbly, clayey silt gradually changing at depth to a moderate yellowish brown (10YR5/4). Pebbles to 1 cm form about 2% of core. Fracture zones are about 1 cm wide and subvertical having an inner zone of medium gray (N5) 5 mm wide, rimmed with dark yellowish orange (10YR6/6). Roots are common, particularly in the gray fracture zones. Inclusions of dusky red (5R3/4) sand blebs and very pale orange (10YR8/2). Silty sand blebs common below 9 ft

9.7-9.9 Sand: oxidized dry, moderate yellowish brown (10YR5/4) well rounded, uniformly fine grained, calcareous, silty sand. Subvertical fracture zones of medium gray (N5) about 5 mm wide, are enclosed by a dark yellowish orange (10YR6/6) rim. Roots common in gray fracture zones

9.9-10.9 Sand: as above, with moderate yellowish brown (10YR5/4) thin pebbly zone between sand and subvertical contact with oxidized till. Subvertical, roughly cylindrical reduced zones of medium gray (N5) are surrounded by oxidized rims of a dark yellowish orange (10YR6/6). Roots visible within the reduced zones

75-USGSA2 (continued)

10.9-14.9 Sand: oxidized, wet, moderate yellowish brown (10YR5/4) well rounded, uniformly fine grained, calcareous, silty sand, with grayish orange pink (10YR7/2) wispy beds of clay, less than 5 mm thick. Subvertical cylindrical zones of medium gray (N5) enclosed by a dark yellowish orange (10YR6/6) with roots in the gray zone, 10.9 to 14.3 ft. Brownish black (5YR2/1) blebs (manganese oxide?) scattered in the sand. Bed of pebbly sand at 14.3 ft to 14.4 ft, with pebbles to 1 cm forming 40-60% of unit

14.9-15.2 Till: oxidized, mottled dark yellowish brown (10YR4/2) and medium olive gray (N5-5Y5/1) pebbly, clayey silt, with pebbles to 25 mm forming 5-10% of core

15.2-15.8 Till: oxidized, dark yellowish brown (10YR4/2) calcareous, very fine grained pebbly clayey silt, pebbles to 1 cm form about 5% of till; interbedded with a moderate yellowish brown (10YR5/4) clayey, silty, pebbly sand with pebbles to 1 cm that form 40-60% of the unit. Rims of a dark yellowish orange (10YR6/6) common around pebbles in till

15.8-16.7 Lacustrine: silt with subordinate very fine sand, saturated, oxidized dark yellowish orange (10YR5/6) to 16.1 ft, medium olive gray (5YR5/1) below. A few deformed dipping clay layers 3 mm thick; widely scattered pebbles forming about 2% of core

16.7-16.8 Lacustrine: brownish-gray (5YR4/1) coarse sand, very silty, with discontinuous layers of gray clay; dips at an angle to core

16-8-17.0 Till: unoxidized, medium olive gray (N5-5Y5/1) pebbly, clayey silt, pebbles form 10-15% of core

17.0-17.1 Lacustrine: unoxidized, fine to very fine sand, silty to clean, with subordinate deformed beds and masses of silt. Bed is 0.1 thick and dips at angle to core from 16.9 to 17.2 ft

17.1-24.1 Till: unoxidized, medium olive gray (N5-5Y4-5/1) pebbly, clayey silt, firm. Pebbles form 10-15% of core at top, 5% below 19 ft. Weakly oxidized light olive gray (5Y5/2) zones 3 mm wide along fractures at 17-18 ft. Parallel and intersecting subvertical fractures at 18.5-20.5 ft, no tendency for core to separate along them. Thin wispy beds of light gray (N7) coarse silt formin less than 5% of core, from 20.5 to 20.8 ft and 22.6 to 22.7 ft

75-USGSA2 (continued)

24.1-24.5 Till: as above with thin wispy beds of light gray (N7) sandy silt forming 30-35% of core

24.5-35.1 Till: unoxidized, moist, plastic, medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt with pebbles to 38 mm forming about 5% of core. Fractures visible as nearly vertical lines when core is torn. No bedding or oxidation

75-USGSB: Drilled September 3-5, 1975. Lat 42°26'58", Long 78°39'01". Altitude 1,374.70 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-5 ft Backfill: All or mostly till, samples not fully examined. At 1 ft, mottled yellowish brown to olive gray (10YR5/2-5Y4/1) pebbly clayey silt; white blebs along irregular planes

5.0-5.5 Backfill: Olive gray (5Y4/1) pebbly clayey silt, grading to pebbly sand silt, calcareous; pebbles exceed 25% of core, many larger than 50 mm (dry)

5.5-6.8 Backfill: (retarted till): Brownish olive gray (5Y-5YR4/5 N4) pebbly clayey very fine silt, calcareous; pebbles 5-10% of core (damp)

6.8-7.3 Soil?: Mottled olive gray (5Y4/1) light olive gray (5Y7/1) and dark yellowish orange (10YR6/6) sparsely pebbly, clayey silt, non-calcareous, moist, and plastic. Numerous black clayey flecks or short streaks, short dimension (vertical) less than 2 mm, presumably organic, chiefly at 6.8 to 7.0 and 7.3 to 7.4 ft; also numerous white root hairs and rare black root or stem fragments. Sample has organic odor when fresh, H_2S odor when treated with HCl1 after 4 months storage in glass jar, most exposed surfaces oxidized to grayish red (10YR4/2) or moderate yellowish brown (5YR-10YR4/4). Pebbles form about 5% of core, some parts pebble free; dark yellowish orange parts are sandy pebbly coarse silt

75-USGSB (continued)

7.3-9.0 Till?: Mostly clayey fine-sandy pebbly silt, mottled moderate to dark yellowish brown (10YR4/2-5/4) with subordinate gray (N5-6) occuring as thin layers along an irregular network of fractures (?) and bordering some pebbles; non-calcareous; white root hairs in gray zones above 8 ft; nearly dry. At 8.3 ft, a layer of very silty granule to fine, 5-10 mm thick. At 8.5 ft, a mass 20x10x5 mm of dusky brown (5YR2/2) sandy silt, color probably iron oxide; numerous small masses of iron oxide elsewhere, especially in gravelly layer. Pebbles form 15-25% of core

9.0-12.0± Gravel: Mostly a clayey sand very silty gravel, mostly olive gray (5Y4/1-5/2) mottled with (10YR5/4-6/2) and strongly oxidized areas of dark yellowish orange (10YR6/6) noncalcareous or very weakly calcareous, small masses of dusky brown iron oxide near 9 ft. Pebbles form 40-80% of core, mostly subangular, many larger than 4 cm, some oxidized. Pore space visible in a few places amid jumbled openwork gravel and coarse sand
At 9.8 ft, a layer of silty gravelly coarse sand 25 mm thick. From 10.6 to 10.8 ft, interbedded silt and very fine to coarse silt, dark yellowish brown to olive gray (10YR-5Y5/2) in vertical layers. Core is saturated below about 9.8 ft. (Unit is interpreted to be collapsed late-glacial glacialfluvial sediment.)

12.0±-20.5 Till: Medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt. Pebbles 2-10 mm form about 10 percent of core. Nearly vertical, oxidized, light yellowish brown (10YR5/4) planar zones approximately 5 mm thick with indistinct boundaries and no visible fracture planes are common at 12.7 to 14.3 ft. Brown root fibres within some of the oxidized zones. Minor blebs of light yellowish brown (10YR5/4) scattered from 12.8 to 14.3 ft

20.8-28.5 Till: Medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt. Pebbles to 50 mm form about 5% of core. No bedding

75-USGSB (continued)

28.5-30.4 Lacustrine: Medium olive gray (N5-5Y5/1) calcareous, very fine grained, clayey silt almost devoid of pebbles. Numerous very thin wispy beds of coarse silt

30-4-33.3 Till: Medium olive gray (N5-5Y5/1) calcareous, pebbly, clayey silt with pebbles to 50 mm form about 5% of core. No bedding

33.3-34.7 Lacustrine: Medium olive gray (N5-5Y5/1) calcareous, very fine grained, clayey silt almost devoid of pebbles. Numerous very thin wispy beds of coarse silt.

34.7-36.0 Till: as before 33.3 ft with pebbles to 20 mm forming less than 5% of core from 34.7 to 35.0 ft, and greater than 10% below 35.0 ft

36.0-36.2 Sand: Medium olive gray (N5-5Y5/1) to light brown (5YR6/4) well sorted, coarse grained silty sand, not saturated

36.2-46.5 Till: Medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt with pebbles to 40 mm forming about 10% of core. No bedding

78-USGSB2: Drilled July 10-12, 1978. Lat 42°26'58", Long 78°30'01". Altitude 1,376.78 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

Table 3.--Logs of Wells and Test Borings (continued)

0.0-3.9 ft Backfill: Light yellow-brown oxidized till; very dry and powdery (cuttings from auger)
3.9-8.4 Backfill?: Mottled yellow brown, brown and bright yellow orange oxidized silt-clay till, 10-15% pebbles and stones, some root tubes. Lower 0.4 ft more stony with about 10% light-gray silt
8.4-17.0 Oxidized till: Dark yellowish brown (10YR 4/2) mottled to a moderate yellowish brown (10YR 5/4) silt-clay till with no large pebbles. The whole sample is shot through with a vague gray reticulate network (perhaps formed along cracks but no tendency to separate along the cracks noted). One striking gray fracture with root hairs and Mn-staining between 10.0 and 10.5 ft. Moist below 14.5 ft
17.0-19.0 Unoxidized till: Gray (N4) to brownish gray (5YR 4/1) silt-clay till mottled with 5-10% dark yellowish orange (10YR 5/6). Moist, plastic and normally pebbly (about 10% pebbles)

78-USGSB2 (continued)
19.0-26.8 Unoxidized till: Olive gray (5Y4/1) silt-clay till with pebbles forming about 10% of core. No mess beds or oxidation noted. Water entered hole after casing was advanced to 27 ft and cleaned out. Water level immediately after cleanout was 18.35 ft below land surface
26.8-27.5+ No sample
27.5-27.6 Sand: Fine to medium sand, a little silt, and a few coarser grains
27.6-27.7 Gravel: Openwork granular gravel
27.7-27.9 Gravel: Loose silty granular gravel
27.9-28.2 Gravel: Very silty granule-pebble gravel
28.2-28.7 No sample
28.7-29.0 Gravel: Silty coarse gravel (pebble fragments, some fill spoon)
29.0-29.2 Gravel: Dense silty greenish gray (5GY 4/1) to olive gray (5Y 4/1) pebble-granular gravel. Several well-rounded small pebbles; firm
29.2-30.3 Gravel: Loose silty fine-pebble gravel
30.0-31.2 No sample
31.2-31.5 Gravel: Very silty granule gravel with small pebbles. Mostly sticky but in part incoherent. Est. 80% granules and pebbles
31.5-31.9 Gravel?: Very silty small pebble gravel; est. 50% stones. One massive layer near top is mostly silt. Sample may be till
31.9-42.2 Unoxidized till: Olive gray (5Y 4/1) clay-rich till with normal pebble content (5-10%). Plastic and traces of wispy coarse silt layers from 31.9 to 32.2 ft and 32.4 to 34.7 ft. Small blob of coarse silt at 37.0 ft and several streaks of reddish gray (5R 4/2?) sandy silt, 1 to 4 mm thick, none crossing the core at 41.6 ft.

75-USGSC: Drilled September 8-9, 1975. Lat 42°26'57", Long 78°39'01". Altitude 1,375.00 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-3 ft Backfill: (no recovery or not examined)
3-3.2 Backfill: pebbly silty till, dry
3.2-3.7 Backfill: pebbly silty clay, light olive gray (5Y6/1) coarse silt, loose silt with subordinate coarse sand; all with contorted bedding, dry
3.7-4.7 Backfill: olive gray silt till, moist, plastic, predominantly unoxidized, no voids or fractures. Parting of light gray (N5-5Y-5YR5/1) coarse silt at 3.9 ft, wavy limonitic band at 4.3 ft
4.7-5.4 Backfill: silt, mottled light olive gray to olive gray to olive black (5Y6/1-4/1-2/1) damp; partings of matted grass near top, many tiny white root hairs below, strong organic odor
5.4-6.0 Lacustrine?: silt or clayey silt, rare pebbles, light olive gray 5Y6/1 near top, mottled with dark yellowish orange (10YR6/5) below, the gray forming a fine reticulated network whose planes are not planes of weakness; sandy parting near base
6.0-7.3 Till: pebbly clayey silt, oxidized dark yellowish brown (10YR4/3-4) pebbles form about 10% of core; fractures have 1-cm spacing at top, become less numerous with depth, are followed by white rootlets; bordered by thin light olive-gray (5Y6/1) zones and form planes of weakness
7.3-8.2 Till: as above, calcareous, no reduced fractures; strongly oxidized (10YR6/6) discontinuous silt parting and rotted calcareous pebble; very pale orange (10YR8/2) film on irregularly distributed surfaces, not otherwise recognized, highly calcareous, probably $CaCO_3$
8.3-9.9 Till: like that above 8.2 ft; numerous fracture planes coated with calcareous film and bordered by light-gray reduced zone; also root tubes enveloped by light-gray reduced zone; also manganese films on fractures from 9.5 to 9.9 ft
9.9-25.0 No recovery, non-water-yielding; plastic below about 12 ft, unoxidized till at 16 ft

Table 3.--Logs of Wells and Test Borings (continued)

75-USGSC2 Drilled September 11-16, 1975. Lat 42°26'57", Long 78°39'01". Altitude 1,378.50 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-8 ft	No core; see log of nearby hole C. Fine roots in wall of hole 0-5± ft; cobble at 4± ft
8-8.6	Till: oxidized, dark yellowish brown (10YR4/2) pebbly clayey silt, compact and moist. Pebbles to 1 cm form 2-3% of core, includes grayish brown to dusky brown (5YR3-2/2) shale. No fractures
8.6-8.7	Sand: dark yellowish brown (10YR3/2) poorly sorted, fine to medium sand; saturated
8.7-9.5	Till: as above 8.6 ft; some blebs 1 mm diam. of dark yellowish orange (10YR6/6) with shale chips, also slight suggestions of vertical fractures
9.5-12.0	Till: as above 8.6 ft; pebbles to 3 cm from 5-7% of core, include vein quartz and dusky brown (5YR 2/2-1) shale. No fractures
12.0-18.0	No core recovery, pushed stone; cuttings include a few unoxidized till fragments at 14.5 ft, all unoxidized at 18 ft
18.0-20.0	Till: unoxidized, brownish gray (5YR4/1) pebbly, clayey silt, moist, plastic, and coherent. Pebbles to 1.5 cm form 5-7% of core, include medium-dark gray (N3) shale; 1 mm red shale chips at 18.5 to 19 ft. No fractures or bedding
20.0-22.5	Till: as above, except pebbles generally 2-3% of core. Very pebbly till at 20.8 to 20.9 ft, pebbles form 35% of core. Equidimensional mass of granules to coarse sand, 25 mm diam. at 21.9 ft
22.5-25.0	Till: as above, except pebbles form about 7% of core
25.0-25.5	Till: as above, except pebbles form less than 2% of core, and till is somewhat more plastic and moist
25.5-28.0	Till: as above, but less moist and plastic; pebbles generally form about 5% of core, maximum size 10 cm; unusually pebbly at 25.5 to 25.8 ft; very sandy, pebbly, and nonplastic at 27.2 to 27.4 ft
28.0-30.7	Till: brownish olive gray (N5-5YR-5Y4/1) slightly sandy, pebbly silt, slightly clayey and slightly plastic below 29.3 ft. Pebbles form 8-10% of core, maximum size 7 cm; sand is fine to very fine and may form 5% of core at 28 to 29.3 ft. Abundant faint traces of disturbed bedding at 28 to 29 ft; a few tiny discontinuous partings of coarse silt at 29.8 to 30 ft
30.7-36.0	Till: pebbly clayey silt, moist and plastic; very soft and plastic at 35 to 36 ft. Small amount of water in hole after drilling 30 to 32 ft, probably drilling water as core seems poorly permeable. Several pebbles larger than 5 cm, including limestone, quartzite, metamorphic rock
36.0-37.5	Till: as above, but firmer and less plastic; pebbles forming about 5% of core; two blebs of fine sand, each about 2x5x10 mm, at 37.1 ft
37.5-40.5	Till: as above, except pebbles form generally less than 5% of core; sandy, pebbly, silty, non-clayey and non-plastic layer at 38.4 to 38.5 ft
40.5-45.0	Till: olive-gray (5Y4/1) pebbly, clayey silt, firm, plastic, pebbles form 5-10% of core
45.0-50.0	Till: as above but probably softer and less pebbly

75-USGSD: Drilled September 17-18, 1975. Lat 42°26'54", Long 78°38'59". Altitude 1,381.20 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-3 ft	Backfill: not examined
3-4.3	Backfill: pebbly silty clayey till, pebbles form about 15% of core; alternating variably oxidized subhorizontal bands of moderate to dark yellowish-brown (10YR5/4-4/1); firm and relatively dry above 3.5 ft, moist and plastic below; black streaks below 4 ft due to organic matter and fragments of rubberized cloth
4.3-4.5	Backfill: silty granule-pebble gravel, very moist but unsaturated, moderate yellowish-brown (10YR4/4) except black near fragments of rubberized cloth
4.5-8	No core recovery, non-water yielding, probably backfill
8-8.2	Backfill: dark yellowish-brown (10YR4/2) coarse sand to granules, silty and somewhat clayey, soft, moderately coherent, saturated, has strong odor
8.2-8.6	Backfill: sand, as above; with chunks of silty-clayey till, dusky yellowish-brown (10YR-5YR3/2) calcareous, containing root hairs, and increasing in abundance downward; has strong odor
8.6-9.5	Till: oxidized dark yellowish-brown (10YR3-4/2) pebbly clayey silt, calcareous, soft and plastic at top, firm at base; pebbles form 5-10% of core. Many small fractures, bordered by light-gray zone 1 mm wide; core breaks along more numerous intersecting hairline cracks lacking chemical alteration
9.5-13	No core recovery, probably till; includes pebbles to 8 cm diam. Note: only 1.5 ft of core was recovered from 8 to 13 ft; the most logical reason is that this core came from the top 1.5 ft of the interval, as described above, but some drilling information suggests the core might represent an interval as deep as 9 to 10.5 ft
13-16.5	Till: unoxidized olive-gray (N4-5Y-5YR4/1) pebbly clayey silt; firm, plastic; pebbles form 5-10 % of core above 14.5 ft, about 15% below

16.5-21.3 Till: as above but soft, more moist and plastic; pebbles form 35% of core near 17 ft, 5-10% below. Subvertical fracture at 18 ft; core does not separate along fracture

21.3-23.2 Till: unoxidized olive gray (N5-5YR-5Y5/1) pebbly clayey silt, plastic; pebbles form about 10% of core. Contorted or wispy thin beds or partings of very fine sand and of silt to very fine sand with scattered coarser sand, highly calcareous, light gray, mostly light-colored grains, not saturated, forming about 20% of core at top, decreasing to 1% below 22.5 ft

23.2-24.6 Till: as above; no distinct silt or sand beds, but some very faint wispy streaks about 1 mm thick, forming indistinct boundaries, may be slightly coarser or sandier than bulk of till

24.6-26.6 Till: medium olive-gray (5Y5/1) pebbly clayey silt; pebbles form 10-25% of core. Several contorted beds of very fine sand and of silt, thickness abruptly irregular from wispy partings to 4 mm, damp but not saturated; very pale orange (10YR8/2); sand has about 50% light colored grains.

26.6-29.5 Till: medium olive-gray pebbly clayey silt, pebbles form 10-15% of core; firm at top, becoming soft and plastic at base; a few wispy silt partings plus a small mass of sandy stony silt at 28 to 28.5 ft.

29.5-31.5 Lacustrine: nearly 50% olive-gray (N5-5Y5/1) clayey silt with few or no pebbles; interbedded with variety of steeply dipping and contorted layers: one layer of medium to very fine sand 0.2 ft thick at about 30.5 ft, saturated; light-gray coarse silt or silt to very fine sand; brownish-gray (5YR4/1) pebbly silty fine sand with scattered coarser sand, cohesive; olive-gray (N5-5Y4/1) fine-pebbly sand silt, unstratified, firm and nonplastic

31.5-34.3 Till: olive-gray pebbly clayey silt, soft and plastic; pebbles form less than 5% of core; a small mass of nonplastic pebbly sandy silt (till?) at 32.4 ft

34.3-40 No core recover, pushed stone; cobble at 39 ft

40.0-41.1 Till: medium olive-gray (5Y5/1) slightly clayey silt; pebbles, mostly smaller than 10 mm, form 10-20% of core

41.1-43.4 Till: as above, with wispy partings of light olive-gray silt and medium-light olive gray (5Y5/2) sandy silt. At about 41.5 ft a wavy layer of silty very fine sand with scattered coarser sand, highly calcareous, 1 cm thick, loose and somewhat dry; at 42.3 ft a layer of clayey pebbly silty coarse sand

43.4-45 Till: soft and plastic, not examined

45.0-47.2 Till: olive-gray, somewhat pebbly-clayey silt, soft, very plastic; pebbles form less than 5% of core. A discontinuous contorted layer of light-gray silty very fine sand 2-5 mm thick at 46.8 ft

47.2-52.4 Till: as above, soft and plastic, becoming firm and plastic below 50 ft; unusually pebbly (15-20% of core) above 48.4 ft, normally pebbly (5-10%) below

75-USGSD2 Drilled September 19, 1975. Lat 42°26'54", long 78°38'59". Altitude 1,381 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-4 ft No core recovery; cuttings are brown till 0-2 ft grading (?) to damp gray till 3-4 ft with black streaks near 4 ft

4.0-4.7 Backfill: dark yellowish brown (10YR4/2) pebbly, clayey silt with blotches of pale yellowish orange, (10YR8/6) sand silt. Pebbles greater than 20 mm common. Near 4.7 ft, chaotic mottling of light bluish gray (5B7/1) light brown (5YR5/6) medium gray (N5) and rusty red pebbly, clayey silt. Pebbles about 5 mm commonly surrounded by a rusty red oxidized rim. Core is dry and crumbly

4.7-8.3 Till: oxidized, moderate brown (5YR4/4) calcareous, fine grained, pebbly, clayey silt with blebs of a pale yellowish-orange (10YR8/6) oxidized zones around sand grains or concretions (?). Pebbles to 10 mm form 10-15% of core. Numerous near-vertical fractures rimmed with a medium gray (N5) form a fishnet pattern when viewed in a horizontal section; spacing increasing with depth. Calcite and white roots are common along fracture planes. Near 5.3 ft is a zone of dark gray (N3) pebbles that form 25-30% of core. From 6.5 to 8.3 ft, the core is sandier

8.3-9.0 No core recovery

9.0-9.7 Till: oxidized, dark yellowish brown (10YR4/4) calcareous, fine grained, pebbly, clayey silt. Pebbles to 10 mm form 10-15% of core. Fractures are less common and becoming indistinct. Oxidized rims of dark yellowish orange, (10YR6/6) encase root traces

9.7-10.0 Till: as above, with pebbles to 30 mm forming about 25% of core. Silt has become noticeably coarser

10.0-10.4 Till: unoxidized, medium olive gray (N5-5Y5/1) sandy pebbly silt, with pebbles to 10 mm form about 15% of core. Oxidized dark yellowish orange (10YR6/6) rims encase root traces. Other oxidized zones of dark yellowish orange (10YR6/6) and pale yellowish brown (10YR6/2) of unknown origin

10.4-10.6 Sand: unoxidized, medium olive gray, (N5-5Y5/1) clayey, pebbly, silty sand, saturated but not readily water-yielding. Pebbles about 5 mm form 20-25% of interval

10.6-12.0 No core recovery

75-USGSE: Drilled September 9-10, 1975. Lat 42°26'55", Long 78°39'00". Altitude 1,380.70 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-4.4 ft	Backfill: till, silty-clayey, chiefly unoxidized (N6-5Y6/1), numerous irregular oxidized (10YR4/4) blebs and streaks, rare black partings near base. Dry from 0 to 3.3 ft, moist and plastic below
4.4-4.7	Backfill: sand, very coarse, perfectly sorted, dips at angle to core
4.7-7.1	Backfill: sand, fine to very fine, and silt; olive-gray (5Y3-4/1); weakly calcareous; subordinate masses of olive-gray (5Y4/1) silt, (5Y2/1) organic silt, and soft black (N2) organic matter; a few pebbles, numerous plant stems and other fragments of organic matter; fragment of polyethylene at 5 ft. Core saturated below 5.6 ft, perhaps also above; strong odor of decay
7.1-7.3	Backfill: gravel, sand and very silty, cohesive, highly oxidized, moderate yellowish-brown (10YR5/5); one streak of silty clay; saturated
7.3-7.9	No recovery
9.0-9.5	Till: oxidized, generally dark-yellowish-brown (10YR4/2) with brighter subhorizontal streaks, pebbly clayey silt, plastic. Core breaks easily into chunks along hairline fractures, no alteration of fracture surfaces
9.5-10.5	Till: in part as above, about 30% is unoxidized till, soft and plastic. One branched fracture, steeply dipping; central fracture surface is lined with iron oxide, paper thin; bordering oxidized zone several mm thick is much harder than unoxidized parent material
10.5-12.2	Till: unoxidized, olive-gray (N5-5Y5/1) pebbly, clayey silt, soft and plastic. Several dark-brown root tubes, each surrounded by a moderate yellowish-brown oxidized zone 3-4 mm diam. thick, that is harder than unoxidized till
12.2-19	Till: unoxidized, olive-gray pebbly clayey silt, soft and plastic, pebble content about 15% near top, 5-10% near base. Subvertical fracture at 18 to 19 ft, no oxidation, core will not separate along fracture
19.0-21.1	Till: as above, very soft.
21.1-23.1	Till: unoxidized, olive-gray (N5-5Y5/1) clayey silt, sparsely pebbly. Traces of very light gray coarse silt, occurring as discontinuous partings, tiny blebs, and irregular masses. At 21.2 ft, a layer 1 cm thick, dipping at 20°, and mostly coarse silt enveloping a lens of clayey silt containing abundant very coarse sand, damp
23.1-23.3	Lacustrine: sand, fine to very fine, saturated
23.2-23.3	Lacustrine: silt, coarse, interbedded with silty very fine sand; dips at 20° subparallel to sand above
23.3-24.2	Lacustrine: clay, silty with horizontal partings and scattered blebs of coarse silt. Numerous intersecting subvertical fractures noted on one parting
24.2-25.0	Till: olive-gray (5Y5/1) calcareous pebbly clayey silt. Most pebbles smaller than 5 mm, irregular to tabular, mostly medium gray (NY) to greenish gray (5GY4/1) some reddish siltstone; no oxidation rims. A few irregular partings of coarse silt, medium to very light olive gray, (5Y3-4/1)
25.0-29.0	No recover, apparently till
29.0-31.3	Till: pebbly clayey silt; pebble content 10-15%, increasing to 15-20% at base; no bedding. Pebbles chiefly medium gray (N5) noncalcareous shale or siltstone, no reaction rims
31.3-32.0	Till: as above but less pebbly; traces of deformed discontinuous wispy partings of coarse silt
32.0-34.0	Till: as above, pebble content 10-20%.
34.0-36.0	Shelby tube - not examined
36.0-38.8	Till: medium olive gray (5Y5/1) calcareous, very fine grained, pebbly, clayey silt with pebbles 1 to 10 mm forming around 5-10% of core. Some stones larger than 20 mm, mainly a greenish gray (5GY5/1) silt or clay stone. No apparent bedding or fractures
38.8-38.9	Till: wet, medium olive gray (N5-5Y5/1) calcareous, coarse, pebbly, clayey silt to fine sand; pebbles up to 15 mm form about 20% of the core. Some discontinuous wispy bedded silt to sand
38.9-45.2	Till: medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt with pebbles to 10 mm forming 5-10% of core. Some stones reach 20 mm but are not common. Small sandy bleb about 12 mm in diam. at 42.5 ft
45.2-45.3	Sand: dark brownish gray (5YR3/1) coarse, silty sand to a fine gravel with a matrix olive gray (N5-5Y5/1) clayey silt. Grains are irregular with sharp edges, and flat in one dimension. Grains 3-8 mm becoming finer and more uniform near 45.3 ft before contact with till below
45.3-47.3	Till: medium olive gray (N5-5Y5/1) calcareous, very fine, grained, pebbly, clayey silt with pebbles to 10 mm forming about 5-10% or core. No bedding

75-USGSE2 Drilled October 16, 1975. Lat 42°26'55", Long 78°39'00". Design location: 12 ft westerly from hole E, measured on a line perpendicular to the trenches. Altitude 1380.00 ft. Log from U.S. Geological Survey study of low-level radioactive waste burial trenches.

