

**GROUND-WATER BASIC DATA**

**for**

**RAMSEY COUNTY,  
NORTH DAKOTA**

**by**

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U.S. Geological Survey

**COUNTY GROUND-WATER STUDIES 26 — PART II**  
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# GROUND-WATER BASIC DATA, RAMSEY COUNTY, NORTH DAKOTA

By R. D. Hutchinson

## INTRODUCTION

The investigation of the geology and ground-water resources of Ramsey County (fig. 1) was made cooperatively by the U.S. Geological Survey, North Dakota State Water Commission, North Dakota Geological Survey, and Ramsey County Board of Commissioners. The results of the investigation will be published in three separate parts. Part I is an interpretive report describing the geology of the study area; part II is a compilation of the ground-water basic data; and part III is an interpretive report describing the ground-water resources. Part II makes available geologic and hydrologic data collected during the county investigation and functions as a reference for the other reports.

The stratigraphic nomenclature used in this report is that of the North Dakota Geological Survey and does not necessarily follow the usage of the U.S. Geological Survey.

The following table may be used to convert English units to the International System (SI) of metric units.

<u>Multiply English units</u>	<u>By</u>	<u>To obtain SI units</u>
Inches (in)	25.4	millimeters (mm)
	.0254	meters (m)
Feet (ft)	.3048	meters (m)
Miles (mi)	1.609	kilometers (km)
Square miles (mi <sup>2</sup> )	2.590	square kilometers (km <sup>2</sup> )
Acres	4,047	square meters (m <sup>2</sup> )
	.4047	hectares (ha)
Gallons (gal)	3.785	liters (l)
	3.785x10 <sup>-3</sup>	cubic meters (m <sup>3</sup> )
Gallons per minute (gal/min)	.06309	liters per second (l/s)
	6.309	cubic meters per second (m <sup>3</sup> /s)
Cubic feet (ft <sup>3</sup> )	28.32	cubic decimeters (dm <sup>3</sup> )
	.02832	cubic meters (m <sup>3</sup> )

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### Purpose

The purpose of the investigation was to provide detailed geologic and hydrologic information needed for the orderly development of water supplies for municipal, domestic, livestock, irrigation, industrial, and similar uses. Specifically, the objectives were to: (1) determine the location, extent, and nature of the major aquifers and confining beds; (2) evaluate the occurrence and movement of ground water, including the sources of recharge and discharge; (3) estimate the potential yields of wells; (4) evaluate the quality of the ground water; and (5) estimate the water use.

### Well- and Location-Numbering System

The wells and test holes in the tables are numbered according to a system of land survey in use by the U.S. Bureau of Land Management and the North Dakota district of the U.S. Geological Survey. The U.S. Bureau of Land Management system is illustrated in figure 2. The first numeral denotes the township north of a base line, the second numeral denotes the range west of the fifth principal meridian, and the third numeral denotes the section in which the well is located. The letters A, B, C, and D designate, respectively, the northeast, northwest, southwest, and southeast quarter section, quarter-quarter section, and quarter-quarter-quarter section (10-acre or 4-ha tract). For example, well 153-063-15ADC is in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$  sec. 15, T. 153 N., R. 63 W. Consecutive terminal numerals are added if more than one well or test hole is recorded within a 10-acre (4-ha) tract. The location of each well and test hole in the tables is shown on plate 1 (in pocket).

### Acknowledgments

The author is indebted to the residents and officials of Ramsey County who furnished essential information on wells and permitted measurements to be made and samples to be taken. Particular recognition is due to the following North Dakota State Water Commission personnel: C. E. Naplin and L. D. Smith, Jr., for logging of test holes, G. O. Muri for chemical analyses of water samples, R. W. Schmid