0-3.8 ft	No core, probably backfilled till.
3.8-4.8	Backfill: Heterogenous material, mostly silty sand gravel near 3.8 and 4.8 ft, mixed with and separated by chunks of very dark yellowish brown (10YR3/2) silty material containing roots, probably weathered till. Distinct odor of decay.

4.8-5.9 Till: mostly oxidized, moderate yellowish brown (10YR5/4) pebbly clayey silt, with network of fractures bordered by gray reduced zones. From 4.9 to 5.1 ft, and at about 5.6 ft, part of core is reduced to olive gray (5Y5/1) with black color along fracture network and a distinct odor. Two small chunks of dark brown silty clay with angular boundaries, below 5.5 ft

5.9-6.7 Till: oxidized, moderate yellowish brown (10YR5/4) pebbly clayey silt, with traces of manganese or iron oxide films; prominent branching vertical fractures bordered by reduced zone

6.7-7.0 Till: oxidized, dark yellowish brown (10YR5/4) pebbly clayey silt; discontinuous parting of very fine sand at top

7.0-7.7 Till: as above, prominent vertical fractures, bordered by 1 mm gray N5 reduced zone in places, elsewhere lined with dark dendritic films of manganese or iron oxides; one pebble bordered by strongly oxidized dark yellowish orange (10YR6/6) rim

75-USGSG Drilled October 14-15, 1975. Lat 42°26'53", Long 78°39'00". Altitude 1,372.03 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-1 ft Drilled, no recovery

1-3 Shelby tube - not examined

3-5.5 Till: dry, oxidized, moderate yellowish brown (10YR5/4) calcareous, very fine grained, pebbly, clayey silt; pebbles to 50 mm form about 5% of core. Oxidized rims of a dark yellowish orange (10YR6/6) around some pebbles. Weathering of pebbles is common, usually degrading to a lighter tone than the parent pebble. Fractures are fairly common and form an irregular fishnet pattern, bordered by a zone about 3 mm wide of medium gray (N5). No signs of oxidation or manganese coating along fractures

5.5-6.8 Till: dry, oxidized, grading to dark yellowish brown (10YR4/2) calcareous, very fine grained, pebbly, clayey silt, with pebbles to 50 mm forming about 5% of core. Fractures are coated with a thin oxidized layer, yellowish orange (10YR6/6) marked by strongly oxidized pits

6.8-8.8 Till: dry, mostly unoxidized, grading to brownish gray (5YR4/1) calcareous, very fine grained, pebbly, clayey silt. Pebbles to 25 mm form about 5% of core. Fractures coated with a thin oxidized layer, yellowish brown (10YR5/4) have a somewhat pitted texture

8.8-10.8 Till: dry, unoxidized, brownish gray (5YR4/1) calcareous, very fine grained, pebbly, clayey silt. Pebbles to 25 mm form about 5% of core. Fractures are less abundant and less distinctly oxidized. A few pebbles have oxidized rims

10.8-11.5 Till: as above, no oxidation or fractures; pebbles form about 10% of core; wispy beds of a pinkish gray (5YR8/1) coarse silt 1 mm thick form 5-10% of core

11.5-12.4 Till: as above, pebble content about 5% of core; only traces of wispy beds of coarse silt

12.4-12.6 Till: as above, with pinkish gray (5YR8/1) thin, wispy beds of coarse silt dipping at 45° and forming 30-40% of core

7.7-8.8 Till: oxidized, dark yellowish brown (10YR4/2) pebbly silty clay; with strongly oxidized root tubes and microfractures, some of which have films of iron-manganese oxides; some fractures bordered by thin gray (N5) reduced zones

8.8-10.0 Till: in part oxidized as above, mottled with unoxidized olive gray (5Y4/1) increasing in abundance downward. Several root tubes, each with very thin gray reduced inner rim bordered by strongly oxidized cylindrical zone; also other areas of strong oxidization, not obvious fractures, origin uncertain. At 9.3 ft, a vertical fracture, no sign of chemical alteration, no tendency for core to separate

10.0-10.9 Till: unoxidized, olive gray (N5-5Y4/1) pebbly, clayey silt; firm and plastic. Pebbles form 5-10% of core. A few root tubes, thin gray inner lining bordered by strongly oxidized zone, dark yellowish orange (10YR6/6) distinctly firmer than surrounding till

75-USGSF Drilled October 13-14, 1975. Lat 42°26'53", Long 78°38'58". Altitude 1,382.9 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-1 ft No core

1-3 Shelby tube - not examined

3-7 Till: oxidized, dark yellowish brown (10YR5/4) calcareous, very fine grained, pebbly, clayey silt; pebbles 3-6mm form 5-10% of core; fractures at 45° with strongly oxidized rims of grayish orange (10YR7/4); green shale pebbles deteriorate to a light greenish gray (5GY8/1) silt

7-9.9 Till: as above, with 90% of core a dark yellowish brown (10YR5/4) and 10% a medium olive gray (N5-5Y5/1). Manganese oxide dendrites on some near-planar fracture surfaces

9.9-10.1 Till: as above, with contorted lenses of dark yellowish orange (10YR6/6) coarse silt. Irregular abrupt contact with unoxidized till below

10.1-26.4+ Till: unoxidized, medium olive gray, (N5-5YR-5Y5/1) calcareous, very fine grained, pebbly, clayey silt; pebbles 3 to 6 mm form about 5% of core; no fractures visible; wet and moldable

Sand: wet, deformed, lenticular, well sorted, granule sand 3 mm thick dipping at 45°. Separates till from mess-bedded unit below

26.4-28.2 Lacustrine: olive gray (5Y5/1) very fine-grained clayey silt, with very thin mess-bedded yellowish gray (5Y8/1) coarse silt blebs; deformed layer of very fine sand about 1 mm thick at 26.75 ft.

28.2-28.3 Sand: wet, deformed, granule sand dipping at 45°

28.3-33.0 Till: unoxidized, medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt. Pebbles to 12 mm form approx. 5% of core

33.0-35.0 Core collected: not examined

35.0-37.5 Till: unoxidized, medium olive gray (N5-5Y5/1) pebbly clayey silt. Pebbles larger than 2 mm form about 10% of core. Bleb of dark clay, 4 mm diam., at 36 ft; parting 15 mm in diam. and scattered 1 mm blebs, all silt to very fine sand at 37.4 ft. No fractures

37.5-44.0 Till: as above, pebbles form about 5% of core, soft and plastic; one thin coherent sandy silt lens 15 mm in diam. at 43.7 ft.

44.0-46.0 Till: as above, pebbles form 5-8% of core; firm and plastic

46.0-48.3 Till: as above, rsre 1-mm blebs and discontinous dipping layers of coarse silt, 1-4 mm thick, forming less than 1% of core. Several subvertical fractures at 48 ft, no oxidation; core can be pulled apart preferentially along fractures

48.3-51.0 Till: as above, about 5% pebbles, no fractures apparent, no silt blebs or layers

51.0-53.3 Till: as above; blebs and discontinuous layers of coarse silt, generally rare but form about 5% of core at 52 ft; no fractures; several pebbles, maximum diam. 4 cm at 52 to 52.3 ft

12.6-13.2 Till: as above, moist, interbedded with brownish gray (5YR4/1) highly calcareous, thin, mess-bedded, clayey, pebbly, silty sand dipping at 45°, with pebbles to 12 mm. Sandy material forms 30-40% of core

13.2-13.3 Till: as above, moist, with pinkish gray (5YR8/1) highly calcareous, wispy beds of coarse silt dipping steeply form 5-10% of core

13.3-14.6 Till: moist, brownish gray (5YR4/1) grading downward to medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt with pebbles to 25 mm form about 5% of core. No wispy beds of silt

14.6-15.7 Till: as above, very moist; with light gray (N7) to pinkish gray (5YR8/1) thin, wispy beds, coarse silt, forming 5-10% of core. At 15.3 ft to 15.4 ft, a mass of silty sand with one pebble to 25 mm on one side of core grades into nearly horizontal thin beds of coarse silt

15.7-21.6 Till: unoxidized, medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt with pebbles to 50 mm forming about 5% of core. No bedding or fractures. Plastic, apparently saturated below 18 ft. At 19.7 ft, a moderate yellowish-brown (10YR5/4) fine sand is thinly laminated around a greenish stone

21.6-24.9 Till: as above, pebbles form less than 5% of core; discontinuous wispy beds 1 mm thick of pinkish gray (5YR8/1) coarse silt forming less than 1% of core, absent below 24.2 ft

24.9-25.1 Till: brownish gray (5YR4/1) calcareous, medium grained, clayey, silty, pebbly sand, with pebbles to 18 mm forming 10-15% of core. Layer is nearly horizontal

25.1-25.8 Till: medium olive-gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt with pebbles forming 10-15% of core; interbedded with numerous discontinuous beds 3-6 mm thick of brownish gray (5YR4/1) silty sand, that form 40-50% of core

25.8-26.3 Till: brownish gray (5YR4/1) saturated, poorly sorted, clayey pebbly silty sand with pebbles forming about 15% of core; about 50 mm thick, dips at 25°, contains small chunks of the underlying clay-silt till near the contact

26.3-34.0 Till: saturated, plastic, medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt with pebbles to 25 mm forming 3-5% of core. No bedding or fractures

34.0-38.4 Lacustrine: saturated, medium olive gray (N5-5Y5/1) clayey silt or silty clay, mostly void of pebbles. Numerous pinkish gray (5YR8/1) to light gray (N7) very thin, wispy beds of coarse silt. Basal contact is nearly horizontal but irregular, slopes in all directions. An irregular, nearly vertical contact with pebbly clayey silty till on one side of core from 37.2 ft to 38.1 ft

38.4-38.9 Till: like that above 34 ft but firm, not plastic

38.9-43.0 Till: as above, pebbles to 25 mm forming 5-8% of core, firm, not plastic, no mess beds or fractures

75-UGSGI Drilled September 25, 30, 1975. Lat 42°26'58", Long 78°38'57". Altitude 1382.3 ft. Log from U.S. Geological Survey study of low-level radioactive-wsste burial trenches.

0-1 ft Drilled; no sample collected

1-3 Shelby tube - not examined

3-5.6 Backfill: oxidized, dry, firm, chaotic mottling of medium olive gray (N5-5Y5/1) and moderate yellowish brown (10YR5/4) cobbly, pebbly, clayey silt with zones of a bedded brownish black (5YR2/1) odoriferous, organic clay. Pebbles and cobbles form more than 15% of core. Fracture patterns visible; white roots common along the fracture

5.6-7.0 Till: oxidized, dry, moderate yellowish brown (10YR5/4) calcareous, very fine grained, pebbly, clayey silt. Pebbles forming at least 10% of core. Fractures of medium gray (N5) with calcite precipitated along the fracture plane. Distinct roots are less common. No organic material such as above

7.0-10.5 Cored; no sample recovered

10.5-12.0 Till: as above, gradual color change to a medium olive gray (N5-5Y5/1). Oxidation around pebbles becoming more noticeable near 12 ft

12.0-14.0 Till: unoxidized, dry, firm, medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt with pebbles to 25 mm forming less than 10% of core. Moderate yellowish-brown (10YR5/4) rims are distinct around pebbles. Planar subvertical fracture traces are observed when sample is torn and intersect at angles of about 60° and 120°

14.0-15.0 Cored; no sample recovered.

15.0-16.5 Till: as above, no fracture traces

16.5-17.3 Till: as above, with pebbles to 15 mm forming about 5% of core. Numerous, very thin, wispy zones of a light-gray (N7) coarse silt forming 15-20% of core

17.3-17.4 Sand: moist, light gray (N7) pebbly silty sand with blackish equidimensional pebbles 1-2 mm in diam.

17.4-18.5 Till: as above, pebble content about 5% of core. Very thin, wispy beds of a light gray (N7) coarse silt forming 5-10% of core

18.5-19.0 Lacustrine: unoxidized, wet, medium olive gray, calcareous, very fine grained, clayey silt almost pebble free. Numerous thin wispy beds about 1 mm thick, light gray (N7) coarse silt to a fine sand forming 40-50% of core

19.0-20.0 Till: unoxidized, moist, medium olive gray (N5-5Y5/1) clayey, pebbly silt, with pebbles to 10 mm forming 40-50% of interval. No bedding

20.0-23.5 Till: as above, pebbles forming about 5% of core. Core becoming wetter and more plastic

23.5-24.0 Cored: no sample recovered

24.0-26.7 Till: as above, pebbles forming about 5% of core and thin wispy bedded, light gray (N7) coarse silt forming less than 5% of interval

26.7-27.2 Till: as above, pebbles to 10 mm common, forming 25-30% of core, also sandier

27.2-29.0 Till: as above, with pebbles to 10 mm forming about 5% of core. Wispy, thin bedded, light gray (N7) coarse silts forming about 10% of core or less. Rusty zones near wispy beds to 27.7 ft

29.0-35.3 No recovery, pushed stone and drilled out; partly in till, one stone 8x5x4 cm

35.3-35.9 Lacustrine: dipping subparallel layers, include loose silty very fine to fine sand (0.2 ft, saturated), clay or silty clay, silt, and coarse silt to very fine sand

35.9-36.8 Lacustrine(?): Silty clay, rare scattered pebbles and coarse sand; contorted discontinuous partings of coarse silt to very fine sand are numerous but less than 5% of core

36.8-43.3 Till: olive-gray to brownish-olive-gray (N5-5Y-5YR4/1) pebbly clayey silt, firm, plastic, pebbles form about 10% of core, largest 6x4.5x2 cm. Chunks of gray (N4) clay, largest is 5x5x10 mm at 42 ft

43.3-43.8 Till: as above, but crudely stratified; contorted layers, faintly defined by slight color differences

43.8-44.3 Till: as above 43 ft, with blebs less than 1 mm diam. and discontinuous partings of light gray (N7) coarse silt uniformly distributed but forming less than 1% of core

44.3-45.8 Till: as above 43 ft

45.8-46.5 Till: as above 43 ft, with numerous partings of coarse silt to very fine sand at about 46 ft and a few below

46.5-48.0 Till: olive-gray pebbly clayey silt, firm, plastic; pebbles form 5-10% of core. Masses and thin subhorizontal streaks of pebbly fine sandy silt (till?), not warped, indistinct contacts with clayey silty till, form 5-10% of core

48.0-51.2 Till: as above, below 49 ft, includes tiny blebs and streaks of light-gray coarse silt to very fine sand and streaks 1-3 mm thick of sandier till (?)

75-USGSI2 Drilled October 1, 1975. Lat 42°20'55, Long 78°38'58". Altitude 1382.3 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-30 ft No samples. See log of well 1.

30.0-32.0 Till: unoxidized olive-gray (N5-5YR-5Y4/1) pebbly clayey silt, firm, plastic; pebbles form 10-15% of core

32.0-34.3 Till: as above but pebbles form only about 5%. Poorly defined streaks of sandy silt till at 34 ft; contorted layers of pale-brown (5YR4/2) silty fine sand about 2 mm thick at 32.8 ft and 34.2 ft

34.3-34.7 Till: as above; light gray (N7) coarse silt present as tiny blebs and deformed lenses 2-10 mm thick

34.7-36.5 Till: olive-gray, somewhat pebbly clayey silt, firm, plastic; pebbles form about 3% of core; rare tiny blebs of light-gray coarse silt. Possible thin lens of very fine sand at 35 ft; lens of bimodal very coarse sand and silt 5 mm thick at 35.1 ft; mass of coarse silt at 35.8 ft

36.5-38.0 Till: as above 32 ft

75-USGSI3 Drilled October 17-18, 1975. Lat 42°20'55", Long 78°38'58". Altitude 1382.8 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-5 ft	No core samples; mostly till backfill
5-5.4	Backfill and disturbed soil: chaotic mixture of light brownish-gray (5YR6/1) and dark yellowish-brown (10YR4/2) silt, dark yellowish-orange (10YR5/6) very fine sand, dusky grayish brown (N2-5YR2/1) organic silt, and numerous pebbles to 35 mm diam. including red (10R3/4) fractured fine sandstone; mostly noncalcareous; some fine white root hairs
5.4-5.6	Lacustrine: silt or clayey silt, noncalcareous, light-olive gray (5Y6/1) to yellowish gray (5Y7/2) to dusky yellow (5Y6/4) vague horizontal banding; discontinuous brownish-black zone at base. A wedge of similar material extends 0.1 ft deeper (frost wedge?)
5.6-5.7	Lacustrine: silt, as above, more strongly oxidized
5.7-6.5±	Gravel: silty sandy gravel, noncalcareous, colors from grayish red (5R4/2) to greenish gray (5G6/1); pebbles form 40% of core. At about 6.4 ft, a layer 5 mm thick of dark yellowish-brown (10YR4/2) silty clay, weakly calcareous, dipping at angle to core, underlain by 5 mm of calcareous silty sandy gravel
6.5±-8.3	Till: Pebbly clayey silt, calcareous, firm, oxidized moderate yellowish-brown (10YR4-5/2) pebbles form about 10% of core. Rare thin gray streaks, origin uncertain, some contain traces of roots. White carbonate widely distributed as linings of tubes less than 1 mm diam. and as irregular shapes; no traces of roots. More sand, less clay at 7-7.3 ft
8.3-10.7	Till: as above; microfractures (intersecting planes, each about 1 cm), some with dusky brown films (iron oxide?) on surfaces, some bordered by thin gray zones of which a few contain roots; core does not break consistently along microfractures. Horizontal zone of numerous microfractures with strongly oxidized rims, light orange-brown (10YR-5YR5/6) and many flecks of dusky brown (iron oxide?), at 9-9.1 ft; some strongly oxidized mottling at 9.1-10.5 ft
10.7-11.5	Till: pebbly clayey silt, firm; pebbles form about 10% of core; mottled oxidized moderate yellowish-brown (10YR4/2) and unoxidized olive gray (5Y4/1) indistinct boundaries, less oxidized with depth. Numerous root tubes having a very thin gray inner lining surrounded by a strongly oxidized zone a few mm thick, outer margins indistinct
11.5-14.5	Till: as above, all unoxidized olive gray (5Y4/1) except for strongly oxidized zones bordering root tubes, which are narrower than above; tubes still have very thin gray inner lining, become less numerous with depth; more moisture than above
14.5-15.0	Till: as above, entirely unoxidized
15.0-20.6	No core samples, non-water-yielding.
20.5-21.5	Till: pebbly, clayey silt, firm and plastic, olive gray (N5-5Y5/1); pebbles form about 5% of core
21.5-22.7	Till: as above, pebbles form about 3%, blebs or discontinous thin wispy beds of sandy silt or light-gray coarse silt, increasing to form 1-2% of core near base
22.7-23.1	Lacustrine: silty clay, rare pebbles (1% of core); blebs and discontinuous wispy beds of coarse silt or fine-sandy silt, increasing to 30% of core near base; silt is generally light gray, one bleb grayish red
23.1-23.7	Lacustrine: interbedded coarse silt, silty very fine sand, clean very fine sand, and clayey silt (in order of decreasing abundance), in slightly deformed horizontal layers, saturated
23.7-24.5	Lacustrine: clayey silt with minor interbedded silt at 23.7-23.85 ft, then interbedded silt, silty clay, coarse silt, and fine to very fine sand (in order of decreasing abundance), in wispy interfingering lenses generally 1-5 mm thick; two pebbles noted; damp but not obviously saturated. One dipping layer of coarse silt 1 cm thick is continuous across core
24.5-25.4	Lacustrine: silty clay, with numeroua tiny wispy interfingering beds of silt forming 5-10% of core; vertical contact with till near 25 ft, bleb of dark gray clay at 25.1 ft; layer of coarse silt 2-5 mm thick dipping 45° near 25.3 ft; rare pebbles near 25.4 ft
25.4-25.7	Till: pebbly clayey silt, firm and plastic, pebble content 3-5%.

75-USGSJ Drilled September 22-25, 1975. Lat 42°26'57", Long 78°38'50". Altitude 1375.8 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-7 ft	Till: slightly calcareous, very fine-grained pebbly clayey silt; forming about 2%, around carbonate pebbles, is oxidized to (10YR6/4) and clayey silt; highly calcareous
7.8-8.3	Till: as above, with very coarse silt in thin mess beds partly oxidized to (10RY6/6) slightly damp. Pebbles to 30 mm forming approx. 10% of core
8.3-27.0	Till: medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt; pebbles to 6 mm form approx. 5% of core. No mess beds, no oxidation. Occasional hairline fractures at 8.3 to 11 ft, some intersecting at 60°, no color change or evidence of water movement
27.0-49.0	No samples; water-yielding at 31 to 32 ft, perhaps also at 32 to 35 ft; may include fine sand layers

49.0-59.7 Till: medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt; pebbles 3-6 mm form 2-5% of core; soft and plastic. No bedding, no silt layers, no fractures
59.7-59.9 Sand: deformed pebbly fine sand, approx. 30% pebbles
59.9-80.0 Till: as above 59.7 ft, pebbles form 2-5% of core; no core samples below 75 ft
80.0-97.0 Till: as above, with increased clay content
97.0-103. Till: as above, pebbles form approx. 10% of core
103-124 Sand?: sharp granule sand with angular pebbles at 103 to 105 ft, pebbly medium to fine sand below; silty, perhaps in part silty till; variably water yielding
124-130 Till: as above 103 ft but with numerous large cobbles. Hole caved to 123 ft after completion of drilling

75-USGSK Drilled August 12-19, 1975. Lat 42°26'45", Long 78°39'00". Altitude 1,385.90 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-4 ft Till: pebbly fine silt, slightly calcareous, pebbles form about 5% of core, including soft rotten green shale blebs; no bedding; principally pale yellowish-brown (10YR6/2) mottled to nearly 50% with unoxidized bluish or greenish gray (5B-5G6/1-N6); oxidized reaction rims (10YR6/6-7/4) as thick as 1 mm around limestone grains, harder than nearby silt
4.0-7.0 Till: as above, but 90-100% oxidized to pale yellowish brown (10YR6/2); vertical fractures are lined by gray N5 or bluish-gray (5B6/1-N6) silt about 5 mm wide, which is bordered in turn by strongly oxidized silt (10YR6/6)
7.0-8.2 Till: as above but mostly gray N5, about 30% oxidized; (10YR6/2) jointing readily visible
8.2-10. Till: pebbly fine silt, gray (N5) unoxidized except for dark yellowish-orange envelopes around root tubes, decreasing in abundance with depth; no discernible joints; pebbles form about 5% of core, includes soft green shale (5GY8/1)
10.0-15.0 No recovery; probably till more pebbly than above
15.0-20.1 Till: pebbly silt, gray (N5) slightly calcareous; pebbles form 5-10% of core, includes unaltered gray-green shale
20.1-20.2 Sand: medium to coarse, pebbly, saturated
20.2-20.8 Lacustrine: olive gray (5Y5/1) fine silt, yellowish gray (5Y8/1) silt, subordinate fine to medium sand; in torn and deformed beds or stringers commonly 1 mm thick, dipping at 35°
20.8-21.3 Till: olive gray (5Y5/1) pebbly, fine silt; no bedding, pebbles form less than 5% of core
21.3-22.5 Lacustrine: olive gray (5Y5/1) fine silt, with deformed wispy blebs of yellowish-gray (5Y8/1) silt; no pebbles
22.5-25.0 No core; cuttings at 23 to 25 ft are mostly till (soft silt containing pebbles and coarse sand)
25.0-33.0 Till: olive gray (5Y5/1) calcareous, pebbly, fine silt; no bedding; pebbles as large as 25 mm; no core recovered from 27.5 to 32.5 ft
33.0-35.0 Till: as above, with deformed wispy beds of fine sand and yellowish gray (5Y8/1) coarse silt; pebbles form 5% of core
35.0-35.5 Till: olive-gray (5Y5/1) sandy, pebbly, fine silt, no silt or sand beds, pebbles form about 20% of core
35.5-36.5 Till: as above, contains more sand and pebbles than typical till, also blebs and deformed discontinuous beds of fine sand and silt; lens of pebble-free clayey silt at 36 to 36.5+ ft, vertical contact with till
36.5-50.0 Till: like that above 33 ft; no silt or sand beds, except possibly (?) a thin water-yielding sandy layer at about 37.5 ft (no core at 37.5 to 40 ft); cobble (gray-green quartz siltstone) at 41 ft, otherwise pebble content about 5%

75-USGSL: Drilled August 25-28, 1975. Lat 42°26'48", Long 78°38'57". Altitude 1,380.00 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-4.5 ft No core samples, cuttings are oxidized till, generally near moderate-yellowish-brown (10YR4/4) traces of gray (near base?), calcareous
4.5-4.8 Till: slightly clayey, pebbly silt, calcareous, irregularly mottled oxidized dark yellowish-brown (10YR4/2) and unoxidized olive gray (5YR4/1)
4.8-8.8 Till: slightly clayey pebbly silt, calcareous, moderately plastic, mostly unoxidized olive-gray (N5-5YR4-5/1); vertical branching fractures, with traces of iron-manganese oxide films, and root tubes, all bordered by oxidized zones about 5 mm wide (10YR4/4) to (near base) (5Y-10YR5/6); one vertical planar oxidized zone at 6.5 ft, 5-10 mm wide, no fracture recognized. Pebbles form about 10% of core, random puddingstone distribution; traces of very thin sandy partings at 7.2 to 7.8 ft
8.8-13.1 No core samples; cuttings are gray till
13.1-13.7 Lacustrine: olive gray (N5-5Y5/1) clayey silt and silt, perhaps interbedded with till; some pebbles to 25 mm
13.7-14.7 Lacustrine: coarse silt with traces of very fine sand and about 25% coarse to very coarse sand and granules; poorly coherent; bedding highly deformed in detail; at 14 ft a crude layering (including lens of till) dips at 75°

Table 3.--Logs of Wells and Test Borings (continued)

75-USGSL (continued)

14.7–16.2± Lacustrine: interbedded coarse silt, fine or clayey silt, sandy silt (20-30% medium to very coarse sand), and pebbly clayey silt (till?), in order of decreasing abundance; mostly as lenses and deformed wispy beds; base is a continuous layer of coarse silt dipping at 45°

16.3±–16.7± Till: olive gray (N5-5Y5/1) pebbly clayey fine silt, calcareous, firm, coherent, and plastic; pebbles form 3-5% of core

16.7±17.5 Lacustrine: interbedded olive-gray fine or clayey silt and light yellowish-gray (5Y8/1) coarse silt with some very fine sand; generally in thin highly deformed beds, some coarse silt beds 5 mm thick; a few pebbles, a few rose blebs of fine silt

17.5-20.0 No core samples, non-water yielding

20.0-27.5 Till: olive gray (N5-5Y5/1) pebbly, clayey fine silt; pebbles generally smaller than 5 mm and forming 5-10% of core. At 24.5 ft, a deformed bed 1 mm thick of yellowish-gray (5Y8/1) coarse silt, dip 15°

27.5-30.0 No core samples, non-water yielding

30.0-31.0 Till: as above, soft

31.0-37.5 No core samples, cuttings are clayey till

37.5-38.9 Till: olive gray (N5-5Y4/1) slightly clayey, pebbly silt; pebbles form about 15% of core

38.9-39.5 Till: brownish olive gray (N5-5YR-5Y4/1) pebbly clayey silt, plastic; pebbles form 5-10% of core

39.5-40.5 No core samples

40.5-44.8 Till: as above, traces of deformed silt beds at 40.5 to 41.2 ft

44.8-45.0 Lacustrine: interbedded silty clay and coarse silt, deformed bedding.