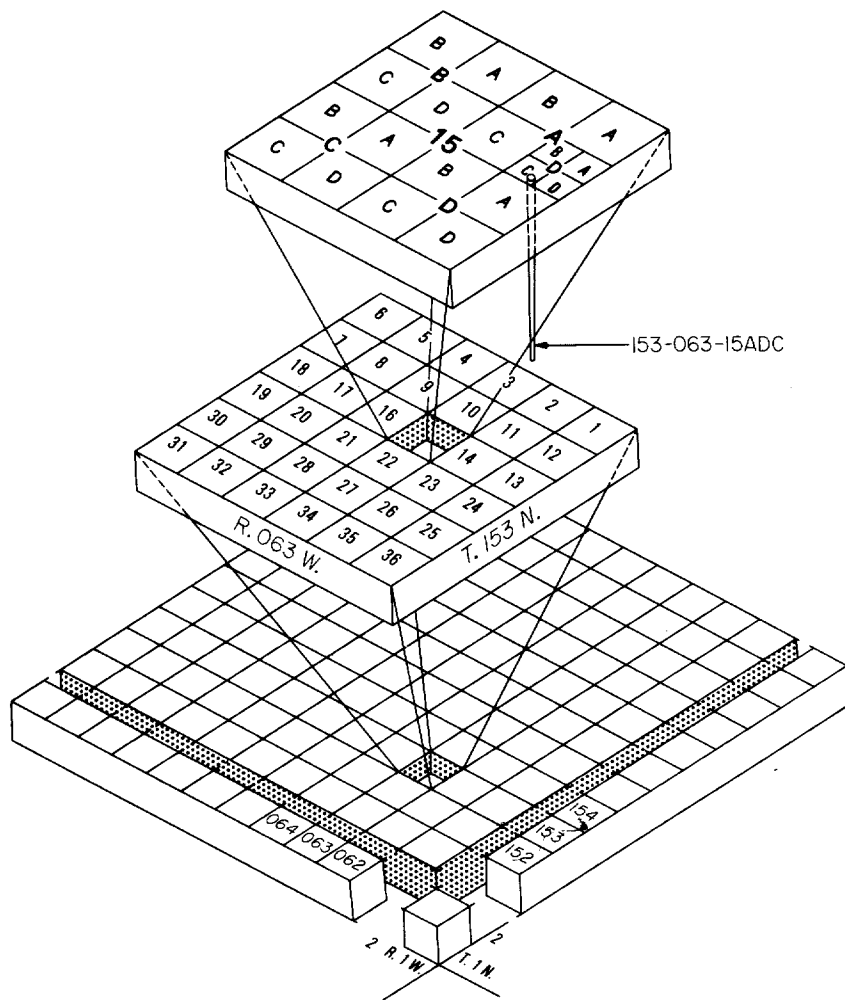


FIGURE 2.—System of numbering wells and test holes

for performing and analyzing an aquifer test, and M. O. Lindvig for coordinating activities. Thanks are also due Nick Erck Well Drilling, L. A. Gjerdevig, Great Northern Railroad (now Burlington Northern, Inc.), Holbeck Well Service, Walter Koehmstedt, Lako Drilling Co., Peterson Well Drilling Co., Carl Ringdahl Water Well Drilling Co., and C. A. Simpson and Son for furnishing drillers' logs and other information in this report.

#### EXPLANATION OF TABLES AND METHODS OF DATA COLLECTION

The data in this report, collected chiefly between 1972 and 1974, are listed in tables 1-5. The points of collection are shown on plate 1. The data consist of the following: (1) Geologic and hydrologic records for 1,145 wells and test holes; (2) water-level measurements in 73 observation wells; (3) lithologic and geophysical logs of 452 test holes and wells; (4) 209 chemical analyses of ground water; and (5) 22 particle-size analyses. The data are useful for evaluating geologic and ground-water conditions in Ramsey County. For example, a person considering the construction of a new well can locate the proposed site on plate 1. Depth, water quality, lithology, and water level of nearby wells and test holes tapping the different aquifers can be determined from the tables. However, use of the data as a guide to conditions at different sites should be made with caution because of the lenticular character of the water-bearing rocks and varying water quality in some aquifers.

#### Records of Wells and Test Holes

Records of selected wells and test holes are given in table 1. Well depth is the depth of casing for open-bottom wells or the base of the well screen. Many test holes were converted to observation wells for water-level measurements and water-quality sampling. At some sites two observation wells were drilled in order to obtain water levels and water samples from different aquifers. The observation wells were constructed of 1½-inch (31-mm) plastic casing with 3- or 6-foot (1- or 2-m) well screen, or 4-inch (102-mm) plastic casing with screen or slotting. The observation wells were developed by backwashing

and pumped a minimum of 8 hours for development before collection of water samples for analysis.

Water Levels in Selected Wells

Table 2 gives water levels in selected wells, in feet above and below land surface, that tap the major aquifers in Ramsey County. Water-level measurements for the project began in May 1973 and continued through 1974. Measurements will continue to be made in many of these wells as part of the statewide observation-well network. Additional water-level data for the study area have been published in U.S. Geological Survey Water-Supply papers (WSP), and include data from the following wells: 153-064-02DAC (1950-55); 153-064-05AAB (1942-64); 153-064-19DAC (1943-56); 153-064-20CCC (1942-48); 153-065-14ACC (1937-58); 154-064-34DDD2 (1950-51, 1954); and 154-064-35CBC (1950-56). The following table gives by year the number of the publication containing the older data.