45.0-45.5 Till: like that at about 39 ft

75-USGSM Drilled October 7-10, 1975. Lat 42°26'49", Long 78°38'54". Altitude 1,386.30 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-10 ft No core samples; cuttings indicate oxidized till 8 to 10 ft

10.0-10.8 Till: oxidized, dark yellowish brown, (10YR4/2) calcareous, very fine grained, pebbly clayey silt; pebbles to 25 mm form about 5% of core; very firm. Strongly oxidized envelope, dark yellowish orange (10YR6/6) 0.5 mm thick surrounding some pebbles. Abundant planar subvertical fractures; central fracture surfaces are marked by root traces, coated with a non-calcareous brownish black (5YR2/1) stain (manganese oxide?) and bordered by oxidized zones of dark yellowish orange, (10YR6/6) grading outward to the parent color

10.8-15.6 Till: medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt; pebbles to 25 mm form 5% of core. Oxidized envelopes of dark yellowish orange (10YR/6) around pebbles, decreasing in abundance with depth, absent below 13 ft. Fractures, subvertical, having a fishnet pattern in horizontal section are bordered by a zone of dark yellowish-brown (10YR4/2) to a depth of approximately 14 ft; calcite deposited in center of fracture from 13.8 ft to approximately 14 ft, unoxidized fracture at 14.5 ft. No bedding

15.6-23.0 No core samples; probably till

23.0-24.3 Till: unoxidized, medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt. Pebbles to 25 mm form 5-10% of core. No fractures or bedding apparent

24.3-24.5 Till: as above; with distorted, wispy beds 3 mm thick of light-gray (N-7) silty sand to sandy silt forming about 10% of core

24.5-33.0 Till: unoxidized, medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt; with pebbles to 25 mm forming 5-10% of core. No bedding or fractures apparent. Till is more wet and plastic than that above

33.0-36.0 Till: as above, with wispy beds about 1 mm thick of light-gray (N7) silt, increasing from traces near 33 ft to about 5% of core near 36 ft; no core recovery, pushed stones at 33.8 to 35.5 ft; stones to 70 mm form about 10% of core

36.0-37.0 Till: medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt, with pebbles to 48 mm form 5-10% of core. No bedding

37.0-38.9 Till: as above, with medium gray (N7) silt in 1-mm thick wispy, discontinuous beds forming less than 1% of core

38.9-39.7 Till: as above, with wispy silt beds 20% (at 38.9 to 39.1 ft) to 10% of core. Pebbles to 6 mm are more common near the silt beds

39.7-40.7 Samples not examined

40.7-41.0 Lacustrine: medium to light gray (N7) silt in wispy beds approximately 2 mm thick, forming 50-60% of core; interbedded with medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly clayey, silt, very soft and plastic, saturated; pebbles to 18 mm forming less than 5% of core. No bedding

43.2-43.9 Till: as above, with light gray (N7) thin wispy beds of silt to silty sand forming 2-5% of core

43.9-44.3 Till: medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt; pebbles to 12 mm forming 2-3% of core. No bedding

44.3-44.9 Till: as above, with light gray (N7) wispy silt beds approximately 1 mm thick forming 10-20% of core. One layer of sandy silt at 44.9 ft

44.9-46.3 Till: as above, but no silt beds

46.3-47.0 Till: as above, with light gray (N7) wispy silt beds approximately 1 mm thick forming 30-40% of core

47.0-47.3 Till: as above, but silt beds forming less than 5% of core
47.3-49.8 Till: medium olive gray (N5-5Y5/1) calcareous, very fine grained pebbly, clayey silt; with pebbles to 24 mm forming about 3% of core. No apparent bedding
49.8-50.1 Till: as above, with wispy beds 3-6 mm thick of silty sand to sandy silt and light gray (N7) silt. Pebbles to 3 mm common in wispy beds
50.1-50.4 Till: as above, with light gray (N7) silt in wispy beds less than 3 mm thick, forming approximately 10% of core
50.4-50.6 Sand: moderate reddish brown (10YR4/6) fine to medium grained, silty, pebbly sand in wispy beds up to 1 cm thick; sand forms 50-60% of core, interbedded with till like that above
50.6-51.3 Till: medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt, pebbles to 18 mm form 3-5% of core; light gray (N7) wispy silt beds less than 3 mm thick form less than 5% of core
51.3-52.3 Shelby tube, not examinied

75-USGSN Drilled August 28, September 3, 1975. Lat 42°26'50", Long 78°38'53". Altitude 1,386.70 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-.5 ft No sample collected
.5-2.2 Shelby tube, not examined
2.2-5.0 No sample recovered
5.0-8.9 Backfill: dry, chaotic mottling of brownish gray (5YR4/1) dark yellowish orange (10YR6/6) and medium olive gray (5N-5Y5/1) calcareous, fine grained, pebbly, clayey silt, with pebbles to 25 mm forming 10-20% of core. Random streaks of yellowish gray (5Y8/1) coarse silt to fine sand. Woody and fibrous splinters common, length 1 cm or less having no preferred orientation; some encased in a medium gray, N5, clay film with a dark yellowish-orange (10YR6/6) oxidized rim surrounding the gray. White blebs, 1 mm diam., common from 7.3 to 7.6 ft, then decreasing with depth
8.9-9.1 Backfill: dry, chaotic mottling of dark gray (N3) dark yellowish orange (10YR6/6) moderate yellowish brown, (10YR5/4) and brownish gray (5YR4/1) clayey, silty, sandy gravel. Calcareous only in spots. Stones 10-30 mm form 20-25% of core
9.1-9.8 No sample recovered
9.8-12.8 Till: oxidized, dry, moderate yellowish brown (10YR5/4) calcareous, very fine grained, pebbly, clayey silt, with pebbles to 15 mm forming about 5% of core. One large stone at 9.8 ft about 60 mm x 70 mm resting on light pinkish-gray (5YR8/1) highly calcareous, coarse silt. Fractures, nearly vertical, with film of calcite and numerous white root fibers; bordered by zone of medium gray (N5) about 6 mm wide
12.8-13.6 Till: as above, with dark yellowish orange (10YR6/6) rims around medium gray (N5) nearly vertical tubes having a brownish black (5YR2/1) woody root in center. Dark yellowish orange (10YR6/6) oxidation around some limestone pebbles
13.6-15.2 Till: as above, moderate yellowish brown (10YR5/4) grading downward to brownish gray (5N-5YR5/1) or olive gray, (N5-5Y5/1). Dark yellowish orange (10YR6/6) oxidation encasing 3-mm-thick nearly vertical fractures, root traces, and some pebbles; very thin zone of medium gray (N5) at center of root traces and fractures disappearing with depth
15.2-20.5 Till: unoxidized, dry, medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt, with pebbles to 15-20 mm forming about 5% of core. Small white blebs, 1 mm, are scattered at 17 ft. Oxidation rims of dark yellowish orange (10YR6/6) are around root traces, fractures, and a few pebbles decreasing with depth
20.5-27.3 Till: unoxidized, moist, soft, plastic, medium olive gray (N5-5YR-5Y5/1) calcareous, very fine grained, pebbly, clayey silt, with pebbles and stones to 10 mm about 5% of core. No bedding or fractures apparent. At 27.2 ft was a pebble 10x50x80 mm, bordered on one side by lens 25x40x5 mm of brownish-gray (5YR5/2) fine to very fine sand with scattered granules
27.3-30.0 No sample recovered
30.0-37.5 Till: brownish olive gray (N5-5Y-5YR5/1) calcareous, pebbly clayey silt, soft and plastic, pebbles probably form about 5% of core. Deformed thin beds of coarse silt to clayey silt at about 30.5 and 31.1 ft
37.5-48.0 Till: as above, but somewhat firmer and more pebbly (pebbles form 10-15% of core)

75-USGSP Drilled August 20-22, 1975. Lat 42°26'46", Long 78°38'50". Altitude 1,386.00 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-3.3 ft No samples collected; probably fill
3.3-5.1 Backfill: oxidized, dark yellowish-brown (10YR4/1) with mottling of moderate yellowish brown (10YR5/4) pebbly, clayey silt
5.1-6.3 Backfill: olive gray (5Y5/1) mottled 25% to moderate yellowish brown (10YR5/4) fine grained, oxidized, pebbly clayey silt. Pebbles to 12 mm form 5-10% of core

Table 3.--Logs of Wells and Test Borings (continued)

75-USGSP (continued)

6.3-10.9 Till: mostly oxidized, moderate yellowish brown (10YR5/4) mottled 30% with olive gray (5Y5/1) calcareous, fine grained, pebbly, clayey silt. Pebbles to 18 mm form about 10% of core. Gray-green shale pebbles weathered to a light greenish gray (5G8/1) near top, unweathered below 8 ft

10.9-11.3 Till: as above, but 90% olive-gray (5Y5/1) 10% mottled to moderate yellowish brown (10YR5/4). No fractures or color variations on any planar orientation

11.3-16.3 Till: unoxidized, medium olive gray (N5-5Y5/1) calcareous, very fine grained, pebbly, clayey silt. Pebbles to 12 mm form 5-10% of core. Oxidized, highly calcareous rims of light brown (5YR5/6) around root traces form about 1% of core to 14 ft. At 12 ft, is a dry layer of coarse sand 1-2 mm thick; at 12.1 ft, very thin partings of coarse silt (1 mm or less). A near-vertical fracture from 13.7 to 14 ft with slickensides (produced in coring?) is bordered by oxidized moderate yellowish brown (10YR5/4) and dark yellowish orange (10YR6/6). Below 14 ft no oxidation around root traces and no fractures

16.3-30.0 Till: as above, with no fractures or oxidation apparent. At 17 ft is a 1-2 mm layer of medium sand, and at 28 ft, a 1-mm layer of very fine sand dips 15° across the core

30.0-31.3 Till: as above, with minor deformed wisps of very light gray (N8) silt

31.3-33.8 No core recovery

33.8-34.7 Till: as above, without wisps of silt

34.7-41.5 Lacustrine: medium olive gray (N5-5Y5/1) calcareous, clayey silt with pebbles 3-6 mm forming less than 5% of core. Wispy streaks and blebs of a very light gray (N8) fine silt with flow structures in the blebs. No core recovery from 36.3 to 39.0 ft

41.5-43.5 No core recovery

43.5-47.3 Till: as before 34.7 ft

75-USGSQ Drilled October 17, 1975. Lat 42°26'47", Long 78°38'56". Altitude 1,378.90 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-9 ft No core samples, probably till; color change from brown to gray at 9 ft (driller)

9.0-11.6 Till: unoxidized pebbly clayey silt; firm, plastic; pebbles form 5-8% of core

11.6-12.2 Till: as above, with numerous lenses and blebs of coarse silt to very fine sand, bedding highly deformed; at about 11.8 ft, a layer 10 mm thick of coarse silt dips at 45°

12.2-14.0 Till: as above 11.6 ft

14.0-20.0 No core samples, non-water yielding

20.0-21.0 Till: olive gray(N4-5Y4/1) slightly pebbly clayey silt; soft and plastic; pebbles form about 3% of core at 20-22 ft, 3-5% at 22-25 ft. A small chunk of dark gray (N3) firm clay at 20.5 ft

24.0-25.0 Till: as above, but firmer and tougher; rare faint streaks of coarse silt a few mm long, forms much less than 1% of core

75-USGSR Drilled October 16-17, 1975. Lat 42°26'57", Long 78°38'59". Altitude 1,377.20 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-5 ft No samples

5-6 Lacustrine: Silty clay to clay, non-calcareous; mottled gray (N5) to olive gray (5Y4/1) to olive black (5Y2/1) above 5.5 ft, gray to light olive gray (5Y5/2) (slightly oxidized) at 5.5-6 ft; white root hairs and a few larger roots, becoming less abundant with depth; some compressed roots or stems at 5.5 to 6 ft. Sand and pebbles absent or very rare (interpreted as a swamp deposit)

6-6.6 Lacustrine: Silty clay, non-calcareous, a few pebbles near 6.5 ft; mostly oxidized yellowish olive-brown (10YR-5Y5/6) with a reticulate pattern of gray (N5) bordering fractures, some containing roots; a few small areas of brownish black (5YR2/1) and olive gray (5Y4/1)

6.6-7.0± Till(?): very pebbly, clayey silt, weakly (top) to moderately calcareous, color mottled as above, traces of roots; pebbles form about 30% of core. One mass of red (10R4/4) coarse silt 15x5 mm, possibly a thoroughly rotted pebble. Basal contact dipping from 6.85 to 7.25 ft

7.0±-7.5 Lacustrine: coarse silt, calcareous, gray (N5) mottled with subordinate strongly oxidized yellowish olive-brown (10YR-5Y5/6); one 25-mm pebble at 7.4 ft

7.5-8.9± Lacustrine: coarse silt, grading to very fine sand and silt, calcareous, pebbly near 8 ft, mostly oxidized light olive gray (5Y6/1) grading to mottling of both gray (N5) and strongly oxidized (10YR-5Y5/6) the latter commonly around root tubes; thin layer of strongly oxidized (10YR6/6) fine sand to silt about 8.7 ft. Vertical contact with pebbly clay (till), dark yellowish brown (10YR4/2) with minor gray and dark yellowish orange mottling

8.9±-10.2 Till: mostly a pebbly, silty clay, calcareous, oxidized dark yellowish brown (10YR3/2) with strongly oxidized root tubes, especially near 9 ft; pebbles form 10-20% of core. Near-horizontal layer 0.1 ft thick of coarse silt interbedded with subordinate clay at 9.25 to 9.35 ft; discontinuous fine-sandy parting at 9.4 ft; bleb of fine sand, a few mm in diam. and some sandy silty till, at about 9.6 ft

10.2-10.8 Till(?): pebbly sandy silt, firm, calcareous, weakly oxidized (10YR-5Y4/2); pebbles mostly dark gray (N3) forming about 25% of core

10.8-12.8 Till: pebbly clayey silt, weakly oxidized (10YR-5Y4/2) calcareous; pebbles form 10-15% of core; no root tubes or fractures apparent
12.8-13.5 Till: as above but with oblong blocks of unoxidized till (N5-5Y4/1) amid the oxidized till; no fractures apparent
13.5-14.3 Till: as above, predominantly unoxidized olive gray (N5-55Y4/1); numerous fractures bordered by very thin oxidized films, near dark yellowish-orange (10YR6/6) spacing 5-10 mm
14.3-25.2 Till: pebbly clayey silt, unoxidized olive gray (N5-5Y4/1) firm; pebbles form 10-15% of core; no fractures apparent. Inclusions of pebbly silt till, 30% pebbles, form 60% of core at 15.6 to 15.9 ft. Core appears slightly damp at 15 to 20 ft, moist and saturated at 20 to 25 ft

76-USGSH Power augered April 27, 1976. Lat 42°26'54", Long 78°39'00". Altitude 1,377.50 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-8.8 ft Till, firm, silty, moderately pebbly; oxidized brownish gray 0-7 ft, mottled at 7 to 7.5 ft, unoxidized olive gray at 7.5 to 8.8 ft; from 7.2 to 8.5 ft, dark yellowish-orange borders around root tubes and around small subspherical masses with dark brown (manganese oxide?) mottling

76-USGSJ2 Power augered April 1976. Lat 42°26'56", Long 78°38'57". Altitude 1,375.80 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-1 ft Alluvium(?): gray muck
1-17 Till: predominantly silt and clay, pebble content 5%; strong yellowish orange oxidation at 1 to 4 ft, medium yellowish-brown with streaks (fracture rims?) of light gray clay at 4 to 6.5 ft; brownish gray at 6.5 to 10 ft, unoxidized olive gray at 10 to 17 ft
17-18.6 Till: predominantly silt and clay, pebble content 10%; from 17.4 to 18.4 ft, numerous fine sand partings only a few grains thick and 1-3 cm in extent (so cores do not break along them) and faint grayish red

76-USGSJ3 Power augered April 1976. Lat 42°26'56", Long 78°38'57". Altitude 1,375.80 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

This hole was augered 10 ft south of hole J in hope of locating a water-yielding sand or gravel layer penetrated in hole J a few feet below land surface. No such layer was recognized, and the hole remained dry while standing open for 2 days. It was then backfilled and abandoned; no piezometer installed.

0-4 ft Not observed
4-5.3 Till: firm, oxidized dark yellowish orange (10YR6/6) irregularly mottled with grayish brown; equidimensional flecks of silt 1-10 mm diam. oxidized light orange, some may be weathered sand or pebbles
5.3-5.7 Till: oxidized; horizontal and vertical fractures form subrectangular blocks, fracture surfaces coated with dusky orange oxidized films

76-USGSJ4 Power augered April 29, 1976. Lat 42°26'56", Long 78°38'57". Altitude 1,377.00 ft. Log from U.S. Geological Survey study of low-level radioactive waste burial trenches.

0-1.5 ft Alluvium(?): muck, gray mottled with brown and bright yellowish orange
1.5-6.7 Till: clayey, silty, pebble content 5-8%; oxidized moderate yellowish brown, a few pebbles have bright yellowish orange rims; irregular vertical fractures with gray N5-N7 rims 2 mm wide at 5 to 7 ft; also irregular fractures(?) coated with paper-thin oxidized yellow-brown films
6.7-10 Till: brownish gray

76-USGSJ5 Hand-augered April 1976. Lat 42°26'56", Long 78°38'56". Altitude 1,375.80 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-1.7 ft Alluvium(?): clayey silt, rare pebbles; blocky texture, chunks 2 mm wide; Oxidized dusky orange to medium to dark brown
1.7-1.9 Alluvium(?): silty clay, rare pebbles; dark-brown flecks of iron oxide; fractures with gray reduced borders
1.9-2.05 Alluvium(?): sand, fine, with silty clay probably in thin layers, a few pebbles; dark brown, heavy iron stain
2.05-2.85 Alluvium(?): gravel, embedded in slightly to very silty sand to silt, soft
2.85-5.2 Till: predominantly silt and clay, sparse pebbles; oxidized brown, flecks of dusky orange near top; fractures and fresh root tubes with gray reduced rims

76-USGSS1 Power augered April. 1976. Lat 42°26'56' Long 78°38'54". Altitude 1,345.90 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-4.7 ft Alluvium: silt, clayey, soft, plastic, oxidized; pebbly below 3 ft
4.7-5 Alluvium: silty sand gravel (?), yields a little water
5-10 Colluvium (?) or Till: silty clay with scattered pebbles, unoxidized, soft and plastic, firmer with depth
10-14.6 Till: silty clay with pebbles, firm and plastic, unoxidized

Table 3.--Logs of Wells and Test Borings (continued)

76-USGSS2 Power augered April, 1976. Lat 42°26'56" Long 78°38'54". Altitude 1,345.90 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-5.2 ft	Alluvium (described below)
0-3.5	Silt, clayey, oxidized, light to dark brown, with black planar flecks up to 1 cm diam. (iron oxide?); soft and plastic
3.5-4.3	Clay, silty, containing pebbly sandy layers and rare woody fragments; unoxidized (dark gray) at 4.1 to 4.3 ft
4.3-4.6	Gravel embedded in silty clay, oxidized
4.6-5.2	Clay, soft and plastic, unoxidized, rare pebbles (1% of core); interbedded with thin layers of sand near base
5.2-5.6	Sand, medium to very coarse, pebbly, clean, unoxidized (dark gray), water yielding

76-USGSU Power augered April 27, 1976. Lat 42°26'47", Long 78°30'57". Altitude 1,378.10 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-5 ft	Till: oxidized, brown to tan, stony at base
5-10.1	Till: firm, damp, unoxidized, except for dark yellowish orange oxidized borders along fractures and root tubes that constitute less than 5% of core

76-USGSV Drilled October 14-28, 1976. Lat 42°27'01", Long 78°38'47". Altitude, 1,385.90 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-44 ft	Till: predominantly silt and clay, with a little randomly distributed coarse sand to pebbles (est. 10-15% of core, 0 to 15 ft, 5% or less at 15 to 35 ft, 10-15% at 35 to 43 ft); oxidized at 0 to 9 ft, grading at 9 to 16 ft to unoxidized; relatively clayey at 40 to 44 ft with minor wisps or partings of coarse silt
44-49	Lacustrine: layers of coarse silt, clay with rare silt partings and pebbles, rhythmic-laminated dark gray clay and light gray silt, and probably fine to coarse sand
49-69	Till: relatively clayey; includes occasional lenses of rhythmic clay and silt, and silt partings; coarse sand to pebbles est. about 5% of core at 49 to 53 ft, generally greater below
69-83	Till: predominantly silt and clay; randomly distributed coarse sand to pebbles generally forming about 10% of core, but some relatively pebbly till may be at 75 to 78 ft; unoxidized; possibly unsaturated at 81.5 to 83 ft
83-94	Gravel: probably mostly small pebbles and granules, with very coarse to very fine sand, traces of silt; poorly sorted; oxidized; unsaturated; pebble counts at 85 and 90 ft show 18% and 21% exotic lithologies respectively, among broken or rounded stones 1-3 cm diam.
94-99	Sand: fine to very fine, with 20-50% medium to very coarse; traces of silt; rare granules; rare thin layers of grayish-red clay with embedded very coarse sand; oxidized, unsaturated
99-99.5	Gravel: fine pebbles and granules
99.5-103.5	Sand: very fine to fine, layered; a few thin layers and partings of silt; oxidized, unsaturated; small gray concretions
103.5-107	Lacustrine: upper part mostly silt and (or) clay, no samples; lower part dark clay with numerous partings of unoxidized silt, a few layers of oxidized very fine sand to silt, and occasional round blebs or sugen as large as 5 mm of grayish red silty sand and rarely of gray silt or silty sand; unoxidized except very fine sand as noted
107-118	Lacustrine: silt; chiefly as rhythmic layers of coarse silt 1/2 to 3 mm thick alternating with generally thinner layers or partings of dark-gray fine clayey silt; some thicker layers of coarse silt; one layer of very fine sand at 111.6 to .7ft; silt and sand weakly oxidized, generally pale yellowish-brown (10YR-5Y 6/2); unsaturated; a few layers with partings of red clay near base
118-129	Disturbed lacustrine: fine or clayey silt, gray to olive gray, regular fine beds 1-3 mm thick, with a few beds of brownish-gray clay (5YR 5/1) as much as 5 mm thick, and a few partings or very thin beds of coarse silt, which together constitute 50% or more of core; interbedded with layers of disturbed material ranging from severely contorted rhythmic thin layers to irregular mottled blebs of fine to coarse silt, commonly with scattered grains of coarse sand to granules and with scattered blebs or alined blebs of grayish red (10R 4/2) to light brown (5YR 5/5) silt to sandy silt and one bleb of brown layered clay and silt; at 124 ft, disturbed material includes three layers, each 2-3 cm thick, of structureless clayey silt with randomly distributed pebbles to coarse sand, gray (N5-5GY 6/1) mottled with dark gray (N4), grayish red (10R 4/2), and/or pale yellowish brown, more stony than the till above 83 ft
129-150	Lacustrine: silt, medium to fine, generally in regular beds 1-20 mm thick with slight contrast in grain size between beds, but with partings of coarse silt below 138 ft and beds of coarse silt 1-6 cm thick below 149 ft; olive-gray, barely plastic, graded silt beds at 134 ft; a few zones of folded, disturbed beds; rare clay beds up to 7 mm thick; rare scattered coarse sand above 135 ft have zero or negative (unsaturated) pressure head.

Table 3.--Logs of Wells and Test Borings (continued)

76-USGSW Drilled October 26 to November 12, 1976. Lat 42°26'43", Long 78°38'45". Altitude 1,386.00 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-91 ft	Till, predominantly clay and silt, generally less than 15% coarse sand and fine gravel; includes some very thin rhythmic beds of clay and clayey silt at 12 to 32 ft, which become abundant but contain embedded fine pebbles at 30 to 32 ft; unusually stony at 71 to 84 ft; includes scattered thin layers of silt or clayey silt at 81 to 91 ft. Oxidized 0 to 8 ft or more, oxidized fractures or root tubes to 10.5 ft or more
91-108	Silt, with subordinate very fine sand and clay, oxidized and largely unsaturated, some layers with scattered pebbles. Individual layers include very fine sand (only between 93 and 95 ft), very fine sandy silt with traces up to 25% scattered coarse sand to fine pebbles, and coarse to fine silt (all buff colored); also dark brownish-gray clay with rhythmic silt partings, and one layer of dark brownish-gray silty clay with coarse silt partings and large embedded pebbles at 107 to 108 ft. Pebbly layers subordinate, but pebbles as large as 2-in diam. were recovered
108-136	Predominantly silt: layers 1 to 5 mm thick of fine silt (olive gray) with thinner layers or partings of darker, clayey silt and equally thin layers or partings of coarse silt (light gray to light olive gray), unoxidized and probably saturated. Rare embedded coarse sand to fine pebbles at 108 to 112 ft, 126 to 127 ft, and 135 to 136 ft. A few partings and layers of clay (brownish-olive gray) up to 20 mm thick. Many layers appear parallel and subhorizontal, but some sets show severe internal deformation, being folded, squeezed, and (or) discontinuous. Rate blebs of rose-colored coarse sandy silt 2 mm diam. at 126 to 127.5 ft
136-138	Silt, coarse; in part interbedded with fine silt in layers generally 3-10 mm thick; highly disturbed, with prominent steep to vertical dips and small-scale plastic deformation, discontinuities, and convoluted fine layers around flowed masses of coarse silt.

77-USGSO Hand-augered April 20-21, 1977. Lat 42°26'57", Long 78°38'02". Altitude, 1,364.31 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0.0-0.98 ft	Backfill: silty pebbly till, weakly oxidized, numerous fresh roots, dry
0.98-2.62	Colluvium (?): sandy clay, soft and plastic, nonbedded, wood fragments, oxidized; a few chunks of oxidized till; moist
2.62-3.12	Till: oxidized, with strong yellowish orange rims on root tubes and dark manganese oxide on fracture surfaces; numerous wisps of coarse silt 90-95 cm long
3.12-7.22	Till: firm, plastic silty clayey till; numerous deformed silt wisps and rare layers of pebble-free clay at 95 to 125 and at 205 to 220 cm; relatively stony at 170 to 205 cm; generally unoxidized, with minor oxidized mottling and with strong yellowish-orange oxidation bordering numerous root tubes and a fracture; manganese oxide stain and a thin gray reduced rim noted on the fracture surface
7.22-8.37	Till/Lacustrine: pebbly silty clay, containing blebs of coarse silt and interbedded with deformed and discontinuous thin layers of coarse and fine silt; unoxidized, firm, plastic; rare blebs of rose-colored silty sand and of red clay in lower part
8.37-11.15	Till: silty, clayey content, 10-15% pebbles and coarse sand; unoxidized

77-USGST Hand augered April 20-21, 1977. Lat 42°26'57", Long 78°39'02". Altitude 1,360.68 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

1.31 ft	Soil or colluvium: predominantly silt, pebbly at 20 to 40 cm; dry
1.31-2.62	Till: silty, firm; very stony at 75 to 80 cm; variable oxidized mottling, traces of manganese oxide stains, dry
2.62-4.76	Till: predominantly silt and clay, contains 10-15% fine pebbles to coarse sand, plastic, very moist; oxidized at 80 to 105 cm, variable mottled oxidation at 105 to 145 ft; strong oxidation along root tubes
4.76-5.74	Till and/or lacustrine: silt and clay; sand and fine pebbles very subordinate and limited to narrow zones; faint gray mottling suggests disturbed bedding; unoxidized except around root tubes
5.97-7.41	Till: predominantly silt and clay with 10-15% coarse sand to fine pebble content; unoxidized, no root tubes

77-USGSX Hand-augered April 20, 1977. Lat 42°26'57", Long 78°39'02". Altitude 1,351.12 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-0.49 ft Soil
0.49-2.30 Till: silty, 10-15% pebbles; mottled oxidation, also strong yellowish orange oxidation along root tubes; many fresh roots 15-35 cm; lower part wet
2.30-3.94 Lacustrine and/or till: clayey fine silt, entirely or nearly pebble-free, plastic; with layers and wisps of crumbly coarser silt; weakly oxidized (olive brown to tan to light gray); blebs or rose-colored silty sand at base
3.94-8.20 Till: predominantly clayey silt, sand and fine pebbles increasing to 5% near base; wisps of coarse silt 120-135 cm; plastic, oxidized (medium brown) mottled with unoxidized (olive gray), the latter increasing with depth; wet in places
8.20-9.51 Till: clayey silt, 5-15% coarse sand and pebbles 250-275 cm, 5% 275-300 cm; plastic; unoxidized

77-USGSY Hand-augered April 20, 1977. Lat 42°26'57", Long 78°39'02". Altitude 1,348.29 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-0.49 ft Soil: mostly silt, dark brown
0.49-3.44 Till: silty, normally pebbly 15-95 cm; pebbles and sand rare 95-105; thoroughly oxidized 15-55 cm, oxidation grayish-brown becoming weaker with depth 55-105 cm, strong yellowish orange oxidation and manganese stain bordering root tubes and some fractures 55-105 cm; water visible in fractures and around stones (possibly this unit displaced downslope?)
3.44-4.59 Till: silty, normally pebbly, thoroughly oxidized fresh roots 105-140, silt layer at 115 cm, water in fresh fractures lacking strong oxidized borders
4.59-6.07 Till: as above, plastic, reduced gray rims on fractures and root tubes
6.07-6.3 Till: as above, mottled oxidized (olive brown) and unoxidized (olive gray); traces of roots

77-USGSZ Hand-augered August 1977. Lat 42°26'57" Long 78°39'02". Altitude 1,343.70 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-0.8 ft Silt to clayey silt, brown; numerous roots
0.8-2.3 Clayey silt, brownish gray, strong oxidation along both fresh and old root tubes and (in nearby holes) along fractures, dark yellowish orange to rusty red-brown at top, less numerous and grayish orange at base; flecks of black to dark brown organic matter; many fresh and dead roots. Sandy or pebbly streak at 1.65 ft
2.3-2.8 Silty clay, slightly sandy, light gray, strong yellowish orange oxidation along root tubes
2.8-3.5 Pebbly silt, mottled oxidation, water yielding
3.5-4.2 Sandy clayey silt interbedded with clayey silt; abundant leaves and twigs 3.9-4.2 ft
4.2-4.3 Silty coarse sand, slightly pebbly.
4.3-9.5 Till, clayey, silty, plastic, unoxidized; trace of wispy silt beds at 6 ft

Five earlier holes nearby were abandoned; four north of the creek met refusal on silty gravel (creek alluvium) at 3 to 5 ft depth; one south of the creek 3.7 ft west of this hole penetrated to 6.8 ft, but piezometer could not be installed because water from alluvium could not be cased off. A cross-section shows generalized earth materials penetrated by holes Z1-Z5.

77-USGS4-4A Drilled Dec. 5-6, 1977. Lat 42°26'52", Long 78°38'57". Altitude 1388.1 ft. Log from U.S. Geological Survey study of low-level radioactive waste burial trenches.

31.6-31.7 Sand, chiefly very fine but ranging to medium sand at base and probably to coarse silt; wet, noncohesive, dipping
31.7-31.8 Silt, cut by one bed of fine sand 4 mm thick, dipping 45°
31.8-32.4 Clay or silty clay, plastic, firm, olive gray; includes 3 zones each 5 mm thick, all roughly parallel and dipping at 35 degrees, in which numerous parallel but discontinuous layers of coarse white silt each less than 1 mm thick make up half of core volume
32.4-32.5 Sand, fine to coarse; pebbly, noncohesive, damp but not saturated
32.5-32.8 Silt, fine to coarse; one layer of silty pebbly very fine to coarse sand, dip parallel to those above and below at 45°, 15 mm thick
32.8-32.9 Coarse silt, noncohesive, dipping
32.9-33.6 Clayey silt, dark olive gray, nearly pebble free; interbedded with light-colored coarse silt generally arranged in discontinuous, subhorizontal irregular layers 1-2 mm thick, but one layer nearly 15 mm thick
33.6-34.3 Clayey silt, dark olive gray, nearly pebble free, very firm, interbedded with coarse silt; like unit above, except that the discontinous coarse silt interbeds are even more abundant, totally irregular in attitude, and vary laterally in thickness. One wedge of sandy, pebbly brownish-gray silt, dipping at 20°, 3 mm thick
34.3-34.4 Coarse silt forming bulbous structures; core is nearly noncohesive

34.4-34.5 Coarse to fine silt, massive
34.5-35.1 Silty clay, dark, very rare pebbles, numerous very thin discontinuous streaks of coarse silt; one nonbedded layer of mostly coarse silt 5 mm thick; one dipping layer of numerous pebbles in silty clay 15 mm thick
35.1-38.0 Till, rich in silt and clay, firm, plastic; low to normal in pebble content (4-10%); two zones, one at 11.19 and one at 11.28 meters-each maximum thickness 2 cm, in which till is distinctly sandier and slightly browner. Possibly some discontinuous fine silt streaks and (or) partings near base, difficult to recognize
38.0-39.2 Till, rich in silt and clay like that above but abnormally pebbly (15% pebbles); firm and plastic; occasional 2-mm blebs of dark clay at top
39.2-39.8 Till as above, but pebble content less than 10%

77-USGS5-2D Drilled Nov. 30 to Dec. 1, 1977. Lat 42°26'53", Long 78°38'59". Altitude 1385.2 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

28.2-28.9 Till, silt and clay rich, more pebbly than normal near base, very firm and only moderately plastic, olive-gray, unoxidized. Top 3 cm carries imprint of point, also some oxidized till close to top surface. From 8.61 to 8.65 m, strong microlaminations at 20° angle to core, subparallel to sand lens (these were not looked for below). A lens of very fine sand to coarse silt about 3 mm thick at about 8.65 m dips at less than 30° angle to core, also some deformed wisps of coarse silt
28.9-29.0 Coarse silt, top and bottom surfaces irregular but dip at 20° angle to core
29.0-29.1 Wedge-shaped mass of clayey silt, a few pebbles and coarse sand (might be till, did not carefully check). Minimum thickness 2 cm, maximum 6 cm. Lower surface dips in opposite direction from upper surface
29.1-29.2 Sand, very fine to very coarse, and granules, slightly silty, friable
29.2-29.3 Coarse silt interlayered with clayey silt, layers irregular in thickness and attitude; messbedded
29.3-29.6 Not cored, cuttings are lacustrine clay, silt, sand
29.6-29.75 Pebble 1 cm diam., enveloped in a dipping wedge of silty coarse sand; bordered by silty clay with a few pebbles and traces of bedding toward base. This material could be disturbed by previous drilling
29.75-30.2 Interlayered coarse silt and fine silt; fine silt may range to clay, coarse silt may range to very fine sand locally; a few pebbles; firm and seemingly dry. Layers parallel and fairly uniform in thickness near top, distinct but discontinuous near base. Fault, dipping at 60°, cuts core at 9.07- to 9.14-m depth; not a plane of weakness. Layers dip at about 20° to core
30.2-30.5 Silty clay to fine silt, very firm, beds dip at 20° to core, very rare pebbles or sand grains; near base, a bleb of deformed coarse white silt about 20x5x10 mm
30.5-31.2 Till, silt and clay rich, sparsely pebbly at top but increasing pebble content with depth; deformed wisps of silt evident throughout; core break along irregular surface partly coated with coarse silt at 45° angle to core, at 31.1 m depth.
31.2-33.5 Till, silt and clay rich, normally pebbly (5-10% est.); one bleb of brownish sandy sediment 3x5 mm at 9.60 m; a trace of white coarse silt at 10.06 m; strong subhorizontal microlaminations. At 9.91 m, broken surface of core reveals two intersecting, steeply dipping fractures, not visibly open and showing no chemical alteration, but planes of weakness are present along which the core could be pulled apart
33.5-39.2 Till, like that above but more pebbly, probably 10-15%, firm, plastic. One pebble 6 cm long at 10.88 m. Subhorizontal microlaminations generally present

77-USGS5-2E Drilled Dec. 9, 1977. Lat 42°26'53", Long 78°38'59". Altitude 1,385.3 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

25.3-26.9 Soft material, probably same ss that below (interpreted from blow counts).
27.75 Disturbed till, soft and very plastic; numerous streaks of moderately yellowish-brown, oxidized till amid generally unoxidized or weakly oxidized till; no sand or silt; caves readily
27.75-28.4 Till, predominantly silt and clay with more than 10 percent small pebbles and coarse sand, plastic, olive-gray, unoxidized; with abundant thin, deformed layers of coarse silt and one pod of medium to fine sand 5 mm in diam. This material is in place
28.4-28.8 Lake beds: layers of light-gray coarse silt to possibly very fine sand up to 2 cm thick, alternating with dark clayey silt with coarse silt partings or thin layers; beds dipping (or possibly faulted) at substantial angle to core

Table 3.--Logs of Wells and Test Borings (continued)

28.8-30.0 Lake beds: chiefly fine clayey silt, pebble free; two beds of coarser silt each 2 cm thick; upper silt bed is uniform coarse silt, has basal fault contact at angle to core and is saturated; lower bed consists of severely distorted fine layers of coarse and fine silt, apparently dry. Coarse silt to very fine sand, apparently dry, with minor fine clayey silt layers; layers terminate against fault dipping at 45° angle to core

30.0-30.15 Fine clayey silt, with thin subhorizontal layers of coarse silt and one thin layer of silt and granules.

77-USGS8-1C Drilled Nov. 17-18, 1977. Lat 42°26'47", Long 78°38'51". Altitude 1,388.5 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

33.1-34.9 Till, silt and clay rich, olive gray, normally pebbly (5-10%). Wisps of light-gray coarse silt and a smaller pebble content (<3%) below 10.52 m

34.9-36.1 Predominantly coarse gray silt interbedded with thin layers of very fine gray sand, fine gray to buff sand, and olive-gray clay. Sandy units saturated. Below 10.97 m, layering is lost; blobs of silt and clay give core a mottled texture. At base of interval is a thin (<.63 cm) fine brownish-gray sand dipping at a 25° angle from vertical

36.1-38.7 Massive coarse gray silt; when broken has sugary texture. Saturated; deforms readily and flows when shaken

38.7-41.1 Clay, olive gray with wisps of coarse silt; no pebbles. One large blob (2.54-cm diam.) of very fine brownish sand or coarse silt incorporated in the clay at 12.50 to 12.54 m

More detailed description of individual layers in this interval are available in field notes.

77-USGS8-2A Drilled Nov. 22, 1977. Lat 42°26'48", Long 78°38'52". Altitude 1,385.2 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

32.7-33.6 Till, olive-gray pebbly silty clay with pebbles and coarse sand exceeding 10%. Pebbles generally less than 0.6-cm diam.; no bedding or fractures. One bleb of light-gray coarse silt 0.6-cm diam. near top

33.6-33.9 Lake beds (?), sand, fine to very fine, brownish gray, dipping slightly, 1 cm thick, at top; overlying sandy clay with rare pebbles, abundant deformed beds of coarse silt, and a few fine sand blebs

33.9-38.3 Till, olive-gray pebbly silty clay, pebbles and coarse sand 10-15%; top 3 decimeters is firm, with rare tiny blebs of light-gray silt; more plastic and moldable in next 3 to 9 decimeters, firm again below. Most cores appear moist and saturated. No bedding or fractures

38.3-39.0 Till, as above but fewer pebbles (±5%), also light-gray deformed silt wisps and blebs increasing from traces at top to perhaps 2% at base

78-USGS-B3 Drilled July 12-14, 1978. Lat 42°26'58", Long 78°39'01". Altitude 1,375.93 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-8.05 ft Backfill: mottled brown (5YR 4/4) to brownish gray (5YR 4/1) silt-clay till with dark yellowish orange (10 YR 6/6) streaks; dry and crumbly

8.05-8.55 Old Soil Zone: mottled grayish black (N2) to light olive gray (5Y 6/1) and brownish olive gray (5YR-5Y 6/1) clay with numerous root hairs; putrid odor. Sample breaks resdily along leaf planes

8.55-8.8 Silt: uniform, mottled silt with few pebbles and no sand

8.8 -11.0 Oxidized Till: dark yellowish brown (10YR 4/2) mottled to moderate yellow-brown (10YR 5/4) silt and clay till. No fracture development. Core is damp and firm

11.1-12.2 Silt: sandy, clayey silt with 2 large stones, and a clayey silty gravel with 50% stones; moist. Assumed to be a fluvial deposit

12.2-13.8 Oxidized Till: brown silt-clay till with normal pebble content (5-10%); moist

13.8-20.6 Unoxidized Till: olive gray (5Y 4/1) clay-rich till with oxidized fracture network visible in cores; moist

20.6-23.5 Unoxidized Till: olive gray 5Y 4/1) clay-rich till with no oxidized fractures visible in cores

23.5-24.7 Unoxidized Till: as above except the matrix appears to be slightly coarser (clay and silt). Pebbles are well rounded dark shale or limestone

24.7-25.1 Missing core

25.1-25.9 Gravel: loose, sticky, disturbed mixture of granules and small pebbles (60%) and silt-clay (40%)

25.9-26.7 Unoxidized Till: olive gray (5Y 4/1) silty clay till. Core is somewhat plastic and normally pebbly (5-10%). At 26.7 ft, water level in hole was 0.05 ft

26.7-27.7 Unoxidized Till: Maxtrix is an olive gray (5Y 4/1) to brownish gray (5YR 4/1) silty clay till. Unusually coarse material; greater than 50% broken fragments of large stones. Slight indication of wet surface in core

27.7-31.7 Unoxidized Till: olive gray (5Y 4/1) silty clay till with normal to low pebble content (5-10%). No mess bedded silts visible in core. Till is plastic yet firm

78-USGS-B3 (continued)

31.7-34.5 Unoxidized Till: olive gray (5Y 4/1) silty clay till with low pebble content (less than 5%). Streaks of mess-bedded silts, generally 1 mm thick, forming about 5% of core. Near base, one mass of till rich in coarse sand and pebbles

34.5-37.65 Unoxidized Till: as above. Partial drying of samples showed an intricate and complex deformed interfingering of light and dark gray zones. In general, the bedding is subhorizontal and parallels the microlaminations. The darker color may indicate higher clay content but no difference could be detected in texture by feel or scraping

37.65-43.2 Unoxidized Till: olive gray (5Y. 4/1) silty clay till with pebble content about 10% of core. No mess bedded silts were detected in the cores. Till with increased pebble content (15%?) noted between 39.5 and 40.1

78-USGS-I4 Power augered April 28, 1878. Lat 42°26'55", Long 78°38'58". Altitude 1,381.5 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-3.5 ft Backfill: till, unoxidized, traces of wispy silt layers

3.5-4.5 Soil(?): silt, oxidized; tree roots

4.5-9.5 Till: oxidized

9.5-11.0 Till: clayey silt, with about 5% pebbles; oxidized moderate yellowish brown to brownish gray; vertical streaks of light-gray N5 near top (fracture rims?); horizontal fractures (?) at 10 and 10.5 ft, with a light-gray film of silt-size calcite crystals at the center, bordered by yellowish brown to dark grayish brown oxidized till; also vertical fractures with manganese oxide films

78-USGS8-2B Drilled Oct. 11, 1978. Lat 42°26'48", Long 78°38'52". Altitude 1,388.4 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trences.

29.75-30.2 Metal disk at top then several pieces of plastic; layered compressed cardboard below the lowest piece weathered into clay till

30.2-30.7 Till, silt and clay-rich, normally pebbly (5-10% pebbles), plastic, olive-gray, unoxidized

30.7-31.3 Till, as above; about one third of sample is cardboard: Presumably these are cuttings pushed below the casing

31.3-31.6 Coarse silt, with fine to very fine sand and some clay; wet and deforms readily; olive gray to olive brown

31.6-31.9 Coarse silt, with clay and some very fine sand; more cohesive; moldable and plastic

31.9-32.2 Mainly caved-in material of silt, sand and clay. Presumably cuttings

32.2-32.7 Till, silt and clay-rich; normal pebble content (5-10 percent); wet and plastic, olive gray, unoxidized

79-USGS-EB1 Hand augered September 1, 1977. Lat 42°26'54", Long 78°38'53". Altitude 1,356.14 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches.

0-0.39 ft Soil: dark brown, mainly silt and clay

0.39-1.08 Till: mostly silt and clay with pebbles and coarse sand 10-15%, dry and crumbly; oxidized, light brown mottled with a light grayish brown; strong yellowish orange oxidation along apparent fracture planes; light gray root fibres common

1.08-3.90 Till: as above but more cohesive and sticky; oxidation along fracture traces changing to a reddish brown (rust); root fibres changing to a brownish black, less common with depth

3.90-4.20 Pebble gravel: mixed with silt snd clay, light to moderate brown, yields some water

4.20-5.81 Till: mostly silt and clay with pebbles and coarse sand 5-15%, plastic; oxidized (4.20 to 4.79 ft) with mottled brown and brownish gray and traces of dark yellow-orange grading to an olive brown (4.79 to 5.81 ft) with traces of light gray apparently along fracture planes (would not tesr along these surfaces)

5.81-8.86 Till: silty clay with pebbles and coarse sand; unoxidized, olive gray; zone of low pebble content with partings of a light-gray coarse silt from 6.99 to 7.18 ft

79-USGS-EB2 Hand augered May 11, 1978. Lat 42°26'54", Long 78°38'53". Altitude 1,353.85 ft. Log from U.S. Geologicsl Survey study of low-level radioactive-waste burial trenches.

0-0.98 ft Soil: dark grayish brown

0.98-2.95 Till: predominsntly silt and clay with 5-15% pebbles and cosrse sand, firm, tough; oxidized, light to medium grayish brown, streaks of topsoil near top, also mottled with strong yellowish-orange oxidation; water in secondary pores or cracks; abundant fresh roots

2.95-4.27 Till: as above but with reduced gray skins on fracture planes and around pebbles

4.27-6.23 Till: mottled oxidized and unoxidized, the latter increasing with depth; wisps of oxidized very fine sand and unoxidized silt at base

6.23-6.73 Till: unoxidized, plastic, firm; no oxidized fractures or root tubes observed

79-USGS-EB3 Hand augered April 24-25, 1979. Lat 42°26'50", Long 78°38'50". Altitude 1356.54 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches. Location at base of slope, along back edge of terrace about 4 ft above nearby flood plain, about 315 ft south of where security fence crosses creek.

Log, from field examination of cuttings:

0-1.05 ft	Colluvium(?): topsoil, dark brown silty clay, few pebbles. Many roots and worms, soil is damp
1.05-1.35	Colluvium(?): moderate yellow brown silty clay, few pebbles. Material is moist yet not cohesive. Numerous white root fibers and black streaks; organic smell
1.35-1.70	Alluvium: moderate yellow-brown silty clay matrix with more sand than above. Pebbles and stones up to 1-inch diam. common. Bright yellow-orange and dark reddish brown (rust-colored) around pebbles; many root fibers. Material is wet but does not yield appreciable water to hole
1.70-2.1	Alluvium: moderate yellow-brown silty clayey gravel. Oxidized bright-yellow orange and rust-colored zones around pebbles and stones; higher sand content. Material is wet but does not yield appreciable water to well
2.1-2.14	Till: oxidized moderate brown silty clay; 5-10% pebble content. Roots are infrequent. Traces of buff-colored blebs of silt
2.4-3.7	Till: unoxidized olive-gray silty clay; 5-10% pebble content, traces of oxidized yellow brown along root fibers
3.7-9.6	Till: unoxidized olive-gray silty clay; 5-10% pebble content; no oxidation. Stone at 5.7 ft, 2x1x2 inches
9.6-14.7	Till: as above, except till contains streaks and blebs of gray silt
14.7-15.0	Till: as above; 2 stones about 1-inch diam.; till "peels" easily in the horizontal direction (a hint of some bedding). Material does not show similar characteristics when torn vertically. This was not apparent in the material above. Large stone at 15 ft

79-USGS-EB4 Hand augered April 25, 1979. Lat 42°26'49", Long 78°38'49". Altitude 1,355.19 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches. Location about 370 ft south of security fence where it crosses stream, at west edge of the present floodplain.

0-1.0 ft	Soil: dark brown, mainly clay with many roots and worms
1.0-1.8	Soil: light to medium yellow-brown clay, oxidized streaks
1.8-2.0	Alluvium: oxidized yellow-brown clayey silty gravel, damp
2.0-3.4	Till: oxidized moderate yellow brown silty clay with 5-10% pebbles; moist yet firm. Oxidation rims of bright-yellow orange or yellow brown with a light gray inner ring surrounding white root hairs
3.4-5.7	Till: unoxidized olive-gray silty clay with 5-10% pebbles, moist yet firm. Oxidation along fractures (?) and root fibers. Blebs and streaks of silt present between 3.4 and 3.6 ft but not common. One very thin coarse silt layer at 3.8 ft. Large stone at 5.7 ft

79-USGS-EB5 Hand augered April 25, 1979. Lat 42°26'49", Long 78°38'49". Altitude 1,355.68 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches. Location about 380 ft south of security fence where it crosses the creek, and along the west edge of present flood plain.

0-1.0 ft	Soil: dark brown clay with roots and worms
1.0-2.4	Soil: yellow-brown clay, moist, with streaks of oxidized bright yellow-orange, dark gray to black (flood plain?)
2.4-2.8	Alluvium: yellow-brown clayey silty gravel. Yields water to hole
2.8-3.3	Till: oxidized moderate brown silty clay with 5-10% pebbles. Oxidation of bright-yellow orange along root fibers
3.3-5.0	Till: unoxidized olive-gray silty clay with 5-10% pebbles, moist yet firm
5.0-10.3	Till: as above except wisps of blebs of gray and brownish red silt strewn throughout. Pebble content increases between 6 and 8 ft depth

79-USGS-EB6 Hand augered April 25, 1979. Lat 42°26'49', Long 78°38'49. Altitude 1,355.73 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches. Location about 390 ft south of security fence where it crosses the creek along the west edge of the present flood plain.

0-1.0 ft	Soil: dark-brown clay
1.0-2.5	Soil(?): yellow-brown clay with streaks of oxidation, moist
2.5-3.5	Alluvium: brown silty gravel; large stones could not penetrate. Gravel slumped into hole. Good well

79-USGS-EB7 Hand augered April 25-26, 1979. Lat 42°26'49", Long 78°38'49". Altitude 1,361.8 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches. Location at base of slope, along back edge of terrace about 4 ft above nearby floodplain. Back edge of the terrace is depressed, as if marking a marginal channel position.

0-0.5 ft	Colluvium(?): topsoil, very dark-grayish-brown
0.5-1.2	Colluvium(?): clayey silt till, few pebbles, oxidized, blocky fractures with gray reduced films
1.2-1.7	Alluvium: fine to sandy silt, no pebbles; oxidized, mottled with dark yellowish orange to dark brown iron staining
1.7-2.5	Alluvium: silty gravel, oxidized

2.5-9.7 Till: predominantly silt and clay, normally pebbly; unoxidized, except broad areas of weak oxidation at 2.5 to 3.0 ft; plastic, a few silt wisps at 9.2 to 9.7 ft

9.7-10.0 Lake beds: silty very fine sand, saturated. (Water level 5.6 ft below land surface overnight.)

10.0-10.8 Lake beds: silt and clay, layered, a few stones near base

10.8-11.4 Disturbed lake beds(?): fine to sandy clayey silt with innumerable randomly-oriented fragments of light silt partings throughout and unusually abundant pebbles (30% +)

11.4-12.4 Lake beds: silt, coarse, and very fine sand; massive, unoxidized, saturated

12.4-14.1 Disturbed lake beds: silty clay, dark gray, with 20-30% light-gray silt; near top the light-gray silt occurs as innumerable randomly oriented wisps, flecks, and wildly distorted lenses; near base, bedding is more continuous but still severely torn and distorted; very few to no pebbles

14.1-14.9 Disturbed lake beds: distorted layers of dark clayey silt and light silt like those above, with scattered grains of coarse sand to pebbles sprinkled randomly throughout; pebble content typical of till (5%?)

79-USGS-EB8 Hand augered April 26, 1979. Lat 42°26'48", Long 78°38'48". Altitude 1,359.39 ft. Log from U.S. Geological Survey study of low-level radioactive-waste burial trenches. Location about 90 ft south (upstream) from EB-7, at base of slope below a projection on the slope, along the back edge of a very low terrace about 1 ft above the present floodplain.

0-0.6 ft Soil: dark brown, grades into unit below

0.6-1.7 Till: predominantly silty clay with 5-10% coarse sand and pebbles; oxidized, upper part crumbles into small chips, lower part breaks into chunks a few cm wide; strong oxidation along surfaces and root tubes in lower part

1.7-6.8 Till: unoxidized, mottled oxidized generally along root tubes and along subvertical tabular zones that suggest oxidation along a fracture but do not contain a fracture plane. Below 5 ft, randomly oriented fragments of light-gray silt partings in variable proportions, forming 1-5% of the material

6.8-15.8 Till(?): unoxidized, predominantly silty clay with scattered coarse sand and pebbles as above, but with ubiquitous randomly oriented flecks 1-3 mm diam and distorted thin lenses or partings of light-gray silt, none as extensive as 4 cm diam., constituting 3-5% of the material above 10 ft and 5-10% below; from 12 to 14 ft, lenses or streaks as much as 1 cm thick of reddish-gray sandy silt with rare pebbles; at about 13 ft, a few streaks of silty coarse sand 3 mm thick
No water in this hole

80-USGS1 Augered September 23, 1980. Lat 42°27'00", Long 78°39'21". Altitude 1,425.28 ft Log by Todd Miller from records of U.S. Geological Survey.

0-5.0 ft 4-inch black topsoil. Silty gravel, poorly sorted, silt 5 to 10% up to 3 ft. Olive brown, shale, siltstone, fine sandstone clasts. Fair permeability, moist from recent rains. Poor cohesion, may be due to driving

5.0-11.0 Gravelly silt layer about 4 inch thick at 5 ft, contains moisture, brown silt 40-50%, sand 20%, pebbles 30%. Coarse clasts (1-3 inches) at 8 to 9 ft. Gravelly silt, moist but not sorted. Iron oxides, goethite common. Fair to poor permeability. Gravelly silt, trace of clay at 10 to 11 ft. Gray-brown, dense, poor permeability, semicompact, not sorted. Silt 70%, clasts 30%, trace of sand. Water at 8.5 ft

11.0-13.0 Silty to coarse gravel, silt fills in pore space at 11.0 to 12.0 ft. Silty gravel and gravelly silt (3 inch thick) and quartzite cobble at 12.0 to 13.0 ft. Damp but not saturated

13.0-15.0 Gravel with coarse silt, clasts from 0.1 to 2.0 inches saturated, fair to good permeability. Water at 13.8 ft

15.0-18.0 Silty gravel, coarse clasts at 15 to 16 ft. Silty gravel, coarse clasts about 3 in thick, wet at 16 to 18 ft. Olive gray, silt 25%, gravel 75%, fair permeability

18.0-19.6 Gravel with some silt, loose, good permeability, saturated. Subangular to subrounded

19.6-20.0 Silty gravel, tight, fair permeability. Saturated? silt 15-20%, gravel 80%

20.-23.2 Sandy, gravel with some silt. Good permeability. Gravel 50%, sand 40%, silt 10%. Subangular, saturated. Fine gravel, coarse sand, cleanest gravel yet

23.2-26.0 Till: silt clay matrix, rare pebbles, olive gray, tight, poor permeability, plastic till

Log of 80-USGS1 by R. H. Dana, Jr., from records of New York State Geological Survey.

0-2.0 ft Medium gray gravel and silt (exotic pebbles)

2.0-4.0 Top 7 inches (mottled yellow) grayish brown coarse angular gravel and silt. Bottom 6 inches dark gray, same as above with trace of clay

4.0-6.0 Top 10 inches, two weathered cobbles. Bottom 8 inches soft, wet gray clay

6.0-8.0 No sample. Water level at 7 ft

8.0-10.0 Top 5 inches fractured quartz cobble. 13 inches of damp, gray-brown silt with some angular gravel

10.0-12.0 Top 11 inches very coarse gravel and silt, grading finer. 8 inches of silt with some clay and sand
12.0-14.0 6 inches of quartzite pebbles. 10 inches of gray-brown silt
14.0-16.0 Saturated gray-brown coarse gravel and silt. Gravel with some silt at 15.3 ft. Water at 14 ft 9 inches
16.0-18.0 Saturated light olive gray, silty gravel. Angular, subrounded 3-inch cobbles. Gravel and silt at 17 ft. At 17.5 ft, fossils in light olive-gray silty shale with oxidized red-brown horizons parallel to bedding
18.0-20.0 Incohesive saturated light olive green, coarse gravel with little silt, with pore space. Bottom 6 inches has tight gravel, some silt; impervious, slightly plastic
20.0-22.0 Fine gravel and coarse sand, trace of silt
22.0-23.2 Top 10 inches, same as above. 9 inches of stiff clayey silt with trace of fine gravel
23.2-26.0 2 inches of clay; 4 inches of sand, 17 inches of stoney till with Devonian angular shale clasts

80-USGS2 Augered September 24, 1980. Lat 42°27'03", Long 78°39'23". Altitude 1,427.22 ft. Log by Todd Miller from records of U.S. Geological Survey.

0-12.0 ft 3 inches dark-brown topsoil, grass roots. Silty gravel, olive brown, silt 35%, gravel 60%, sand less than 5%. Silt fills pore spaces. Sandstone and siltstone clasts 0.1 to 3 inches. Some quartzite erratics and goethite. Semi-cohesive, dry, subrounded to subangular. Trace of clay. Less silt (about 25%), very gritty, fair permeability at 8 ft. Moist spots in permeable zones at 10 ft. Trace clay, pea-size gravel predominates at 12 ft. Still fairly permeable. Water at 11.8 ft
12.0-14.2 Gravelly silt with some clay, olive gray brown, silt 70%, gravel 25%, clay 5%. Poor to fair permeability, not saturated. Silty gravel, wet, saturated at 13.9 to 14.2 ft. Silt 20%, gravel 80%
14.2-16.0 Till: 4 inches of oxidized till (olive brown). Unweathered till is olive gray. Very dense, poor permeability. Silt-clay matrix with black, gray, and green pebbles

Log of 80-USGS2 by R. H. Dana from records of N.Y.S. Geological Survey.

0-2.0 ft 2 inches of moist topsoil, 16 inches of loose, slightly damp olive brown soil (gravel with some silt)
2.0-4.0 Medium dense, slightly damp olive brown gravel with some silt
4.0-6.0 Top 5 inches, gravel with some silt, trace of clay, occasional cobble. 9 inches of fine to coarse gravel, some silt, some clay (tighter than top 5 inches)
6.0-8.0 Probably same as above; silt and pulverized rock, not representative sample. Sample not kept
8.0-10.0 Damp olive brown fine gravel and silt, little coarse gravel, trace clay
10.0-12.0 Dense(?), moist, olive brown, fine gravel and silt, trace clay. Clay content slightly higher than at 8 to 10 ft
12.0-14.0 Saturated silt with some gravel, trace clay (grading more clay than above). Bottom 2 inches, gravel and silt
14.0-16.0 2 inches of saturated, oxidized, olive, brown gravel and silt as above. 2 inches very stiff, saturated, oxidized olive brown clay. Remainder very stiff, saturated olive gray clay

80-USGS3 Augered September 24, 1980. Lat 42°27'13", Long 78°39'17". Altitude 1,380.81 ft. Log by Todd Miller from records of U.S. Geological Survey.

0-2.2 ft Silt with some gravel, orange brown, 10 to 20% gravel, semicohesive, oxidized, little clay
2.2-6.2 Sandy gravel, olive brown. Mostly fine gravel 70%, coarse sand 15%, cobbles 15%, loose, trace of silt, subangular clasts, good permeability. Gravel up to 1 inch. Water at 5 ft
6.2-8.0 Till: silt-clay matrix, dense, poor permeability. Olive brown where weathered for first 6 inches. Olive gray, unweathered

Log of 80-USGS3 by R. H. Dana from records of N.Y.S. Geological Survey.

0-2.0 ft Red-brown silt, little gravel
2.0-4.0 Top 3 inches, same as above. 14 inches of loose, dry to damp olive brown sand, some fine gravel, little silt, trace clay
4.0-6.0 Top 4 inches, same as above. Olive-brown coarse gravel and sand, little silt, trace of clay
6.0-8.0 Top 3 inches weathered brown as above. 3 inches gradational to 12 inches of olive brown silt, some clay, trace of fine gravel (till)

80-USGS4 Augered September 25, 1970. Lat 42°27'11", Long 78°39'11". Altitude 1,381.32 ft. Log by Todd Miller from records of U.S. Geological Survey.

0-3.0 ft Silty, gravel, olive brown, poorly sorted gravel 1/8 to 3 inches. Silt fills most of pore spaces, fair permeability. Silt 35-40%, gravel 60-65%. Calcitic siltstone cobble at 2.8 ft
3.0-4.4 Silt (according to driller). Silt with trace of clay at 4 ft, stone free, olive gray

4.4-6.0 Gravel with sand, silt to 5 ft. Good permeability, olive gray. Silty gravel with some fine silt at 5 to 6 ft. Olive gray, gravel 60%, silt 30%, and sand 10%
6.0-10.0 Sandy gravel with some silt, olive brown. Predominantly fine gravel, some fine to coarse sand (30%) and silt (10%). Damp, fair to good permeability
10.0-14.0 Till (Lavery): silt and clay matrix, 10 to 11 ft olive brown; 11-12 ft olive gray. Dense; poor permeability. Clasts 10-15%, mostly fine pebbles of black shale, green siltstone, olive-yellow siltstone. 1-inch sandy pebble layer at 12 ft, 1-3 inch sandy pebble layer at 12 to 12.3 ft

Log of 80-USGS4 by R. H. Dana from records of N.Y.S. Geological Survey.

0-2.0 ft Top 2 inches, topsoil with roots, olive brown gravel and silt, trace clay
2.0-4.0 Three inches of olive-gray siltstone cobble in split spoon
4.0-9.0 Soft silt, trace clay (4 inches), 1 ft of medium to coarse gravel and silt. 4 inches of olive-gray fine sand, trace of clay. 3 ft 4 inches of loose fine gravel, little coarse sand, little silt, trace clay
9.0-12.0 Olive-gray silt, some clay, trace of gravel. 1 inch of gravel, some sand, some silt at 12 ft
4.0-9.0 Soft silt, trace of clay (4 inches), 1 ft medium to coarse gravel and silt. 4 inches of olive-gray fine sand, trace of clay. 3 ft 4 inches of loose fine gravel, little coarse sand, little silt, trace clay
9.0-12.0 Olive gray silt, some clay, trace gravel. 1 inch of gravel, some sand, some silt at 12 ft
12.0-14.0 2 inches of gravel, some coarse sand, trace silt, trace clay. Olive gray silt, some clay, some gravel (black shale fragments). Stoney till

80-USGS5 Augered September 25, 1980. Lat 42°27'12", Long 78°39'14". Altitude 1,370.88 ft. Log by Todd Miller from records of U.S. Geological Survey.

0-3.0 ft 6 inches of black organic topsoil. Sandy gravel with silt, olive brown, poorly sorted. Fine to coarse sand 30-40%, gravel 50-60%, silt 25%. 2-inch layer of fine to medium sand at 2.75 to 3.0 ft. Olive brown, good sorting, trace of pebbles
3.0-5.5 Gravel: fine to medium pebbles, olive brown, trace of sand, good permeability, damp. At 4 to 5.5 ft, gravel, mostly fine pebbles, some coarse sand 15%, trace of silt
5.5-13.9 Gravelly sand from 5.5 to 6.0 ft. Olive brown, fine to coarse sand 65%, fine pebbles 35%. Good permeability, wet. Sandy gravel from 5.5 to 14.0 ft. Olive brown, sand 25%, gravel 75%. Saturated, loose, fair sorting, subrounded to subangular. Pebbles mostly green siltstones. At 10 ft, sandy gravel with silt, olive gray, fine to medium gravel 65%, sand 20%, silt 15%. Fair to good permeability, saturated. Water at 6 ft
13.9-16.0 Till (Lavery): Top 1 ft oxidized olive brown. Below 15 ft olive gray. Silty matrix with some clay, 20% pebbles

Log of 80-USGS5 by R. H. Dana from records of N.Y.S. Geological Survey.

0-2.0 ft 6 inches of black topsoil with roots. 5 inches gradational to 13 inches of yellow-brown fine to coarse gravel, some fine to coarse sand, little silt
2.0-4.0 9 inches of olive-brown gravel as above, 3 inches of fine to medium sand, trace silt, trace clay. 1 foot of olive brown fine gravel
4.0-6.0 21 inches of olive-brown, fine gravel, little coarse sand. 3 inches of olive-brown fine to coarse sand, some fine gravel
6.0-8.0 Fine gravel, some coarae sand, trace clay, trace silt
8.0-10.0 Driving plate
10.0-12.0 Saturated, olive-gray gravel, some sand, little silt. Red shale clasts
12.0-14.0 Fine to medium gravel, little fine to coarse sand, little silt. 1 inch medium brown silt, some clay
14.0-16.0 4 inches of silt, some gravel, little clay. 13 inches of silt, little clay (till). Unweathered gray at 14 ft 11 inches

80-USGS6 Augered September 26, 1980. Lat 42°27'09", Long 78°39'03". Altitude 1,378.39 ft. Log by Todd Miller from records of U.S. Geological Survey.

0-1.0 ft Sandy gravel with trace silt. Brown, fine to coarse gravel, subrounded to subangular. Sand 30%, gravel 70%
1.0-11.3 Fill material: Gray, silt-clay matrix with approximately 20% stones from 2.0 to 2.2 ft. From 2.2 to 6 ft, weathered till, mottled grayish brown. From 6 to 8 ft, weathered till, brown, contains green grass and roots. From 8 to 11 ft, weathered till, olive gray, silty, contains roots, relatively soft, not compact as typical Lavery till. At 11 ft, weathered till, gray-brown, soft
11.3-14.0 Gravel, with some sand and silt at 11.3 to 13 ft. Olive brown, loose, fine to coarse gravel 0.1 to 3 inch. Large clasts tend to be quartzite. Sand 10%, silt 5%. At 13.0 to 13.8 ft, gravelly silt, olive brown. Gravel 35%, sand 15%, silt 50%, poor permeability. At 13.8 ft to 14.0 ft, sandy gravel, predominantly fine gravel and coarse sand. Loose, good permeability

14.0-17.3 Silt with some sand, olive brown, soft. Very fine sand 10% from 14.0 to 15.6 ft. Silt with trace of clay, olive brown, grading to olive gray from 15.5 to 17.3 ft. Moist
17.3-18.0 Till (Lavery): silt-clay matrix, olive gray, dense, compact, poor permeability

Log of 80-USGS6 by R. H. Dana from records of N.Y.S. Geological Survey.

0-2.0 7 inches of silt, some or little clay (unweather fill?). Loose medium-gray fine to coarse gravel, some silt, some sand
2.0-4.0 3 inches of loose gravel as above. 8 inches of medium-dense weathered yellowish, reddish-brown gravel as above. 3 inches of olive brown silt and clay
4.0-6.0 Olive brown silt and clay, trace of coarse gravel (shale, quartzite)
6.0-8.0 Olive brown silt and clay. Quartzite cobble in nose of split spoon
8.0-10.0 Dense silt and clay as above. Quartzite cobble in nose of split spoon
10.0-12.0 11 olive gray-brown silt and clay. 13 inches of olive brown fine to very coarse gravel, some sand, little silt. Goethite cobble in nose of spoon
12.0-14.0 4 inches of silt, little gravel, little sand. Gravel and sand, little silt, trace of clay. 2 inches of coarse sand, little silt at base
14.0-16.0 Gravel, some sand, some silt (4 inches). Very soft olive brown silt (17 inches). 3 inches of silt as above, some clay
16.0-18.0 7 inches of silt as above, grading to more clay. 4 inches of silt as above, grading to more clay, becoming more gray. 9 inches of very stiff olive gray silt and clay

80-USGS7 Augered September 28, 1980. Lat 42°27'01", Long 78°39'09". Altitude 1,392.73 ft. Log by Todd Miller from records of U.S. Geological Survey.

0-1.5 ft 1 inch of grass on top. Silty clay with some pebbles. Dark brown, poor permeability. Roots down to 7 inches
1.5-2.1 Gravelly silt, olive brown, loose, trace of sand, dry. Cobbles up to 3 inches. Silt 50%, gravel 45%, sand 5%
2.1-3.9 Silty gravel with some sand. Olive brown, damp. Fine to coarse gravel 80%, silt 15%, sand 5%. Good permeability
3.9-4.3 Gravelly sand, saturated, olive brown. Gravel 35%, silt 5%, sand 60%. Fair permeability. Water at 4 ft
4.3-5.0 Gravelly silt, sticky. Fine to coarse gravel 20%, silt 80%, trace of clay
5.0-5.8 Gravelly sand with silt, olive brown, saturated. Sand 60%, silt 20%, gravel 20%
5.8-8.0 Till (Lavery): olive brown first 3 inches. Tight, dense, silty clay matrix. Pebbles 10%, poor permeability. After first 3 inches turns olive gray

Log of 80-USGS7 by V. Ragan from records of N.Y.S. Geological Survey.

0-2.0 ft Damp, brown silt, trace clay. Roots penetrate to 7 inches. Bottom 3 inches grading more medium to coarse angular to subangular gravel
2.0-4.0 3 inches of brown silt, some medium to coarse gravel. 1 ft 1 inch of brown coarse angular gravel, some sand. Water at 3 ft 11 inches
4.0-6.0 6 inches of wet brown sand and gravel. Grading more medium to coarse gravel. 2.5 inches of stiff brown silt, some gravel at base (weathered till)
6.0-8.0 Stiff brown-gray silt, trace of medium to fine gravel, trace of clay (unweathered till)

80-USGS-8 Augered September 29, 1980. Lat 42°26'56", Long 78°39'19". Altitude 1,416.78 ft Log by Todd Miller from records of U.S. Geological Survey.

0-2.0 ft 1-inch of grass on top. Gravelly silt with sand. Dark brown, poor sorting, subrounded to subangular clasts. Gravel 30%, silt 50%, sand 20%
2.0-3.0 Gravelly sand, loose, olive brown, sand 80% (mostly coarse sand), fine to medium gravel 20%, good permeability
3.0-4.5 Gravelly silt, dark brown, tight, fair permeability, sand and gravel 20%, silt 80%. Occasional 3-inch cobble
4.5-6.0 Sandy gravel with trace silt, olive brown, poorly sorted, fine to coarse gravel 65%, fine to coarse sand 35%, silt 5%
6.0-8.0 Sandy gravel with silt, olive brown, poorly sorted, fine to coarse gravel 60%, fine sand 25%, and silt 15%. Damp, subangular to subrounded, clasts
8.0-10.0 Silty sandy gravel, brown, poor sorting, about equal portions of fine sand and silt, 25% fine to medium gravel. Fair permeability
10.0-12.0 Silty sandy gravel, olive brown, poor sorting, about equal portions of fine sand and silt about 20%, gravel 60%.
12.0-12.7 Sandy gravel with silt, olive brown, saturated, fair permeability
12.7-13.1 Gravel, olive brown, well sorted, some sand, saturated. Good permeability
13.1-13.7 Sand, olive brown, well sorted, saturated. Grades from coarse sand to fine sand toward bottom
13.7-14.1 Silt with some sand and clay, olive brown, soft, saturated
14.1-16.0 Gravelly sandy silt, flows, saturated, olive brown, grades sandier. Sandy silt at 15.0 to 15.7 ft. Sand with some gravel, loose, saturated, grayish brown at 15.7 to 16.0 ft. Mostly coarse sand, some fine gravel
16.0-17.0 Sandy silt with some gravel, olive brown. Silt 60%, sand 30%, gravel 10%, saturated

17.0-18.2 Gravel with some sand, trace silt, fine to coarse gravel 90%, sand 9%, silt 1%. Good permeability
18.2-21.0 Silty gravel, olive gray, some sand 10%, tight, fair permeability. Gravel 60%, silt 30%. Gravel is fine to medium. Silt fills most of pore space. Bottom 3 inches silty sand
21.0-23.0 Till(Lavery): top 3 inches saturated. Silt/clay matrix 80%, pebble clasts 15%, sand 5%. Peds (cleavage). Tight, dense, poor permeability

Log of 80-USGS8 by V. Ragan from records of N.Y.S. Geological Survey.

0-2.0 ft 2 inches of dark brown silt and sand. 10 inches of brown coarse subangular gravel, grading to cobbles
2.0-4.0 2 inches of damp dark brown sand, some fine to coarse subangular gravel. Red-brown silt, some gravel, occasional cobble
4.0-6.0 5 inches of silt as above, trace of fine sand. 8 inches of moist, red-brown, gravel, some sand, some cobbles
6.0-8.0 Slightly damp, brown fine to medium gravel, some sand, little silt. Grading to more silt
8.0-10.0 9 inches of fine to medium gravel as above. 5 inches of coarse angular gravel, trace sand, trace silt at 9 ft
10.0-12.0 3 inches of damp brown fine to coarse gravel, some silt, little sand at 11 ft
12.0-14.0 7 inches of gravel as above. 3 inches of saturated coarse sand, trace of medium gravel. 8 inches of saturated brown medium to coarse sand. 4 inches of saturated brown silt and sand
14.0-16.0 20 inches of saturated brown silt and sand, trace of fine to coarse angular gravel. 3 inches of saturated dark brown coarse sand, some fine to coarse gravel
16.0-18.0 6 inches of saturated brown silt and sand, trace of gravel. 3 inches of fine to coarse angular gravel, trace of silt, trace sand at 17 ft. 4 inches of saturated brown coarse angular gravel, trace silt, trace sand at base
18.0-20.0 4 inches of gravel as above. 7 inches of medium stiff fine to coarse gravel and silt, trace sand. 5 inches of loose dark gray gravel, some silt, trace medium sand at base
20.0-22.0 3 inches of loose gray fine to coarse angular gravel, trace silt, trace sand. 3 inches of gray medium sand, trace of silt. Silt, grading to less sand. Bottom 2 inches, gray silt, trace of fine sand, occassional angular medium gravel
22.0-24.0 9 inches of gray clay and silt, trace of fine sand (till). 3 inches of firm gray clay, trace of medium angular gravel

80-USGS9 Augered September 30, 1980. Lat 42°26'51", Long 78°39'16". Altitude 1,396.00 ft. Log by Todd Miller from records of U.S. Geological Survey.

0-1.5 ft Top 8 inches dark brown topsoil, silt with trace of gravel. Below topsoil, silt with some gravel, mottled orange brown and olive brown, fine to coarse gravel 10%
1.5-4.0 Silty gravel, mottled. Fine to coarse gravel 60%, silt 40%. Dry, fair permeability. Some sand 15%, gravel 50%, silt 35% at 3 ft grading into finer matrix of silt/clay with trace sand, gravel 50%. Moist
4.0-8.0 Till (Lavery): top 4 inches weathered brown, predominately silt matrix with some clay. Tight, dense. Silt 60%, clay 25%, small pebbles 10-15%. A sandy zone 2 inches thick at 5.2 to 5.4 ft. Wet, poor permeability
8.0-12.5 Till (Lavery): Olive gray, silt/clay matrix, predominately silt, dense, tight, poor permeability. Cleavage (Peds), clasts dominantly fine pebble size, green, black siltstone and shale 15%. Round to subrounded pebbles. 0.5-inch sandy zone of very fine sand at 11.50 to 11.55 ft. Dry
12.5-16.0 Till (Lavery): olive gray, silt matrix with some clasts, dense, plastic, poor permeability. No sand layers
16.0-22.0 Till (Lavery): olive gray, silt matrix with some clay, plastic, dense, tight. Silt/clay 80%, fine pebbles 20%. Poor permeability. Some cleavage (peds). Black and green siltstone clasts, rate large pebble size stone. No sand or gravel units

Log of 80-USGS9 by V. Ragan. Log from records of N.Y.S. Geological Survey.

0-2.0 Top 3 inches, damp brown silt (top 7 inches organic rich). 12 inches of damp orange-brown silt, a little gravel. 6 inches of orange-brown gravel, some silt, occasional cobble
2.0-4.0 4 inches of damp olive-brown, fine to coarse gravel and silt, trace of coarse sand. 7 inches of olive brown coarse angular, a little silt, trace coarse sand, trace clay, occasional cobble. 3 inches of olive-brown, medium to coarse gravel and silt at bottom, trace of medium to coarse sand, trace clay
4.0-6.0 2 inches of stiff brown silt, some clay, trace of medium gravel (till). 6 inches of gray silt as above. 2 inches of gray medium sand, trace silt. 2 inches of gray medium to coarse gravel, little medium sand, trace of silt at bottom

6.0-8.0 5 inches dark gray, medium to coarse gravel, a little medium sand and silt. 2.5 inches siltstone cobble at 6.7 ft. 1.5 inches of damp dark-gray silt, some medium angular gravel at 7.5 ft
8.0-10.0 Slight damp firm, gray silt, a little angular medium to coarse gravel, trace of clay. Bottom 2 inches grading slightly more clay
10.0-11.0 Damp olive gray silt, a little medium subangular gravel, little clay. Compact, poor permeability
11.0-12.0 Top 2 inches same as above. Next 1 inch same as above, a little very fine sand. Next 9 inches same as 10 to 11 ft
12.0-14.0 Silt, as above. Bottom 2 inches grading to a little less gravel
14.0-16.0 Silt, as above
16.0-18.0 Firm olive gray silt, some clay, a little medium to coarse angular gravel, occasional cobble. Clay increases
18.0-20.0 Damp, firm, compact olive-gray clay, some silt, some angular medium to coarse gravel
20.0-22.0 Damp, firm, compact olive-gray clay, a little fine to coarse gravel, few large weathered sandstone cobbles

80-USGS10 Augered September 30, 1980. Lat 42°26'45", Long 78°39'13". Altitude 1,400.5 ft. Log by Todd Miller from records of U.S. Geological Survey.

0-1.0 ft 1 inch of topsoil, dark brown, organic with silt and clay
1.0-2.5 Silty sandy gravel, mottled orange-brown to olive-brown. Poor sorting, poor permeability. Gravel 40%, sand 35%, silt 25%
2.5-7.0 Till (Lavery): olive brown, weathered, breaks apart more easily than unweathered. Predominantly silt matrix with some clay froming about 80% of core, fine to medium pebbles form 20%. Clasts predominantly black siltstone and shale. Poor permeability, plastic, dense, tight. Entirely weathered roots to 4.5 ft, orange oxidized stains throughout core, fractures are route for water penetration vertically. Walls of pore spaces stained. Weathering diminished to trace, dry
7.2-24.0 Till (Lavery): olive gray, unweathered, predominantly silt matrix form 60%, with some clay (20%), and fine to medium pebbles (20%). Plastic dense, tight, poor permeability. At 10 to 11 ft, till stonier (25% of core), dry. At 12 ft, 15-20% stones, occasional large pebble. At 15 ft, till getting damper. At 17 ft, till moist with slightly more clay, more cohesive
24.0-29.8 Till (Lavery): olive gray, soft, moist, sticky, plastic silt/clay matrix form 80%, pebbles (mostly fine size) 20%. Moist soft till resulting in less recovery, more compaction. Saturated, occasional cobble. Bottom 2 inches gravelly silt
29.8-31.0 Gravelly silt with trace clay and sand. Olive gray, sticky, moist. Gravel form 20% of core, sand 5%, silt/clay 75%. Poor permeability
31.0-32.8 Silt, olive gray, saturated, well sorted, no stones. Water level at 28.4 ft below land surface datum, good yield
32.8-33.0 Sand with trace of silt, well sorted, olive gray, saturated
33.0-34.1 Silt, olive gray, saturated, well sorted, no stones, poor permeability
34.1-34.6 Sand (3-inch layer), olive gray, medium to coarse sand, well sorted, saturated, good permeability
34.6-39.3 Silt, olive gray, saturated, well sorted, no stones, poor permeability. Trace of sand from 36 to 36.5 ft, otherwise silt
39.3-41.0 Till (Lavery)
41.0-41.4 Silty sandy gravel
41.4-41.7 Bedrock: shale, olive gray, fissile

Log of 80-USGS10 by V. Ragan from records of N.Y.S.Geological Survey.

0-2.0 ft 12 inches of dark gray silt (topsoil). 7 inches of brown-orange, fine to coarse gravel, some silt, some fine to medium sand
2.0-4.0 4 inches of gravel as above. 7 inches of brown silt, a little fine to medium angular gravel, trace sand, trace clay (brown weather till)
4.0-6.0 12 inches of brown silt as above. 3 inches of gray-brown silt as above at 5 ft
6.0-8.0 5 inches gray-brown silt as above, a little fine to coarse angular gravel, trace sand, trace of clay, occasional cobble. 5 inches of firm olive-gray silt, a little fine to medium gravel, trace of clay at 7.3 ft
8.0-10.0 2.5-inch recovery from spoon; moist olive-gray silt as above. 18 inches recovered from cleanout spoon; olive-gray silt, some medium to coarse gravel, little clay
10.0-12.0 Damp, firm gray silt, a little fine to coarse gravel, a little clay, occasional cobble
12.0-14.0 Damp, firm gray silt, some medium to coarse gravel, a little clay. Gravel primarily black and green siltstone and shale
14.0-16.0 Silt, as above, slightly damper
16.0-18.0 Silt, as above, with some clay
18.0-20.0 Silt, as above, a little fine to coarse gravel, little clay
20.0-22.0 Silt, as above, moist
22.0-24.0 Moist, soft olive gray silt, some clay, a little fine and coarse gravel
24.0-26.0 Moist, soft olive gray silt, some clay, some medium to coarse angular gravel
26.0-28.0 Silt, as above, though not as wet
28.0-30.0 7 inches of moist, soft olive gray silt, some clay, trace of medium and firm gravel. 2 inches of coarse angular gravel, some silt at 29.3 ft

30.0-32.0 7 inches of damp medium firm gray silt, a little fine gravel, trace of sand (lacustrine?). 4 inches of firm gray silt (no sand or gravel)

32.0-34.0 7 inches of moist medium soft silt as above. 1 inch of medium to coarse sand at 32.7 ft. 8 inches of silt as above

34.0-36.0 1 inch of medium-soft gray silt as above. 2.5 inches of saturated medium to coarse sand, trace of silt. 12.5 inches of damp, soft to medium firm gray silt as above

36.0-38.0 6 inches of saturated gray silt and medium to coarse sand. 11.5 inches of moist gray silt (no stone). 0.5 inch of gray gravel and silt at 37.7 ft

38.0-40.0 2 inches of loose saturated gray silt. At 38.8 ft, 5 inches of firm moist gray silt. At 39.5 ft, 3 inches of firm damp, gray silt, a little medium to coarse gravel (till?)

40.0-41.7 3 inches of soft, saturated gray silt, trace fine gravel, trace of clay. At 40.7 ft, 5 inches of soft saturated, gray silt, trace of fine gravel, trace of sand. 3 inches of coarse sand, trace of fine to medium gravel. 4 inches of gray shale

82-USGS 1A Drilled Oct. 2, 1982. Lat 42°26'49", Long 78°39'02". Altitude 1,382.5 ft. Log from U.S. Geological Survey Study of the Nuclear Regulatory Commission-licensed burial ground.

0-16.3 ft Augered to 16.3 ft. No split-spoon samples collected

16.3-18.5 Till: Uniform, moist, pebbly silt and clay. Dark gray to gray (10YR-4/1 to 5/1). Pebble content 2-3%. Average size 0.25-0.50 cm. Largest are 2 greenish-gray subrounded to rounded shale fragments 3 and 5 cm diam. No coarse sand in the 16.5- to 17.5-ft range, as in 82-USGS 1C. Moisture content increases from 17.8 to 18.5 ft

82-USGS 1B Drilled Oct. 2, 1982. Lat 42°26'49", Long 78°39'02". Altitude 1,382.5 ft. Log from U.S. Geological Survey Study of the Nuclear Regulatory Commission-licensed burial ground.

0-14.2 ft Augered to 14.2 ft. No split-spoon samples collected

14.2-16.3 Till: Unweathered pebbly silt and clay. Dark gray to gray (10YR-4/1 to 5/1). Pebble content 5-10%. Average size 0.5-1.0 cm. Large dark gray (5GY-5/1) shale pebbles (3-5 mm range) at 14.8 to 15.0 ft and 15.2 to 15.0 ft. Greenish-gray (5GY-5/1) breakdown around large shale fragment at 15.0 ft

16.3-18.7 Till: Unweathered gray to dark gray (10YR-5/1 to 4/1) pebbly silt and clay. Pebble content 3-5%. Average size 0.25-0.5 mm. Largest are in 2.5 to 3.5 cm range. No coarse sand lens, pod, or bleb as in 82-USGS 1C

18.7-30.8 Augered to 30.8 ft. No split-spoon samples collected

30.8-33.0 Till: 0.2 ft-cuttings. Unweathered dark grey (10YR-4/1) pebbly silt and clay. Pebble content 2-3%. Average size 0.25-0.5 cm. Largest is 1.5 cm. Rounded dark gray (10YR-4/1) coarse silt bleb at 31.7 ft, 1.5 to 2 mm diam.

33.4-35.7 Till: Dark gray to gray (10YR-4/1 to 5/1) pebbly silt and clay. Pebble content 1-2%. Average size 0.25 to 0.5 cm. Largest, 3.5 cm, is flat greenish-gray shale fragment at 35.5 ft. Matrix is moist. Clay content appears to increase. Gray coarse silt bleb scattered from 33.4 to 34.4 ft. Average size in 0.5 to 1 cm range. No water between 33.5 and 34.5 ft, as in 82-USGS 1C

82-USGS 1C Drilled Sept. 30-Oct. 1, 1982. Lat 42°26'49", Long 78°39'02". Altitude 1,382.5 ft. Log from U.S. Geological Survey Study of Nuclear Regulatory Commission-licensed burial ground.

0-3.4 ft Till: Oxidized dry silt and clay. Mottled dark grayish-brown to dark brown (10YR-4/2 to 4/3) throughout core. Dark organic material interspersed. Yellowish-brown to brownish-yellow (10YR-5/8 to 6/8). Iron oxide breakdown zones around many clasts. Also olive yellow (2.5Y-6/6) and gray (N/6) breakdown zones around several clasts and blebs. Pebble content 5%. Average size 0.5 to 1.0 cm

3.4-4.8 Till: Oxidized dry silt and clay. Mottled between gray (10YR-5/1) to dark brown (10YR-4/3). Small clasts, breakdown zones and blebs scattered throughout core. About 5%. Average size 0.5-1.0 cm. Yellowish-brown (10YR-5/8 and 6/8), pale yellow (5Y-7/4) and gray (N/6). Organic material interspersed. Largest pebbles are in 1.5- to 2-cm range. Low moisture content; breaks up easily

4.8-7.7 Till: Less oxidized dark grayish-brown (10YR-4/2) pebbly silt and clay. Clay content decreasing. Pebble content less than 5%. Average size 0.25 to 0.5 cm. Largest pebbles 2 to 3. Some mottling still present but decreasing rapidly. Olive (5Y-5/6) blebs less than 1 cm and light gray (2.5Y-7/0) breakdown zones, 0.5 to 1.0 cm

7.7-9.0 Till: Unweathered gray (10YR-5/1) pebbly silt and clay. Brownish-yellow (10YR-5/6) fine to coarse sand lens at 7.7 to 7.9 ft. Altitude 45° from normal. Coarse silt to fine sand deformed lens at 8.4 to 8.6 ft (oriented horizontal). Two coarse silt to fine sand lenses (oriented vertical) 0.5 cm thick at 8.7 ft. Pebble content less than 3%; average size 0.5 to 1.0 cm. Largest pebble 1.0 to 1.5 cm at about 9 ft

Table 3.--Logs of Wells and Test Borings (continued)

9.0-11.1	Till: Unweathered uniform dark-gray (10YR-4/1) pebbly silt and clay. Pebble content less than 2%. Average size less than 0.25 cm. Large pebble (4.5 mm) at 9.0 to 9.1 ft. Yellowish-brown coarse silt-fine sand lens oriented vertical. Light gray (10YR-7/1) blebs of silt and breakdown zones 0.2 to 1 mm thick scattered throughout core. Weak red (10YR-5/4) exotic pebble 1.5 cm at 11.1 ft
11.1-12.9	Till: Dark-gray pebbly silt and clay (10YR-4/1). At 12.4 ft, gray (5YR-6/1) coarse silt to fine sand pod, oriented 45° from normal, 0.1 to 0.2 cm. At 12.45 ft, gray breakdown pod with some orientation. Scattered throughout core are silt to fine sand blebs. At 11.6 ft, light gray (5YR-7/1) breakdown, 0.5 to 1.0 cm. Pebble content less than 5%; average size 0.75 to 1.0 cm; largest 2 cm. Several pebbles in 1.5 to 2 cm range
13.1-15.0	Till: Matrix same as above. From 13.1 to 13.6, pebble content about 10%; decreasing to less than 3% at 14.1 to 14.6 ft, and increasing back to 5-10% at 14.6 to 15.1 ft.
15.0-17.0	Till: Moist, pebbly dark-gray silt and clay. Pebble content less than 5% to 10%, average pebble size from 0.25 to 3 cm. Largest pebbles 3.0 to 4.5 cm. Silt content increases at 16.3 to 16.5 ft. clay content increases at 16.5 to 16.9 ft. Saturated fine to medium sand at 16.9 to 17.0 ft. Water in hole
17.0-18.9	Till: Mainly dark gray to gray clayey silt. From 17.05 to 17.45 ft fine sand (5 cm) grades to coarse silt then clayey silt. From 17.45 to 18.7 ft, till (clayey silt) grades to silty clay at 18.2 to 18.3 ft. Pebble content about 3%; average size 0.5 to 1.25 cm; largest pebble is 3.5 cm
18.9-21.0	Till: Uniform, very moist dark-gray to gray pebbly silt and clay. Pebble content 2-3%; average size is 0.25 to 0.5 cm; largest is 3 cm
21.1-23.1	Till: Matrix same as above. Pebble content ranges from less than 1% to 5%; average size ranges from 0.1 to 1.25 cm. Light olive bleb (1.25-0.25 cm) at 22.7 ft
23.1-24.6	Till: Fairly uniform dark-gray pebbly silt and clay. At 23.4 to 23.6 ft, saturation, coarse silt-fine sand content increases. Pebble content 1-2%; pebble size 0.5-0.75 cm
24.6-25.1	Till: Same as above
25.1-27.1	Till: Moist dark gray (10YR-4/1) pebbly silt and clay. Greenish-gray (5G-S/Y) fine to medium sand pod (6 cm x 1.5 cm) at 25.2 to 25.3 ft. Greenish-gray fine sand pod (1 cm x 1 cm) at 25.75 ft. Pebble content 2-3%, average size 0.5 to 1.0 cm. Greenish-gray (5BG-5/1) flat shale pebble (4.5 x 4 cm) at 26.3 ft
27.1-29.2	Till: Dark gray to gray pebbly silt and clay. Pebble content 2-3%, average size 0.5 to 2.5 cm. Largest pebbles 3.5 cm. Pebbles are subrounded to rounded
29.2-31.2	Till: Same as above except average pebble size is 0.25-0.5 cm. Very dark-gray (5Y-S/1), large (3 cm long axis) broken shale fragments at 30.4 to 30.5 ft
31.4-33.7	Till: Same as above but pebble content is 1-2% range. Large pebble is 2 cm. Fine sand at 33.7 ft. Water in hole
33.7-35.2	Till: Primarily dark-gray to gray pebbly silt and clay as above. Dark gray to gray fine sand zone at 33.7 to 34.0 ft. Dark gray coarse silt to fine sand zone (0.5 cm) at 35.1 to 35.2 ft
35.2-37.2	Till: Dark-gray pebbly silt and clay as above. Dark gray fine sand lens with some silt at 35.2 to 35.3 ft. Dark gray fine sand lens with some silt at 36.2 to 36.3 ft. Dark gray fine sand with some silt at 37.0 to 37.1 ft
37.2-39.0	Till: Dark-gray pebbly silt and clay as above. Dark gray to gray fine sand lens (deformed), about 1 cm thick, at 38.0 to 38.2 ft. Thin deformed fine sand lens oriented 60° from normal at 37.2 to 37.3 ft
39.0-41.3	Till: Uniform dark-gray pebbly silt and clay as above. Light gray bleb (1 x 1.5 cm) at 41.2 ft. Light red (10R-6/6) pebble, 2 cm diam., at 40.9 ft
41.3-43.0	Till: Dark-gray to gray pebbly silt and clay as above. Dark-gray fine sand lens (deformed), 1 x 4 cm long, at 41.85 to 42.0 ft. Deformed edge of coarse silt to fine sand stringer, 0.25-0.5 cm wide x 10 cm long, oriented at 90° from horizontal at 42.4 to 42.2 ft
43.0-45.0	Till: Dark-gray to gray pebbly silt and clay as above. Pebble content increases to 3-5%
45.0-47.1	Till: Dark-gray to gray pebbly silt and clay as above. Largest pebbles 3.5 cm
47.1-49.0	Till: Dark-gray to gray pebbly silt and clay as above. Dark-gray saturated fine sand with some silt at 48.4 to 49.0 ft
49.0-50.0	No sample recovered

82-USGS 1D Drilled Sept. 24, 1982. Lat 42°26'48", Long 78°39'02". Altitude 1,390.5 ft. Log from U.S. Geological Survey study of the Nuclear Regulatory Commission-licensed burial ground.

0-51.3 ft	Augered to 51.3 ft. No split-spoon samples taken. Water in hole at 50 ft
51.3-54.0	Till: Dark gray (10YR-4/1) calcareous moist pebbly silts and clay. Pebble content about 3%; average size less than 0.25 cm. Largest is 2 to 2.5 cm
54.0-56.1	Till: Same as above except pebble content increases to 5-7% range; average size 0.25 to 0.5 cm. Largest is 3 cm. Silt content increases
56.1-58.0	Till: Same as above. A few olive (5Y-5/4) blebs (0.2 x 0.5 cm) scattered in core

58.0-60.0	Till: Same as above. Olive (5Y-5/4) blebs and breakdown zones scattered in core. An especially large zone around shale fragment at 59.9 ft. Some light gray (10YR-7/1), light olive-brown (25Y-5/0), and reddish-brown (25YR-4/4) blebs also interspersed in core
60.0-62.0	Till: Calcareous dark gray pebbly silt and clay, less moist. Very pebbly clayey silt pods at 60.4 to 60.6 ft; 60.9 to 61.25 ft; 61.3 to 61.5 ft; and 61.65 to 61.75 ft. Pebble content in pods 30-50%; average size 0.25 to 0.5 cm. Largest is 2 cm. Matrix material has pebble content of 3-5%; average size 0.25 to 0.5 cm. Large olive (5Y-5/4) breakdown zone along edge of core from 60.7 to 61.0 ft. Some olive bleb scattered throughout core
62.0-63.7	Till: Calcareous dark-gray moist pebbly silt and clay. Pebble content about 10% to 63.0 ft and about 5% from 63.0 to 63.7 ft. Largest pebbles about 2 mm. Few olive (5YR-5/4), olive brown (2.5Y-4/4), and dark red (2.5YR-3/6) present
64.0-65.9	Till: Same as above. Pebble content 5-10%. Average size 0.25 to 0.5 cm. Olive, olive brown, light gray blebs, and wisps of silt and clay scattered throughout core.
65.8-67.8	Till: Calcareous dark-gray moist pebbly silt and clay. From 65.8 to 86.3 ft, pebble content is less than 2% to 66.7 ft, till is relatively pebble free; and to 67.8 ft, pebble content is 5-7%. Average size <0.2 cm to 0.5 cm. Largest pebbles are 3.0 to 3.5 cm. Olive-yellow (2.5 Y-6/6) staining around a few pebbles from 67.3 to 67.8 ft. Dark-red (2.5YR-3/6) bleb at 67.2 ft
67.9-69.7	Till: Same as above. Very pebbly (about 10%) from 67.9 to 68.8 ft. Average size 0.5 to 1.0 cm; several pebbles are 2.5 to 4.5 cm. Large olive gray (5Y-5/2) breakdown zone around shale fragment along edge of core from 68.2 to 68.3 ft. From 68.8 to 69.7 ft, pebble content decreases to 5%. Average size <0.25 cm, largest is about 2 cm
69.9-71.9	Till: Same as above. A few olive (5Y-5/4), pale yellow (2.5Y-7/4) blebs throughout core
71.9-73.9	Till: Same as above except that pebble content and size decrease from 5-2% below 72.4 ft. A few olive (5Y-5/9) and dark-red (2.5YR-3/6) blebs scattered in core from 71.9 to 72.9 ft
74-75.6	Till: Calcareous dark-gray moist silty clay. Pebble content between 3-5%. Average size from 0.25 to 0.5 cm. Largest are 2 to 2.5 cm
76.0-77.7	Till: Same as above except pebble content decreases to 2-3% from 75 to 77.0 ft and increases to 5-6% from 77 to 77.7 ft. Average size is as above, but largest pebble is 1.5 cm. Reacts strongly to HCl
77.7-79.7	Till: Calcareous dark-gray relatively dry pebbly silt and clay. Pebble content increases to 20% at 78.9 ft; decreases to 10% at 79.2 ft; and is pebble free to 79.7 ft. Zone between 79.2 and 79.7 ft reacts less vigorously to HCl and appears microlaminated
79.7-81.7	Till: Calcareous dark-gray moist pebbly silt and clay. Pebble content increases to about 2%. From 80.7 to 80.9 ft is a light gray (10YR-6/1) fine sand zone, 1.0 cm thick, shaped upward, well-sorted, slightly moist. Some light-gray deformed fine sand pods and bleba are interspersed in core
81.7-83.9	Silt and sand: Microlaminated clayey silt from 81.7 to 82.7 ft. Silt is primarily dark grayish-brown (10YR-4/2) with a few dark-gray (10YR-4/1) bands. Silt content increases to 82.7 ft. From 82.7 to 82.8 ft is dark grayish-brown fine sand that grades to dark grayish-brown clayey silt at 82.8 ft. Silt grades back to well-sorted dark-grayish brown fine sand at 83.2 ft. Sand is friable and only slightly saturated
84.0-86.0	Sand and silt: From 84 to 84.8 ft, laminated dark grayish-brown (2.5Y-4/2) fine sand with silt. Breaks up easily along laminations. From 84.8 to 85.3 ft, laminated dark grayish-brown siltier fine sand which grades to a grayish-brown (2.5Y-5/2) well-sorted fine sand. Moisture content same as at 81.7 to 83.7 ft
86.0-86.7	Sand: Calcareous dark grayish-brown fine sand with some gravel. Sand is fairly dry. Largest gravel is about 2 cm range
88.0-89.0	Sand and silt: From 88 to 88.5 ft, dark gray to grayish-brown coarse silt and fine sand with some coarse sand (<1%). Silt and sand grades to very silty fine sand and gravel at 88.5 ft. Largest gravel is 2.0 to 3.0 cm. Some dark reddish-brown fragments interspersed in matrix. Yellowish-brown and olive breakdown zones around some shale fragments
90.0-91.0	Sand and silt: Laminated calcareous fine sandy silt and silty fine sand grading from dark gray to dark grayish-brown. From 90.1 to 90.6 ft, silt and moisture content increase slightly, grading back to less silt and more fine to medium sand at 90.6 to 91.0 ft
91.4-92.4	Sand and silt: Laminated calcareous fine to medium sand and coarse silt. Laminations are slightly deformed (probably by coring). Material alternates between light brownish-gray (10YR-6/2) sand and gray (10YR-5/1) silt. Some laminations are light olive brown (2.5Y-5/6). Very sandy zone from 92.0 to 92.2 ft. Core breaks up easily

Table 3.--Logs of Wells and Test Borings (continued)

82-USGS 1D (continued)

96.2-98.1	Standing water in hole, approximately 30-inches, removed due to water put into hole to retrieve Shelby tube caught in hole in October 1982. Dark gray (10YR-4/1) silty sand. Few pebbles all <1 mm. In nose of spoon, dry fine sand interfingered with what appears to be varved clays. Sand is dark grayish brown (10YR-4/2). Clay is dark gray (10YR-4/1). Olive (5Y-4/3) stains around rock fragments. Weak red (10R-4/4) blebs
98.5-99.0	Fine dark brownish gray (10YR-4/2) sand
99.0-100.7	Till: Dark-gray (10YR-4/1) pebbly silty clay. Pebble content <3%; largest are 1.5 mm. Varved clayey silt at 99.7 to 100.7 ft
101.5-102.7	Till: Dark gray clayey silt. Pebble content about 2%; average size 0.25 to 0.5 mm
102.8-103.7	Till: Same as above
103.7-105.0	Dark-gray to gray silt and clay that appear to be horizontally laminated concave downward, probably from coring drag. Could be varved, but contains 1-2% pebbles (0.1 mm diam.)
105.0-106.0	Moist dark-gray to gray silt and clay, 1% pebbles. Like till but with horizontal laminations. Thin sandy silt zone from 105.2 to 105.3 ft appears moister
106.0-107.0	Till: Dark gray and gray pebbly silt and clay with 1 to 2 percent pebbles. Average size is 0.5 to 1.5 mm. Some exotic reddish brown (5YR-4/3) and yellowish red (5YR-4/6) rock fragments
107.0-111.0	Till: Same as above

82-USGS 2A Drilled Sept. 30, 1982. Lat 42°46'47", Long 78°39'04". Altitude 1,387.5 ft. Log from U.S. Geological Survey Study of Nuclear Regulatory Commission-licensed burial ground.

0-19.0 ft	Augered to 19 ft. No split-spoon samples taken
19.0-20.6	Till: Gray (10YR-5/1) pebbly silt and clay. Pebble content <3%. Average size 0.25-1.0 cm; largest pebble is 1.5 cm. Light olive brown (2.5 Y-5/6) rims around clasts at 19.25 and 19.8 ft. Rim and clasts are 0.25 x 0.75 cm
20.6-22.2	Till: Gray pebbly silt and clay as above. Pebble content about 5%. Average size 0.5 to 1.5 cm; largest is 2 cm. Pebbles are subrounded to rounded. Light gray (10YR-7/1) breakdown zones around many clasts

82-USGS 2B Drilled Sept. 30, 1982. Lat 42°26'47", Long 78°39'04". Altitude 1,387.5 ft. Log from U.S. Geological Survey study of Nuclear Regulatory Commission-licensed burial ground.

0-37.4 ft	Augered to 37.4 ft. No split-spoon samples collected
37.4-39.0	Till: Moist, uniform, gray (10YR-5/1) pebbly silt and clay. Pebble content 1-2%. Average size <0.5 cm. Three pebbles are as large as 2.5 cm

82-USGS 2C Drilled Sept. 24, 28, 29, 1982. Lat 42°26'47", Long 78°39'04". Altitude 1,387.5 ft. Log from U.S. Geological Survey study of Nuclear Regulatory Commission-licensed burial ground.

0-3.0 ft	Till: Weathered, oxidized grayish-brown (10YR-5/2) pebbly silt and clay. Pebble content about 5%. Average size 0.5 to 2.0 cm. Pebbles are subrounded to rounded
3.0-6.0	Till: Weathered, oxidized dark gray brown (10YR-4/2) pebbly silt and clay. Pebble content about 10%. Average size 0.5 to 2.5 cm. Pebbles are subangular to subrounded. A few exotic red (10R-5/6) yellow (5Y-7/8) and greenish-gray (5GY-5/1) fragments present. Some reddish-yellow (5Y-7/8) iron oxide and black to dark brown manganese oxide staining interspersed throughout core
6.0-9.0	Till: Gray (10YR-5/1) moist pebbly silt and clay. Dry oxidized fine to medium sand zone, 0.8 cm thick. Pebble content lower, 3%. Average size 0.5 to 1.0 mm. Largest is 2 cm
10.5-12.5	Till: Gray (10YR-5/1) silt and clay. Oxidized yellow brown (10YR-5/8) fine sand at 10.7 ft. Oxidized yellow (7.5YR) fine sand at 11 ft. Gray coarse silt wisp at 11.25 ft. Sand zones are stained with iron oxide and are 0.5 to 1.0 cm thick. Pebble content <2%. Average size less than 0.25 cm. Some pebbles are about 1.5 cm
12.5-13.3	Till: Moist dark gray (10YR-4/1) silt and clay. Pebble content <5%. Average size <0.25 cm. Many pebbles have oxidized rims
13.5-16.0	Till: Moist dark-gray uniform silt and clay. Pebble content <5%. Average size <1 cm. Iron-oxide staining and small silt blebs interspersed in core
16.0-18.0	Till: Moist dark-gray uniform silt and clay. Pebble content <5%. Average size <0.25 cm. Some pebbles 1 to 2 cm
18.0-20.0	Till: Same as above except silt content increases slightly
20.0-22.0	Till: Same as above except pebble content increases to about 10%. Average size 0.25 to 0.5 cm. Large pebble is 3 cm
22.0-24.0	Till: Dark-gray pebbly silt and clay. Appears to be moister at 22 to 23 ft than at 23 to 24 ft. Pebble content 5-8%. Average size 1 to 2.0 cm. A few light-gray silty blebs, 1 cm diam., are scattered throughout core
24.0-26.0	Till: Same as above except that average size decreases to less than 0.25 cm
26.0-28.0	Till: Uniform dark gray pebbly silt and clay. Pebble content <5%. Average size 0.5 to 1.0 cm. Largest pebbles are 1.0 to 2.5 cm. Greenish-gray (5GY-5/1) coarse silt-fine sand pod, 0.75 x 1 cm, at 27 to 27.5 ft. Greenish-gray coarse silt rims around some pebbles

28.0-30.0 Till: Gray pebbly silt and clay. Coarse silt-fine sand pods, 3 cm across, at 28.5 ft. Pebble content 20% from 28 to 28.8 ft; 5% from 28.8 to 29 ft; <5% from 29 to 30 ft. Average size 0.25 to 1.0 cm. Largest pebbles are 1.0 to 2.5 cm

30.0-32.0 Till: Gray uniform pebbly silt and clay. Moisture content increases slightly between 30.25 and 30.5 ft. Pebble content 5%. Average size 0.5 to 1.0 cm. Greenish-gray (5GY-5/1) fine sand pod, 0.5 x 1.0 cm, at 30.5 ft

32.0-34.0 Till: Gray uniform pebbly silt and clay. Pebble content decreases to about 3%. Pebbles average 0.5 to 1.5 cm and are subrounded to rounded. Largest is about 2.5 cm. A cluster of pebbles forming to 10-15% of core at 32.8 to 32.9 ft

34.0-36.0 Till: Same as above except that from 34 to 34.5 ft, matrix is fairly pebble-free. Pebble content increases to about 5%. Average size about 0.5 cm. Largest pebbles 2.5 to 3.5 cm

36.0-38.0 Till: Same as above except that pebble content is generally smaller. Average is 0.25 to 0.5 cm; largest is 1.5 to 2.0 cm

38.0-40.0 Till: Same as above. Pebble content decreases to about 3%

40.0-42.0 Till: Same as above. Coarse light gray (10YR-7/1) silty rims around some pebbles

42.0-44.0 Till: Same as above except that pebble content increases to about 10% at 42.0 to 42.5 ft and decreases to 5-10% at 42.5 and 44.0 ft

44.0-46.0 Till: Same as above. Light-gray fine to medium sand zone around 2-cm (LA) clast at 54.3 ft. Pebble content generally less than 5% except between 44.6 to 45.0 ft, where it is about 20%. Pebbles are generally large (1.5 to 2 cm) and rounded siltstones, although a large crystalline clast (probably quartz) with micaceous material was present at 4.9 ft. Pale olive rims around some clasts, 1 to 2 cm across, at 45.5 ft

46.0-48.0 Till: Gray uniform pebbly silt and clay. Pebble content less than 5%. Average size 0.5 to 1 cm. Largest pebbles are 1.25 to 1.5 cm although a 3.5-cm siltstone pebble was found at 47.7 ft. Breakdown zones around some clasts

48.0-50.0 Till: Same as above. Olive yellow (2.5Y-6/8) rim around 0.5-cm clast at 48.6 ft

82-USGS 3A Drilled Oct. 18, 1982. Lat 42°26'49", Long 78°39'08". Altitude 1,390.5 ft. Log from U.S. Geological Survey study of Nuclear Regulatory Commission-licensed burial ground.

0-18.2 ft Augered to 18.2 ft. No split-spoon samples collected

18.2-20.3 Till: Calcareous dark gray (10YR-4/1) moist pebbly silt and clay. Pebble content 20-25% at 18.2 to 18.7 ft; 10-15% at 18.2 to 19.25 ft; 3-5% at 19.25 to 20.3 ft. Average size 0.25 to 1.0 cm. Largest is 6 cm with several in 2 to 3 cm range

82-USGS 3B Drilled Oct. 12, 1982. Lat 42°26'49", Long 78°39'08". Altitude 1,390.5 ft. Log from U.S. Geological Survey study of Nuclear Regulatory Commission-licensed burial ground.

0-33.8 ft Augered to 33.8 ft. No split-spoon samples collected

33.8-36.0 Till: Dark gray (10YR-4/1) very moist pebbly silt and clay. Pebble content about 5%. Average size 0.5 to 1 cm. Several large shale fragments in 3 to 4 cm range. Large (2 x 2.5 cm) rounded light-gray clay and silt pod at 35.6 ft

82-USGS 3C Drilled Oct. 8, 12, 1982. Lat 42°26'49", Long 78°39'08". Altitude 1,390.5 ft. Log from U.S. Geological Survey study of Nuclear Regulatory Commission-licensed burial ground.

0-2.0 ft Till: Oxidized dry brown (10YR-5/3) pebbly silt and clay with organic material. Mn and iron oxide staining interspersed through matrix. Pebble content 3-5%. Average size is 0.25 to 0.5 cm. Largest pebbles are 2.5 cm. Material crumbles easily

2.0-4.1 Till: Same as above except that color becomes increasingly grayish (less oxidized) brown (10YR-5/1 and 5/2) between 3.0 and 4.1 ft

4.1-6.2 Till: Partly oxidized dark-gray to dark-brown (10YR-4/1 to 4/3) pebbly silt and clay. Moisture content increases slightly. Pebble content 3-5%. Average size 0.25 to 0.75 cm. Largest pebbles are 1.5 to 2 cm. From 5.45 to 5.8 ft, brown pebbly fine to medium sand zone that is fairly dry and crumbles to touch. Pebble content 15-20%. Average size 0.5 to 1 cm. Largest is 2 cm. Below 5.8 ft, same as 4.1 to 5.45 ft

6.2-8.0 Till: From 6.2 to 6.3 ft, dark-gray pebbly silt and clay grading to more oxidized grayish-brown. Pebble content 2-3%; average size <0.25 cm. From 6.3 to 7.2 ft, highly oxidized yellowish-brown fine to coarse sand with some gravel. Iron and Mn oxide staining interspersed through matrix. Zone is friable. Below 7.2 as at 6.2 to 6.3 ft

8.0-10.0 Till: From 8.0 to 8.5 ft, grayish-brown (10YR-5/4) pebbly silt and clay grades to dark gray (10YR-4/1). Pebble content about 5% average size 0.25 to 0.5 cm. From 8.5 to 8.55 ft, dark gray well-sorted fine to medium sand is present. Layer is about 0.5 cm thick and oriented 20° from normal. From 8.55 to 9.0 ft, till is dark-gray pebbly silt and clay. Pebble content 3-5%; average size 0.25 to 0.5 cm. From 9.0 to 9.05 ft, light yellowish-brown (10YR-6/4) well-sorted fine sand layer 0.1 to 0.2 cm thick and oriented 20° from normal. From 9.05 to 10.0 ft, as at 8.0 to 8.5 ft and 8.55 to 9.0 ft

Table 3.--Logs of Wells and Test Borings (continued)

82-USGS 3C (continued)

10.0-12.0	Till: Predominantly dark-gray pebbly silt and clay. Coarse light-brown gravelly zones from 10.1 to 10.4 ft and 10.6 to 10.75 ft. Pebble content in till is 2-3%, to average size 0.25 to 0.5 cm. Largest pebble is about 1 cm. Light-gray breakdown zones are sporadic
12.0-14.0	Till: Dark-gray moist pebbly silt and clay. Thin light-brown gravelly zones at 12.2 to 12.25 ft and 12.6 to 12.65 ft
14.0-16.0	Till: Dark-gray moist pebbly silt and clay. Dark-gray fine sand zone about 0.1 ft thick at 15.6 ft. Pebble content is 5%. Average size 0.5 to 1.0 cm. Largest is 2 cm
16.0-18.0	Till: Matrix same as above. From 16 to 16.2 ft, dark gray fine sand zone, 0.15 ft thick, is oriented 45° from normal. Dark reddish-brown (2.5 YR-3/4) breakdown zone, 0.75 x 0.5 cm at 16.6 ft. Dark gray coarse silt and fine sand zone about 0.1 ft thick from 17.4 to 17.5 ft. Pebble content in till matrix is about 5%. Average size is 0.25 to 0.5 cm and largest is 2.0 to 2.5 cm
18.0-20.0	Till: From 18 to 19.7 ft, same as above. From 19.7 to 20.0 ft, pebble content increases to about 20%. At 19.9 ft, deformed (concave upward) fine sand lens, less than 0.25 cm thick
20.0-22.1	Till: Mainly uniform, dark-gray pebbly silt and clay. Pebble content 2-3% from 20.0 to 20.4 ft, 25-30 percent from 20.4 to 22.1 ft. Average pebble size is 0.5 to 1.0 cm. Largest is 2.0 to 2.5 cm. Pebbles are subrounded to rounded shale and siltstone fragments. Dark reddish-gray breakdown zones around some pebbles
22.1-24.0	Till: From 22.1 to 22.6 ft, till is very pebbly silt and clay at 20.4 to 22.1 ft. At 22.6 ft, pebble content decreases abruptly to 1-3%. Average size is 0.25 to 0.5 cm. Largest is 2.0 to 2.5 cm
24.0-25.8	Till: Same as till above except for several large pebbles, 3-5 cm
26.0-28.1	Till: Dark-gray moist pebbly silt and clay. Pebble content is about 5%; average size is 0.25 to 0.5 cm. Largest is 1.5 to 2.0 cm
28.1-30.0	Till: Same as above, except pebble content increases to about 10%
30.0-32.0	Till: Same as above, except pebble content decreases to 5-10%
32.0-33.9	Till: Same as above, except pebble content decreases to 3-5%
34.0-42.0	Till: Same as above
42.0-44.0	Till: Same as above. Pebble content decreases to about 2 percent between 43.5 and 44.0 ft
44.0-46.0	Till: Same as above. Pebble content increases slightly to 5-10%. Olive (5Y-5/4) breakdown zones around some shale fragments from 45.5 to 46.0 ft
46.0-48.0	Till: Same as above. Pebble content increases to between 20-25%. Average pebble size is 0.5 to 1.0 cm. Largest is 2 to 3.0 cm
48.0-49.9	Till: Same as above. Pebble content decreases to 10-15%. Average size is 0.5 cm. Largest is 2 cm

82-USGS 3D Drilled Oct. 13, 14, 1982. Lat 42°26'49", Long 78°39'07". Altitude 1,390.5 ft. Log from U.S. Geological Survey study of Nulcear Regulatory Commission-licensed burial ground.

0-52 ft	Augered to 52 ft. No split-spoon samples collected
52.0-53.8	Till: Dark gray (5Y-4/1) pebbly silt and clay. Pebble content 15-20%. Average size 0.25 to 1.0 cm. Largest pebbles 3.5 to 4.0 cm. Olive (5Y-5/4) and olive yellow (2.5Y-6/6) breakdown zones around some shale fragments scattered through core
53.8-56.0	Till: Dark-gray moist pebbly silt and clay. Olive, olive yellow, and light olive brown (2.5Y-5/6 and 6/6) breakdown zones around many pebbles (mainly shale fragments). Pebble content 20-25%. Average size is 0.5 to 1.0 cm. Largest pebbles are 2.0 to 2.5 cm
56.0-58.0	Till: Same as above except that matrix seems moist. Rolls fairly easily
58.0-60.0	Till: Dark-gray (10YR-4.1) very pebbly silt and clay. Number of olive, olive yellow, and light olive-brown breakdown zones are decreasing. Pebble content still about 25%. Average size is 0.5 to 1.0 cm. Largest fragments are 4 to 5 cm. Between 59.5 and 60.0 ft, pebble content decreases to 5%
60.0-62.0	Till: Calcareous dark-gray pebbly silt and clay. Pebble content 15-20%. Average size is 0.5 to 1.0 cm. Largest is dark greenish-gray, highly calcareous limestone fragment 4 cm long at 61.0 ft. Olive (5Y-5/4) breakdown zones are sporadic
62.0-63.8	Till: Mainly calcareous dark-gray moist pebbly silt and clay. At 62.1 ft, yellowish-brown (10YR-5/8) is a fine sand zone about 0.25 cm thick. Several large (4-5 cm) fragments (mainly shale) from 62.5 to 63.8 ft. At 62.7 ft, partly calcareous sandstone fragment is rimmed with a yellow oxidized coating. From 62.8 to 62.9 ft, greenish-gray partly calcareous sandstone fragment has yellow-oxidized rim as at 62.7 ft. Black (2.5YR-2.5/0) calcareous fragment (possibly calcareous shale), 5.5 x 3.5 cm, at 63.0 ft
64.0-66.3	Till: Dark-gray calcareous pebbly silt and clay. Pebble content 20-25% to 66.3 ft. Average size 0.25 to 1.0 cm. Largest pebbles are 3 to 6 cm. Most pebbles are calcareous shales and limestone. A subrounded noncalcareous pale-red (10R-6/3) pebble, 2 cm at 66.2 ft

66.3-67.8	Till: Predominantly dark moist calcareous pebbly silt and clay. Pebble content 2-3%. Average size 0.1 to 0.2 cm. Largest pebbles 3-4 cm. From 67 to 67.1 ft, dry, light brownish-gray (2.5Y-6/2) well-sorted, fine sand lens is oriented 75° to 80° from normal. From 67.3 to 67.55 ft, a dry, light brownish-gray fine sand zone is intermixed with a dark-gray clayey silt. Both sandy zones react vigorously to dilute HCl
68.0-70.0	Till: Calcareous dark-gray moist pebbly silt and clay. Pebble content 15-20%. Average size 1 cm. Largest is about 2 mm. Light brownish-gray (2.5Y-6/2) coarse silt-fine sand lens, less than 0.25 cm thick, nearly vertical, between 69.1 and 70 ft along edge of core
70.0-71.8	Till: Mainly dark gray moist pebbly silt and clay. Pebble content less than 2% decreasing to 1% between 71.3 and 71.8 ft
72.0-74.0	Till: Dark-gray calcareous, moist pebblefree silt and clay Lacustrine: (73.5 to 74 ft). Calcareous dark-gray to gray subparallel microlaminated moist clayey silt. Deformed concave upward
74.0-75.8	Lacustrine: Same as 73.5 to 74 ft. Core breaks up easily along laminations. From 74 to 75.2 ft, clayey silt is fairly dry and crumbles easily. Reacts vigorously to dilute HCl. From 75.2 to 75.8 ft, clayey silt moister, plastic, and rolls easily 0.5 to 1.0 cm. Largest is about 2 cm
84.0-85.8	Till: Calcareous, moist gray to dark-gray pebble silt and clay. Pebble content generally <1% from 84 to 84.5 ft; 5% from 84.5 to 85 ft; and about 3% from 85 to 85.5 ft. Heavy concentration of sand, pebbles, and rock fragments at 85.2 to 85.3 ft. Calcareous moist gray laminated clayey silt at 85.4 to 85.8 ft.
85.8-87.8	Till: Dark-gray uniform silty clay with deformed wisps, pods, and small lenses of silt and clay scattered throughout the core. From 86.7 to 86.8 ft, two light gray fine sand zones, 0.2 cm thick, are oriented about 20° from normal.
87.0-88.4	From 87.0 to 87.5 ft, dark gray (10YR4/1) silt and clay, mottled with light gray (10YR7/1-6/1) to gray silt wisps. Pebble content 2%. From 87.5 to 88.0 ft, increasing silt content, wisps of silt light-gray (10YR7/1) throughout; mottled gray (10YR6/1-5/1) with dark gray (10YR4/1). At 87.5 to 87.8 ft dark grayish-brown (10YR4/2) fine sand coating core; pebble content 2%, some exotics; among them weak red (10R4/4) MRF; also olive gray (5Y5/2) pebble breakdown zone. At 87.7 to 88.4 ft, increasing clay content; dark gray (10YR4/1) with light gray (10YR7/1) wisps; pebble content <1%; clay appears varved.
75.8-77.8	Lacustrine: Calcareous gray (10YR-5/1) very moist microlaminated clayey silt. Laminations deformed concave upward. Gray fine sand, 0.25 cm thick, at 76.2 ft. Saturation increases at 77.3 to 77.8 ft
77.8-78.8	Lacustrine: Same as above
78.8-79.9	Lacustrine: Mainly calcareous gray saturated clayey silt as above. Weak reaction to dilute HCl. From 79.6 to 79.9 ft, clayey silt grades to very coarse silt. Silt breaks up easily when rolled and is less saturated
80.0-81.95	Lacustrine: Calcareous gray microlaminated moist clayey silt. Breaks up easily along laminations, which are deformed concave upward. From 81.45 to 81.95 ft, dark reddish-brown blebs or discolorations
82.5-84.0	Lacustrine: (82.5 to 83.35 ft). Same as above. Clayey silt grades into a calcareous pebbly silt and clay, possibly till, between 83.35 and 84 ft. Pebble content is 2-3%. Average size is
88.4-90.7	From 88.4 to 88.9 ft, dark gray (10YR4/1) clayey silt, appears varved with mottled light gray (10YR7/1) silt wisps throughout; when core is split open, inside appears more dark grayish-brown (10YR4/2); very clean, less than 1 % pebble content. From 88.9 to 89.4 ft, gray to light gray (10YR5/1-6/1) coarse silt and fine sand; clean with no pebbles (lacustrine). From 89.4 to 90.0 ft (lacustrine), gray (10YR5/1) fine sand with intermixing coarse light gray (10YR7.1) silt wisps; No pebbles; friable. From 90.0 to 90.7 ft, gray (10YR4/1) silt and clay and sand; increasing clay and silt content; pebble content, to about 10%; average size 1.0 mm, largest is 3.0 mm. Some exotics, olive (5Y3/4) crystalline rock fragment; weak-red rounded pebbles
90.7-92.0	From 90.7 to 91.3 ft, till; mottled dark-gray to dark grayish-brown (10YR4/1-4/2) silt and clay; contains light gray (10YR7/1) silt wisps; very pebbly about 20%, gravel-like; contains shale fragments, and weak-red (10R4/4) and olive (5Y4/3) breakdown zones and blebs. Pebble size 1.0 mm to 3.0 mm, subrounded. From 91.3 to 92.0 ft, till; mottled dark gray to very dark grayish-brown (10YR4/1-10YR3/2) silt and clay. At 91.4 ft, large 6.0 to 6.5 mm fragment, greenish gray (5Bg/51). From 91.4 to 92.0 ft, 20% pebble content; large siltstones; average size 2.0 to 2.5 mm; greenish olive and weak red breakdown and disintegration zones

82-USGS 3D (continued

91.8-93.8	From 91.8 to 92.3 ft, dark gray to dark grayish brown (10YR4/1-4/2) coarse silt and fine sand with rare clay. Pebble content about 2%, average size 0.50 to 1.0 mm; greenish-gray breakdown zone, moist, yet does not roll easily. At 92.8 ft, wet zone, saturated. From 92.8 to 93.3 ft, dark gray (10YR4/1) silt and fine sand intermixed with rare clay, clean, no pebbles from 92.9 to 93.1. From 93.1 to 93.3 ft, pebbles increase to about 5%, broken greenish gray shale fragments, 2.0 to 3.0 mm diam. Material is moist, rolls easily, appears to increase in clay content over the previous 0.5 ft of this core. From 93.3 to 93.8 ft, till; dark gray (10YR4/1) silt and clay; 15-20% pebble content; average size 1.0 to 2.0 mm diam.; contains siltstones, shale fragments throughout; greenish gray and yellowish brown breakdown zone; appears mottled, color changes from dark gray to dark grayish-brown (10YR4/1-10YR4/2), very dirty gravel-like. From 95.5 to 95.7 ft, till; dark grayish-brown (10YR4/2) silt and clay with 15-20% small pebbles; average size 0.50 to 1.00 mm; dry
95.7-97.5	From 95.7 to 96.7 ft, till; dark grayish-brown (10YR4/2) silt and clay, pebble content 5-10%; average size 1.0 to 1.5 mm, largest 3.0 mm. From 96.7 to 97.7 ft, dark gray (10YR4/1) fine sand and coarse silt, nose of core had dark gray (10YR4/1) varved clay with 15% small-pebble content
97.5-101.0	Saturated dark-gray fine sand and silt with some clay
101.0-101.5	Dark gray laminated (appears varved) silt and clay

82-USGS 4A Drilled Oct. 7, 1982. Lat 42°26'52", Long 78°39'08". Altitude 1,385 ft. Log from U.S. Geological Survey study of Nuclear Regulatory Commission-licensed burial ground.

0-16 ft	Augered to about 16 ft when saturated till began to return. Hole cleaned out and augers removed. Water trickling into hole from about 12.5 to 13 ft. Hole backfilled to 14.5 ft. Well set with screen between 12.5 and 14.5 ft

82-USGS 4B Drilled Oct. 7, 1982. Lat 42°26'52", Long 78°39'08". Altitude 1,385 ft. Log from U.S. Geological Survey study of Nuclear Regulatory Commission-licensed burial ground.

0-12 ft	Augered to 12 ft. No split-spoon samples collected
12.0-14.0	Till: Moist uniform dark gray pebbly silt and clay. Little or no pebble content. Light olive brown (2.5Y-5/0) to olive (5Y-5/3) unsaturated well-sorted sand at 12.5 to 12.65 ft
14.0-35.5	Till: Moist dark-gray pebble silt and clay. Pebble content in 10-15%; average size 0.25 to 0.5 cm. Largest from 3.5 to 4.5 cm. Dark-gray, moist well-sorted fine sand zone at 35.5 to 35.7 ft

82-USGS 4C Drilled Oct. 6-7, 1982. Lat 42°26'52", Long 78°39'08". Altitude 1,385 ft. Log from U.S. Geological Survey study of Nuclear Regulatory Commission-licensed burial ground.

0-2 ft	Fill: Dry, oxidized, weathered very dark grayish-brown (10YR-3/2) pebbly silt and clay. Organic material roots and root tubes make up about 1% of core. Yellow (10YR-8/8) iron-oxide staining interspersed throughout matrix and in root tubes. Average size is 0.5 to 1 cm; largest is 1.5 cm. Clay content appears to increase below 1 ft
2.0-9.2	Probably unconsolidated fill material, although no recovery from split-spoon sampling
9.2-11.2	Fill: Predominantly reworked till material used as fill from 9.2 to about 10.8 ft. Contorted combinations of brown (10YR-5/3) and dark grayish-brown (10YR-4/2) till (pebbly silt and clay). Organic material is abundant. Unweathered gray till from 10.8 to 11.2 ft
11.1-12.0	Till: Unoxidized moist dark-gray pebbly silt and clay. Pebble content 2-3%; average size 0.25 to 0.5 cm. Largest is 2.5 cm. From 11.8 to 12.1 ft, pebble content decreases to less than 2%
12.0-14.0	Till: Uniform dark-gray pebble-free silt and clay. From 13.4 to 13.6 ft, deformed olive brown (2.5 Y-4/4) fine sand lens about 2 cm thick
14.0-16.0	Till: Same as above to 15.8 ft. From 15.8 to 16.0 ft, pebble content increases to 2-3%. Some grayish-brown blebs of silt and clay
16.0-18.0	Till: Same as above except till is pebble free. From 17.7 to 18 ft, dark-gray very fine to fine sand zone. Sand is fairly well sorted and saturated. Core is moister than previous cores
18.0-20.0	Till: Same as above. Dark-gray very fine to fine sand from 18.0 to 18.05 ft. Deformed dark gray fine sand lens, 0.25 x 0.3 cm, at 18.4 ft
20.0-22.0	Till: Same as above, except pebble content increases from 1% to 5% in 21.0- to 21.8 ft interval
22.0-24.0	Till: Same as above. Pebble content 2-3%; average size 0.25 to 0.5 cm. Largest is 3.75 to 4.0 cm
24.0-26.0	Till: Same as above
26.0-28.0	Till: Same as above, except till is fairly pebble free. Scattered wisps of coarse silt about 1 cm long are present. Till is siltier and moister from 26.4 to 26.6 ft
28.0-30.0	Till: Dark-gray pebble silt and clay. Pebble content 1-3%; average size 0.25 to 0.5 cm. Large pebble (5.5 cm long axis) at 29.5 ft

30.0-32.0 Till: Same as above. A few coarse silt blebs in 30.5- to 31.0-ft range

32.0-34.0 Till: Dark-gray moist pebble-free uniform silt and clay

34.0-36.0 Till: Same as above. Remnants of shale fragments at about 35.5 ft. Moist and rolls easily

36.3-38.3 Till: Dark-gray pebbly silt and clay. Pebble content about 5%; average size 0.25-0.5 cm, largest is 3.5 cm. Dark-gray, well-sorted, moist fine sand from 37.2 to 37.3 ft. Large clast, 3.5 cm on long axis, at contact between silt and clay and the fine sand. Large greenish-gray (5GY-5/1) shale fragment, 3.5 cm long axis, at 38.3 ft

38.3-40.0 Till: Dark-gray pebbly silt and clay. Pebble content about 10%; average size 0.25 to 0.5 cm. Zone of scattered shale fragments at 38.4 to 38.7 ft. Large fragment in zone is 3.5 cm; within matrix (till), largest is about 2.0 cm

40.0-42.0 Till: Same as above. Pebble content about 10%. Pale olive (5Y-6/4) breakdown blebs, 0.2 x 0.75 cm diam. between 41.5 and 42 ft

42.0-44.0 Till: Same as above. Pebble content 10-20% from 42 to 42.5 ft and about 10% from 42.5 to 44 ft. Average size is 0.5 to 1.5 cm. Largest pebbles are 2.5 cm

44.0-46.0 Till: Same as above but appears to become more gravelly

46.0-48.0 Till: Dark-gray moist pebbly silt and clay. Pebble content from 5-10%; average size is 0.5 to 1.0 cm. Four large rock fragments ranging from 3.5 to 4.0 cm, at about 47 ft. Pale olive (5Y-5/6) weathered zones rim some shale pebbles at about 37 ft

48.0-50.0 Till: Same as above. Pebble content 10-15%. Average size 0.25 to 1.0 cm. Largest are about 3 cm

50.0-52.0 Till: Same as above

82-USGS 5A Drilled Oct. 5, 1982. Lat 42°26'53", Long 78°39'04". Altitude 1,379 ft. Log from U.S. Geological Survey study of Nuclear Regulatory Commission-licensed burial ground.

0-18.1 ft Augered to 18.0 ft. No split-spoon samples collected

18.1-20.1 Till: Unweathered moist dark-gray pebbly silt and clay. Pebble content in 3-5%; average size 0.25 to 1.0 cm. Largest 3 to 5 cm

82-USGS 5B Drilled Oct. 5, 1982. Lat 42°26'53", Long 78°39'04". Altitude 1,379 ft. Log from U.S. Geological Survey study of Nuclear Regulatory Commission-licensed burial ground.

0-40.2 ft Augered to 40.2 ft. No split-spoon samples collected

40.2-42.5 Till: Dark-gray (10YR-4/1) moist pebbly silt and clay. Pebble content 3-5%; verage pebble size 0.25 to 0.5 cm. Largest is 3.5 to 4 cm. Fine sand found in 82-USGS 5C not present

42.5-44.5 Till: Dark-gray pebbly silt and clay as above. Pebble content 5% from 42.5 to 44.0 ft, increasing to 10% from 44.0 to 44.5 ft

82-USGS 5C Drilled Oct. 4-5, 1982. Lat 42°26'53", Long 78°39'04". Altitude 1,379 ft. Log from U.S. Geological Survey study of Nuclear Regulatory Commission-licensed burial ground.

0-2 ft Till: Dry oxidized brown (10YR-5/3) pebbly silt and clay. From 0 to 1 ft, organic material abundant and iron oxide staining interspersed throughout core. Several brown yellow blebs, 0.2 to 0.5 cm long. Pebble content less <2%. From 1 to 2 ft, pebble content 3-5%; average pebble size 0.5 to 1.0 cm. Largest are 2 cm

2.2-4.2 Till: Same as above. Dry oxidized brown pebbly silt and clay. Organic material and iron oxide staining are abundant. Pale yellow, brownish-yellow, and strong brown (7.5YR-5/8) blebs make up about 1-2% of core. Pebble content and size are same and mainly gray (5Y-5/1) shale

4.2-6.2 Till: Oxidized, moister dark grayish-brown pebbly silt and clay. Organic material, root tubes, and iron oxide staining decrease with depth. Pebble content and size about same

6.2-8.1 Till: Partly oxidized moist dark grayish-brown pebbly silt and clay. Organic material still abundant. Friable dry coarse silt to fine sand zone from 6.1 to 6.7 ft. Pebble content 3-5%; average size 0.25 to 0.5 cm. Largest is 1.5 cm

8.1-10.0 Till: Partly oxidized dark grayish-brown pebbly silt and clay. Till grades between dark grayish-brown and dark gray from 9 to 10 ft, contact between two colors nearly vertical. Yellowish-brown coarse silt to fine sand pods from 8.8 to 8.9 ft. Pebble content generally <5%; average size 0.25 to 5.0 cm. Largest is 2.5 cm. Light yellowish brown (10YR-6/4), less than 1% of core

10.0-12.0 Till: Partly oxidized pebbly silt and clay. Color changes from oxidized dark grayish-brown to unoxidized dark gray. Contact between colors is again nearly vertical. Iron oxide staining interspersed within core and many pebbles. Dark reddish-brown staining along root zones and fractures; probably mn oxidation

12.0-14.0 Till: Partly oxidized pebbly silt and clay grading from dark grayish-brown and gray. Reddish-black (10R-2.5/1) mn oxide coating in fracture plane extending 12.3 to 12.8 ft. Another fracture with reddish-black coating from 13.05 to 13.75 ft. Both fractures oriented 75° to 80° from normal. Pebble content 3-5%; average size is 0.25 to 0.5 cm. Largest are 2.5 to 3 cm. Light gray blebs, 0.2 to 0.4 cm, make up about 1% of core

Table 3.--Logs of Wells and Test Borings (continued)

14.0-15.9	Till: Dark grayish-brown moist pebbly silt and clay. Yellowish-brown (10YR-5/3) fine sand pod, 1 x 1.5 cm, is oriented roughly horizontal at 14.3 ft. Pebble content less than 5%; average size 0.5 to 1.0 cm. Largest is 2 cm
15.9-17.9	Till: Dark-gray unoxidized moist pebbly silt and clay. Dark-gray deformed very fine to fine sand lens, 0.25 to 0.5 cm thick, is oriented about 70° to normal at 16.4 to 16.9 ft. Micaceous coating at parting in till at 16 ft. Coarse silt zone from 16.9 to 17 ft. Pebble content 2-3%; average size 0.25 to 0.5 cm. Largest are 3 to 5 cm
17.9-19.9	Till: Same as above. Weak red (10R-5/4) breakdown zone from 18.4 to 18.7 ft
20.0-26.0	Till: Same as above. Pebble content 1-3%
26.0-27.5	Till: Same aa above, except from 27.2 to 27.5 ft, which contains high concentration of irregularly-shaped rock fragments 0.5 to 1.5 cm; probably result of shale fragment breakup during coring
28.0-30.0	Till: Fairly uniform dark-gray pebbly silt and clay. Pebble content 2-3%; average size <0.5 cm. Dark-gray deformed sand lens at 29.9 ft. Moisture content generally lower than last several cores
30.0-31.8	Till: Same as above
31.8-33.9	Till: Same as above. Light-gray deformed breakdown gone, concave-downward from 32 to 32.1 ft
34.2-35.8	Till: Dark-gray pebbly silt and clay. Matrix uniform and more saturated. Pebble content 1-2%; average size <0.25 cm. Largest is 2 cm
35.8-38.1	Till: Matrix same as above. Deformed dark-gray pods of fine sand, 0.5 x 1.5 cm, intersecting edge of core at 37.5 ft
38.1-40.05	Till: Matrix same as above. Relatively well-sorted saturated fine-sand layer from 39.7 to 39.85 ft
40.05-41.7	Till: Mainly dark-gray moist pebbly silt and clay. Dark gray well-sorted fine sand from 40.05 to 40.5 and from 40.7 to 41.7 ft. Lower sand more saturated than upper sand. Pebble content in silt and clay <3%; average size is <0.25 cm. Largest is about 0.75 cm
41.8-43.3	Fine sand: Dark-gray uniform well-sorted saturated fine sand. Water in hole
44.2-46.4	Till: Mainly dark-gray pebbly silt and clay as described previously. From 44.2 to 44.7 ft, dark-gray saturated coarse (1-2%). From 45.6 to 45.8 ft, medium to coarse dark gray sand. Pebble content in silt and clay 2-3%
46.0-48.0	Till: Matrix same as above
48.0-49.9	Till: Dark-gray pebbly silt and clay. Pebble content 3-5%; average size 0.25 to 0.5 cm. Largest pebble is 4.5 cm at 48.8 ft. Light olive-gray blebs scattered throughout core

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Table 4.--Records of measured geologic sections

EXPLANATION

Logs of 20 measured geologic sections on the bluffs along Buttermilk Creek and tributaries are given on the following pages. Sections were based on multiple auger holes and small exposures examined by H. G. Stewart of the Geological Survey (Section F), R. G. LaFleur of Rensselaer Polytechnical Institute (Section IE), and A. D. Randall and (or) D. E. Prudic of the U.S. Geological Survey (all remaining sections). Altitudes were determined by hand-leveling up from creek grade whose altitude was estimated from a topographic map of the Western New York Nuclear Service Center (5-foot contour interval, scale 1:4800) by Lockwood, Kessler, and Bartlett, Inc. Locations of sections are shown in plate 1.

Site B: Lat 42°26'59", Long 78°38'37". Along gully at south end of old slide about 100 ft north of brook entering Buttermilk Creek from east side, and 140 ft south of south end of new slide.

1237-1234 ft	Layered gray silts and clays, no pebbles
1234-1231	Till, unoxidized olive gray, silty clay with pebble content about 10%
1231-1230.2	Till, as above, mixed with disturbed layers of gray silts and clays
1230.2-1224	Layered gray silts to very fine sands and clays, dry and crumbly

50 feet north of Site B on old slide.

1226-1225 ft	Clay, purplish gray with pebble content 3-5%; too plastic to determine if bedded
1225-1221.5	Till, unoxidized olive gray silty clay, normally pebbly (5-10%)
1221.5-1219	Till, unoxidized, mixed with disturbed layers of silt and clay
1219-1217	Layered gray silts and clays, dry and crumbly
1217-1216.8	Clay, purplish gray, very plastic, scattered pebbles
1216.8-1216	Silt, gray, wet, no pebbles, massive

Site C: Near axis of spur on west bluff of Buttermilk Creek about 150 ft south of where gas line descends bluff (distance measured 40 ft up from stream). Note: Auger holes 80 to 100 ft south of axis of spur hit similar materials (beneath thicker colluvium) except that very coarse sand to granules, silt-bound and/or interlayered with silt, was penetrated from about 1258 ft to refusal at about 1256.5 ft.

1307± ft	Pebble gravel, clean coarse sand matrix, exposed at south edge of gas line swath. (Altitude approximate, not leveled.)
1290-1280	Layers of silty clay (10YR 5/1) and clay (5YR 5/1) with partings of silt and (near top) layers of silt 3-10 mm thick
1280-1275	Predominantly massive silty clay containing deformed, discontinuous wisps of coarse silt and small blebs of weak-red silt; interbedded with well-layered silts containing partings of clay and very fine sand
1275-1270	Predominantly massive silty clay containing deformed, discontinuous wisps of coarse silt, sparse scattered pebbles and coarse sand (2% of core or less), numerous small blebs of weak-red silt or clay; interbedded with well-layered silts containing thin layers and partings of clay and coarse silt to very fine sand
1270-1265	Not examined
1265-1263	Same as 1275-1270 ft
1263-1260	Silt, clayey silt, and clay layers; deformed but continuous layers; entirely pebble free except narrow zone at 1259 ft
1260-1256	Till, moderately stony (10-20% pebbles), unoxidized, plastic; sparse wisps of silt at 1256-1254 ft; refusal on stones
1256-1250	Not examined
1250-1248	Till, est. 15-20% pebbles
1248-1242	Not examined
1242-1234	Till, unoxidized (5Y 4/1) moderately pebbly (exposure in streambank 80 ft southwest and beyond, here overlain by a succession of alluvial gravel layers and till masses, the latter presumably colluvial).

Site D: West bluff of Buttermilk Creek, about 180 ft south of sharp bend in creek and about 400 ft south of Site C on spur south of gas line. Section based on multiple auger holes, and exposure in creek bank, described by A. D. Randall and D. E. Prudic, May 1980. Altitudes by hand-leveling from Buttermilk Creek, whose altitude is 1237 ft according to map by Lockwood, Kessler, and Bartlett.

1384 ft	Top of slope, level surface
1384-1315	Not examined
1315-1309.5	Till: silty clay with >10% coarse sand and pebbles; oxidized (10YR 5/2, 10YR 4/2) to depth of 4 ft, unoxidized (5Y 4/1) below, except oxidized (10YR 4/2) along fractures; fracture surfaces below 7 ft depth coated with minute clear tabular crystals (gypsum? or calcite?)
1309.5-1309	Till: as above, with a few deformed wisps of coarse silt and one streak of red clayey silt; oxidized
1309-1308.8	Layers of silt and clay with rare sand grains and pebbles; strong oxidation silt (10YR 6/6) to clay (10YR 4/2)
1308.8-1308.5	Sandy silt with embedded rounded pebbles; strong oxidation.
1308.5-1308	Medium to very coarse sand with abundant rounded pebbles (<1" diam.); clean
1308	Refusal on stones. Small seep on nearby scarp at this altitude
1308-1305.5	Not examined
1305.5-1302	Silt, interbedded with silty very fine sand
1302-1298.5	Layers of silt and fine silt, a few clay partings
1298.5-1288.5	Not examined
1288.5-1288	Layers of silt and clay
1288-1285.5	Layers of clay with thin silt partings
1285.5-1285.2	Silt, saturated
1285.2-1250	Not examined
1250-1245	Terrace alluvium (exposed in bank of Buttermilk Creek): Pebble gravel, grading downward to flat-stone pebble-cobble gravel; irregular lower contact, spring (2 gal/min) at one point
1245-1237	Till (exposed in creek bank)

Site I: Lat 42°27'11", Long 78°38'44" west bluff of Buttermilk Creek, about 1100 ft due north of gas line and 50 ft south of where a prominent small gully intersects fence line at top of slope. Note: section based on exposure (1313-1286 ft) and multiple auger holes by A. D. Randall and D. E. Prudic, May 1980. Altitudes based on hand leveling up from creek, whose altitude is 1220 ft according to map by Lockwood, Kessler, and Bartlett.

1370 ft	Top of slope
1370-1315	Not examined
1315-1310	Till: silty clay with 10-15% pebbles and coarse sand, plastic; oxidized to a depth of 2 ft, mottled at 2-4 ft, oxidized only near root tubes at 4-5 ft
1310-1309.5	Till, more pebbles and sand than above (>20%); dry and oxidized near base
1309.5-1309.4	Gravel, sandy, oxidized; refusal on large stone
1309.4-1303	Not examined

Site E: Lat 42°26'49", Long 78°38'33" section of west bluff above Buttermilk Creek along nose immediately north of powerline about 1500 ft north of Buttermilk Road.
Note: Thin gravel beneath inplace till and above lacustrine deposits is certain. Till 5 ft thick or more on the flanks of this nose, at altitudes of 1290-1305 ft, appears due to slumping.

1380 ft	Terrace surface
1380-1324	Not examined
1324-1315	Till, predominantly silt and clay with 5-15% stones and coarse sand; oxidized in top 3 ft, unoxidized with oxidized mottling and/or oxidized fractures at 3-9 ft; pebbly at base
1315-1313	Clay or silty clay with deformed partings and thin layers of silt; many layers nearly free of pebbles and coarse sand, others have abundant pebbles; many layers have reddish-gray silt blebs; mainly unoxidized, but strongly oxidized yellowish-brown 0.5 ft at base
1319-1309?	Gravel, pebbles with a few small cobbles, slightly silty; layers of pebbly sand; thickness at least 2 ft, base not examined; oxidized
1309?-1287	Silt, well layered, with a few partings or thin layers of clay and rare thin layers of silty very fine sand; oxidized at top, variably oxidized below 1394 ft; numerous irregular masses of grayish-red silt as large as 10x20 mm with a few granules at about 1294 ft
1287-1274	Clay and clayey silt, with some thin silts, generally in regular rhythmic layers; clays are reddish or purplish gray; some blebs and thin lenses of brighter grayish-red silt, a few layers with scattered pebbles; a few layers show internal deformation
1303-1297	Predominantly silt to very fine sand, layered; three interbedded layers, total thickness 3 ft, or pebbly fine to very coarse sand, medium to very coarse sand, and bright fine and sandy pebble gravel, all generally clean; current sets in one coarse sand layer dip north, gross layering generally subhorizontal or northeast-dipping; pods and distorted lenses of coarse sand in one silty very fine sand layer
1297-1285	Sand, fine to coarse and medium to very coarse, sparsely pebbly, clean
1285-1273.5	Silt and very fine sandy silt, in layered or massive units 0.5 to 3 ft thick; interbedded with very fine sand layers 0.25 to 2 ft thick
1273.5-1270	Silt, with clay partings; strongly oxidized streaks; below 1272 ft, contains numerous lumps of weak red (10R5/3) and gray pebbly sandy clay (possibly stony till) with pebbles as large as 1 inch; one layer of weak-red sandy clay 5 mm thick
1270-1268	Not examined
1268-1267	Clay and silt, in layers 1 mm thick, with scattered small pebbles; some clay layers weak red (10R5/2)
1267-1266.5	Silt, gray 5Y5/1, with deformed wisps of lighter gray (N6) coarse silt and a few scattered small pebbles

Site K: Lat 42°27'25", Long 78°38'50" west bluff of Buttermilk Creek, about 500 ft south of railroad bridge and about 100 ft north of north edge of brushy area lacking large trees (due to moderately recent landslide).
Note: section based on multiple auger holes by A. D. Randall and D. E. Prudic, October 1967, May 1980. Altitudes by hand leveling up from Buttermilk Creek, whose altitude is 1208 ft according to map by Lockwood, Kessler, and Bartlett.

1263-1255 ft	Till: silty clay with 10-15% pebbles and coarse sand, oxidized (10YR4/2) to 4 ft depth, unoxidized (5Y5/1) below with oxidized mottling, fractures and root tubes as deep as 9 ft
1255-1250	Till, mostly containing less than 5% pebbles and/or a few deformed wisps of coarse silt; in part normal till like that above
1250-1248	Silt, with some silty very fine sand, locally containing abundant clay layers 2 mm thick; (5Y5/2), strongly oxidized at base to (7.5YR-5YR5/8)
1248	Gravel; recovered several rounded pebbles before refusal on stones.
1248-1244	Not examined
1244-1242	Gravel: pebbles and small cobbles generally in a silty clayey sand matrix; layers 0.25 ft thick of 1-inch pebbles in clay matrix and clean granules to coarse sand; conformable with horizontal basal contact; strongly oxidized at base
1242-1237	Silt, interbedded with very fine sand

to silt and rare clay partings; strongly oxidized at top

1237-1230 Not examined

1230-1226 Silt, with clay interbeds 2 mm thick

1226-1225 Clay, with silt partings

Site M: Lat 42°27'34", Long 78°39'19" left bank of Franks Creek and right bank of tributary, at junction 1200 ft upstream from rail-road. Note: sand below till demonstrated to be continuous for at least 60 ft east-west, declining about 3.5 ft in altitude to the west over this interval.

1246 ft Top of sharp interstream ridge.

1246-1242 Covered; in part oxidized till interbedded with wisps of sand. Possibly colluvium

1242-1237 Pebble gravel, poorly exposed; overlying coarse to very coarse sand with small pebbles; dark yellowish brown (10YR4/2). Possibly a remnant of older alluvium of Franks Creek

1237-1230.5 Till: silty clay with subordinate sand and pebbles, unoxidized olive-gray (5Y5/1); 0.2 ft of layered clay and silt locally present at base

1230.5-1228 Sand, coarse to very fine, and fine pebble gravel, layered, oxidized moderate yellowish-brown (10YR5/4)

1228-1217 Silt and clay, interbedded in horizontal layers, light olive-gray

1217-1214 Covered

1214 Junction of tributary with Franks Creek

Site N: Lat 42°27'37", Long 78°38'55" bluff along railroad 1650 ft south of Franks Creek, 1300 ft north of railroad bridge over Buttermilk Creek. Note: section based on one auger hole up-slope from railroad (1257-1234 ft) and two on and below railroad cut (1234-1213 ft), by A. D. Randall and D. E. Prudic, August 1979. Altitudes based on hand-levelling up from creek grade, which is 1196 ft altitude according to map by Lockwood, Kesler, and Brainerd map.

1257-1249 Clay and silt; dry and oxidized at 1257-1252 ft, gray with subordinate oxidation below; a few pebbles at 1255-1254 ft, otherwise none; no bedding

1249-1235 Till, unoxidized, sparse pebble content below top 1 ft (est. <5%, grades to pebble-free silty clay at 1237 ft

1235-1234.2 Distorted thin layers of gray clay and white coarse silt, with rare blebs of rust-colored silt

1234.2-1233.5 Silt, with partings and layers <3 mm thick of clay

1233.5-1232.8 Pebble gravel and coarse sand, clean

1232.8-1213 Silt, in layers commonly 2-10 mm thick with subordinate clay partings and layers 1-3 mm thick; rare thin layers of silty very fine sand; saturated below 1225 ft

1213-1196 Not augered

1196 Buttermilk Creek grade

Site R Lat 42°27'41", Long 78°39'17" south bank of Franks Creek, 640 ft west of railroad.

Exposed

1228-1225.5 ft Clay, possibly silty, with scattered coarse sand and pebbles; in layers several cm thick separated by silt partings parallel to bedding in underlying units. Layers appear massive when wet, but abundant thin bedding is revealed by partial drying. Similar material exposed 20 ft west at same altitude

1225.5-1223.25 Silt

1223.25-1222.75 Sand, horizontal layers; very fine, fine to very fine, medium to very fine, very coarse; one clay parting

1222.75-1218.75 Pebble gravel, flat stones tend to be horizontal in east-west face; est. 10% quartzitic pebbles, few limestones; a little silt and sand, cohesive

1218.75-1215.75 Sand, silty, a few pebbles, crude subhorizontal layers, oxidized

Site 1E Lat 42°26'01", Long 78°37'46" Riceville station: along railroad and right bank of Buttermilk Creek 150 to 300 ft south of Fox Road.

1340-1339 ft Coarse and fine silt, layered

1334.5- Units dip conformably southward

1339-1334.5 Till (?), <5% pebbles and coarse sand; one large embedded cobble and one mass of pebbly silty sand; locally abundant contorted silt wisps

1334.5-1334 Silt, clayey, weakly oxidized, gray (2.5YR5/2)

1334-1333 Silt, coarse, grades to medium-fine sand at base, strongly oxidized (10YR5.5/6); climbing ripples suggest northerly flow

1333-1331.5 Silt and clay, weakly oxidized (10YR5/4)

1331.5-1324.5 Sand; layers range from fine and very fine to coarse sand with granules; plane parallel beds

1334.5-1319.5 Silt and clay, layered weakly oxidized

Auger hole at base of exposure

1319.5-1310 Predominantly clayey silt with layers or partings of clay and of silt, gray, unoxidized; layering generally severely disturbed; numerous blebs and contorted lenses a few mm to a few cm thick of reddish-gray silt, clay, pebbly clay and sandy silty clay; a few scattered pebbles; a few small blebs of dark gray clay or sandy

	pebbly clay; at 1313-1312 ft, regular layers of clay, silty clay, and silt with few other components

Comment: Except for the gravel exposed on the upper part of the bank below the railroad, which appears to be postglacial terrace alluvium, this entire section seems to be part of a continuous depositional process. The dip of the sand from 1331.5 to 1324.5 implies a delta (southward flow) or collapse, in either case deposition in the presence of ice rather than subaerial drainage. Other units are alternating lacustrine, lacustrine with foreign components dropped from floating ice and accompanied by soft deformation, and till whose low pebble content, silt wisps, and gradation to lacustrine sediment may also result from deposition beneath floating ice.

Site 1F Lat 42°26'22", Long 78°38'01", bluff above B&O railroad immediately north of Gooseneck Creek.

1410 ft	Top of slope, level surface
1410-1402	Gravel, pebbles and cobbles to 5 inch maximum with clean coarse sand
1402-1366	Till, predominantly silt and clay with 10-15% stones and coarse sand; some surficial oxidation. Examined at several points, not continuously
1366-1362	Clay with deformed thin layers of silt increasing in abundance downward; also a few scattered pebbles; gray, except strongly oxidized dark yellowish-orange and yellowish-brown bottom at 0.5 to 1 ft. Pinches out or grades into till laterally. Calcite-cemented layer 5 mm thick at base
1362-1354	Gravel; variable at top, ranging from sandy, moderately silty pebble gravel to openwork fine-pebble gravel; subrounded to subangular pebbles and cobbles in silty sand matrix at base; examined only at top and base of this interval
1354-1350	Not examined
1350-1344	Layers of bedded silt, silt with embedded pebbles, silty very fine sand, clean fine to coarse sand, and clean sandy pebble gravel; oxidized
1344-1342.5	Silt, oxidized
1342.5-1341.5	Gravel and coarse sand, clean, saturated
1341.5-1332	Layered clay, clayey silt, clay with silt partings; unoxidized gray and pale reddish gray; no pebbles or sand
1332-1326	Clay or silty clay, faint layering and silt partings, scattered pebbles; plastic; unoxidized
1326-1325.5	Layered clay, silt, and (at top) very fine sand; layers deformed and discontinuous at base; silt and sand layers oxidized
1325.5-1319	Till (?) (deformed lacustrine facies): clay or silty clay, gray (5Y-10YR 5/1), generally containing scattered pebbles and coarse sand (3-10%) but small portions lack these constituents; also containing (5-40%) deformed fragmented layers, irregular masses, discontinuous flecks, and streaks of light gray (10YR 7/1) coarse silt. Interval from 1321.7 to 1320.7 also contained several coarser masses or lenses (30-50% pebbles and sand embedded in clayey silt with minor wisps of coarse silt). Interval from 1320.7 to 1320.5 is silt with minor clay partings, no pebbles or coarse sand
1319-1317	Till, predominantly silt and clay with 5-10% pebbles and coarse sand, a few small wisps of silt in part of this interval; partings of rose-colored silt at 1318.5 ft
1317-1315.5	Till, like that above but with deformed silt wisps forming perhaps 5% of core throughout this interval
1315.5-1314	Till, predominantly silty clay with 10-20% pebbles, including several larger than 1-inch maximum diam.; gray (5Y-10YR 5/1); silt wisps very rare and small

Section defined as follows:

1410-1366 ft	Exposed intermittently in excavated ditch and resulting gully descending bluff to Gooseneck Creek
1374-1324	Multiple shovel and auger holes on west face of bluff, above railroad. Railroad altitude about 1330 ft according to map by Lockwood, Kessler, and Bartlett
1326-1314	Auger hole on southwest face of bluff, 30 ft south of next higher set of holes. Fine sand at 1328 to 1326 ft here, appears to be a localized lens or perhaps colluvial

Site 1G Lat 42°26'24", Long 78°38'30", left bank of tributary to Buttermilk Creek 450 ft downstream from dam, western Nuclear Fuel Services water-supply lake.

1400 ft	Top of slope, level surface
1400-1363	Not examined
1363-1331	Till; silty clay with pebbles; fully oxidized at first 0-3 ft, oxidation along root tubes, fractures and mottled areas at 3-6 ft, unoxidized and plastic below (oxidized zone descends along slope); scattered deformed silt and clay beds at 1340-1339 ft and 1331-1330 ft
1330-1328	Clay, gray, with subordinate thin layers of oxidized light yellowish brown silt; two layers of pebbly clay with disturbed bedding 0.1 and 0.2 ft thick
1328-1326	Gravel, sandy, clean (top) to silty (base); strong oxidation at base

Table 4.--Records of Geologic Sections (continued)

1326-1324 Clay, top 0.5 ft oxidized, remainder gray; subordinate thin silt layers or partings, commonly oxidized
1324-1320 Not examined
1320-1318 Silty clay and silt, layered
1318-1314.5 Clay, gray, plastic; a few pebbles near base
1314.5-1312.5 Silty clay, friable
1312.5-1311.5 Clayey silt with clay partings, scattered pebbles, and probably disturbed bedding
1311.5-1310 Till, sparsely pebbly at top, traces of deformed coarse silt layers at base
1310-1308 Silt, gray
1308-1304 Not examined

Site Y: Lat 42°27'09", Long 78°37'50", channel and north bluff of tributary to Butter-milk Creek across Buttermilk Creek from slide (Site A) and about 2400 ft south of railroad bridge over Buttermilk Creek. Note: Flatstone cobble to boulder gravel exposed in banks of stream terrace at 1255 to 1245 ft altitude.

1321-1306 Till: Silty clay-rich; pebble content 10-20%; oxidized to depth of about 6 ft along slope, oxidized mottling and root tubes below
1306-1305.5 Till: Brightly oxidized pebbly clay till, bright yellowish orange and red oxidation around pebbles; pebbles unusually abundant, form perhaps 25-35% of core
1305.5-1291 Deltaic: Sand, chiefly medium to fine with layers of fine pebbles (in upper part) and coarse sand
1291-1284 Deltaic: Layered yellowish brown fine to very fine sand and coarse silt; dry
1284-1283 Lacustrine: Silt to very fine sand, saturated
1283-1280 Lacustrine: Layered yellowish brown silts and clays, saturated
1280-1279 Lacustrine: Mixed layers of yellowish brown and gray silts and clay, saturated
1279-1278 Lacustrine: Gray silt, saturated.
1278-1253 Not exposed
1253-1242 Till: Gray silty clay with low pebble content; one contorted stringer of grayish-red stony till

Site Z Lat 42°217'11", Long 78°38'23", south bank, tributary to Buttermilk Creek, north of Heinz Road, above bedrock in channel 1,000 ft east of railroad.

1310-1307 Till: stony silt, unoxidized
1307-1304 Not examined
1304-1303.5 Silt and very fine sand, oxidized
1303.5-1296 Sand, fine to coarse, with granules and pebbles, loose, clean; grading to pebble gravel; layer of layered oxidized clay 0.3 ft thick, also layers of medium to fine sand.
1296-1291.5 Silt, with layers of silty very fine sand, oxidized; thin clay layers near base
1291.5-1289 Silt to clayey silt, unoxidized, gray; layer silty fine sand 0.1 ft thick; layer of till-like pebbly clayey silt 0.2 ft thick
1289 Refusal
1272 Bedrock exposed in creek bed

Site 1B Lat 42°26'10", Long 78°38'06", spillway from Nuclear Fuel Services water-supply lakes, immediately south of railroad spur crossing Buttermilk Creek.

1350-1337 Covered, below floor of spillway
Exposure in gully and slide face
1337-1325.5 Till: pebbly silt clay with scattered wisps of deformed silt; 50 ft southeast, the till includes a layer of nearly pebble-free clayey silt with silt partings
1325.5-1321 Clay or silty clay, with regular partings of silt and layers of pebbly clayey sandy silt 5 mm to 1 ft thick; also small blebs and contorted wisps of silt, or silt with embedded sand and pebbles. Beds dip southeast; true dip at 2 points 8° and 26° at S50°E
1321-1317.5 Gravel: chiefly pebbles and small cobbles, poorly sorted and moderately silty; pinches out to north within 25 ft. Beds dip southeast; true dip at 2 points 8° and 26° at S50°E
1317.5-1311 Silt to very fine sand, some coarser sand, some silty clay; deformed, with bedding at various dips up to 45° and irregular nonbedded masses
Auger hole
1311-1308 Very fine sand to coarse silt, loose, interbedded near base with hard fine silt and loose fine sand
1308-1306.5 Sand, fine; some medium to coarse sand near top; silt layers near base; scattered pebbles throughout
1306.5-1300.5 Sand, fine very fine, and coarse silt
1300.5-1298 Sand, medium to fine, fine to very fine, and very fine to coarse silt; layered; one layer medium to very coarse sand 0.2 ft thick
1298-1296 Sand, fine to very fine, saturated, oxidized
1296-1295.5 Silt, massive, gray, unoxidized

Site 1C Lat 42°26'14", Long 78°38'03", left (west) bank of Buttermilk Creek, 270 feet downstream from downstream end of culvert for railroad spur to West Valley Nuclear Service Center.

1303-1296 ft Gravel, pebbles to large cobbles, some coarse sand, slightly silty, loose; grades to sparsely pebbly medium to very coarse sand in top 1 ft, crude horizontal layering; topography suggests this unit is modern terrace alluvium of Buttermilk Creek
1296-1293.5 Silt, interbedded with very fine sand, in layers 0.5 ft or more thick

Table 4.--Records of Geologic Sections (continued)

1293.5-1291	Silt, with thin layers of very fine sand
1291-1282	Silt, and very fine sand to silt; interbedded with many parallel clay layers ranging in thickness from a parting to 1 cm, separated by 15 cm to 1 mm, pale grayish red. Bedding appears to dip 7° NW in face N25°W
1283-1280±	In creek channel for 270 ft upstream: clay and silt, rare till-like streaks, generally subhorizontal but one fold noted

Site 1D Lat 42°26'17", Long 78°37'55", left bank Gooseneck Creek 600 ft upstream from railroad

1408	Top of slope, level surface
1408-1390	Not examined, probably gravel
1390-1386	Gravel, pebbles and small cobbles with clean coarse sand
1386-1364	Till; chiefly clay and silt with 10-15% gravel and coarse sand; olive gray, top 0.7 ft oxidized. Examined only at top and base; remainder covered
1364-1355	Not examined, probably mostly till
1355-1354	Clay, massive and very fat, unoxidized, gray with faint red tinge, soft
1354-1353.5	Clay and silty clay, layers 5-10 mm thick, with scattered small pebbles; oxidized, very firm
1353.5-1348	Gravel; pebbles and small cobbles with clean coarse sand at top, fine gravel at base
1348-1346.5	Clay, gray to pinkish gray; and silt, gray to yellow-brown, in thin discontinuous and somewhat flow-distorted layers; a few thin layers of very fine sand
1346.5-1344	Clay, gray to pinkish gray, and silt, gray to brownish gray, in thin regular horizontal layers; a few thin layers of very fine sand, oxidized; calcite-cemented layer 5 mm thick at base
1344-1336	Gravel, small pebbles with abundant coarse sand, silty near top
1336-1329	Clay, reddish gray, alternating with silt, olive gray, in layers generally 0.02 to 0.07 ft thick, although the clay layers include additional silt partings; grades into nearly massive silty clay that contains rare to abundant blebs of light reddish-gray clay and silt, rare wisps of silt, rare faint layering, and very rare pebbles
1329-1328.5	Silt, massive, light gray, saturated; no clay or pebbles
1328-1320	Till, predominantly clay and silt, about 10% pebbles and coarse sand, unoxidized; a few deformed silt wisps
1320-1314	Silt, interlayered with silty very fine sand, fine sand, and clay; sandy units oxidized, silts variably oxidized (oxidation may be a surface phenomenon)
1304-1297	Sand; chiefly fine or medium to very fine sand and silty very fine sand; lenticular parallel bedding, oxidized, included irregular masses of unoxidized gray silt with flow boundaries; slumping or flow of silt is original, not recent slumping on the slope
1297	(Stream grade)
1297-1287	Till, clayey, tough and dense; traces of deformed silt layers at top; upper surface is 2 ft higher a few feet away
1314-1308.5	Silt to fine sand (may be slumped material)
1308.5-1308	Till, oxidized (may be slumped material)
1308-1300	Not examined
1300	Gooseneck Creek

Site 1J Lat 42°26'28", Long 78°38'17", exposures and auger hole along Buttermilk Creek from Buttermilk Road south to Gooseneck Creek.

A. Nearby continuous exposure 2 ft high along right bank 500 to 700 south of Buttermilk Hill Road, and 5 to locally 12 ft high 800 to 900 ft south of road.

1271-1265 ft	Till (?) probably as below, poorly exposed
1265-1259	Till: unoxidized silty clay with uniformly scattered sand, pebbles, and very rare cobbles; partings and slivers of coarse white silt 1-3 mm thick and a few cm long are common, generally occurring in clusters or lenses as much as 0.4 ft thick, deformed but crudely horizontal; no gross stratification
1259-1256	Till (?): unoxidized gray silty clay with sparse scattered sand and small pebbles, also abundant wisps of coarse silt and blebs of rose silt; crude stratification visible, including some folds

B. Auger hole and continuous exposures 1100 to 2000 ft south of Buttermilk Hill Road; last exposure 350 ft north of mouth of Gooseneck Creek.

1275-1268 ft	Clay, with partings of silt etched by stream erosion; deformed in broad folds 1-2 ft or more in amplitude, some limbs nearly vertical; locally abundant silt wisps; no stones or sand
1268-1259.5	Clay, gray, unoxidized, plastic, very infrequent silt partings, no stones or sand. No folding at 1268-1263, auger hole below
1259.5-1259.5	Clay, plastic, with abundant silt in partings, deformed streaks, and regular layers as thick as 0.1 ft; blebs of rose silt at 1258 ft; very rare scattered pebbles and no sand

Comment: The exposure at A may mark the advance of a floating ice tongue into a lake, dropping grit and stones into lacustrine deposits similar

to those to the south. If ice advance caused the folding at the top of the section (and at 1C), some time must have elapsed before it crossed the area.

Site 1H East bluff of Buttermilk Creek, at sharp end in creek 600 ft north of railroad bridge.

	Exposure*
1270 ft	Top of small scarp, gentle slope above
1270-1268.5	Till
1268.5-1266.5	Gravel, small pebble sizes, and pebbly coarse sand; abrupt lower contact
1266.5-1265	Sand, fine to very fine, oxidized
1265-1254	Not exposed Multiple Auger Holes
1254-1245	Sand, very fine, and silt with very fine sand; some clay partings 1-2 mm thick; oxidized, saturated
1245-1238	Not examined
1238-1233	Sand, fine, to coarse silt; oxidized
1233-1223.5	Silts and clays, layered, no pebbles, gray saturated

* Units exposed are broken by very recent tension cracks, but the similarity of the very fine sand in the lower part of the exposure to the materials below 1254 ft suggests a continuous depositional unit. The overlying gravel and till appeared to be in place rather than the product of mass movement. However, 65 ft north the gentle slope formed on this lacustrine section butts against a much steeper slope, at the base of which the following hole was augered:

1271.5-1255.5	Till, unoxidized; generally less than 5% pebbles but with pebbly intervals and with silt wisps at 1263 ft.

Site 1L Lat 42°27'18", Long 78°38'46", west bluff of Buttermilk Creek, about 700 ft south of site K or 1200 ft south of railroad bridge over Buttermilk Creek, and 700 ft north of site I.

1281-1276	Till: silty clay with 10-15% scattered sand and pebbles; mottled oxidized (10YR5/2-5/4) and unoxidized olive gray from depth of 2 to 4.5 ft, oxidized (10YR4/3) from 4.5 to 5 ft
1276-1275	Gravel: pebbles in a cohesive matrix of slightly silty sand, silt caps on some pebbles, oxidized (10YR5/4)
1275-1274.5	Silt, oxidized (10YR5/6)
1274.5-1272	Sand, medium to very coarse, pebbly, clean. Refusal on stones
1272-1264	Not examined
1264-1263	Gravel: chiefly granules and fine pebbles, a few pebbles to 3 inches diam., in a matrix of silty fine sand. Probably in place
1263-1261	Not examined
1261-1260	Silt to very fine sand
1260-1249	Not examined
1249-1240	Silt to very fine sand, with thin layers or partings of clay, oxidized except lowest 1 ft unoxidized and saturated