<u>Year</u>	<u>WSP</u>	<u>Year(s)</u>	<u>WSP</u>
1937	840	1948	1128
1938	845	1949	1158
1939	886	1950	1167
1940	908	1951	1193
1941	938	1952	1223
1942	946	1953	1267
1943	988	1954	1323
1944	1018	1955	1406
1945	1025	1956	1456
1946	1073	1957-61	1781
1947	1098	1962-66	1976

Logs of Wells and Test Holes

Logs collected from water-well drillers and other sources and logs of test holes drilled as part of this project are included in table 3. Minor changes in word order have been made on some of the drillers' logs. Logs of test holes drilled as part of this project are numbered 4772, 8765-8893, 8974-8976, and 9018-9099. Total footage for these test holes was 30,681 feet (9,352 m). For most test holes drilled during this project and some municipal and industrial wells, spontaneous potential and resistivity logs in addition to logs giving description of the materials penetrated are available. These logs are extremely useful for geologic correlation purposes. Grain sizes given in the lithologic logs were established and refer to the classification

used by the U.S. Geological Survey and the National Research Council (1947). Color descriptions were determined by comparing fresh samples with the rock-color chart of the Geologic Society of America (1963).

#### Water Quality

The mineral constituents and physical properties of water are reported in table 4. Water for samples was secured using the existing pumps from privately owned wells and with airlift from the NDSWC observation wells. Generally enough water to clear the well column and plumbing was pumped, then the sample was collected in a polyethylene bottle. When collecting samples of water containing metals considered unstable, a separate sample was filtered and acidified before transport to the laboratory. Samples collected during the project were analyzed by the North Dakota State Water Commission, Bismarck, N. Dak. Methods of analyses were generally those described by Brown and others (1970). The results are expressed in milligrams per liter (mg/l) or micrograms per liter ( $\mu\text{g/l}$ ). A microgram per liter is one-thousandth of a milligram per liter.

Drinking-water standards were established for interstate carriers by the U.S. Public Health Service (1946). These standards were amended in 1956, and in 1962 the standards were again changed and published in the April 5, 1962, Federal Register. These are generally accepted by the North Dakota State Department of Health as guidelines applicable to public water supplies. These standards are:

*"Drinking water shall not contain impurities in concentrations which may be hazardous to the health of the consumers. It should not be excessively corrosive to the water supply system. Substances used in its treatment shall not remain in the water in concentrations greater than required by good practice. Substances which may have deleterious physiological effect, or for which physiological effects are not known, shall not be introduced into the system in a manner which would permit them to reach the consumer.*

*"The following chemical substances should not be present in a water supply in excess of the listed concentrations where, in the judgment of the Reporting Agency and the Certifying Authority, other more suitable supplies are or can be made available.*

<u>Substance</u>	<u>Concentrations in mg/l</u>
Alkyl Benzene Sulfonate (ABS)-----	0.5
Arsenic (As)-----	0.01
Chloride (Cl)-----	250.
Copper (Cu)-----	1.
Carbon Chloroform Extract (CCE)-----	0.2
Cyanide (CN)-----	0.01
Fluoride (F)-----	(See 5.23)
Iron (Fe)-----	0.3
Manganese (Mn)-----	0.05
Nitrate <sup>1</sup> (NO <sub>3</sub> )-----	45.
Phenols-----	0.001
Sulfate (SO <sub>4</sub> )-----	250.
Total Dissolved Solids-----	500.
Zinc (Zn)-----	5.

<sup>1</sup>In areas in which the nitrate content of water is known to be in excess of the listed concentration, the public should be warned of the potential dangers of using the water for infant feeding.

"The presence of the following substances in excess of the concentrations listed shall constitute grounds for rejection of the supply:

<u>Substance</u>	<u>Concentrations in mg/l</u>
Arsenic (As)-----	0.05
Barium (Ba)-----	1.0
Cadmium (Cd)-----	0.01
Chromium (Hexavalent) (Cr <sup>+6</sup> )-----	0.05
Cyanide (CN)-----	0.2
Fluoride (F)-----	(See 5.23)
Lead (Pb)-----	0.05
Selenium (Se)-----	0.01
Silver (Ag)-----	0.05

"5.23 Fluoride.--When fluoride is naturally present in drinking water, the concentration should not average more than the appropriate upper limit shown in the following table. Presence of fluoride in average concentrations greater than two times the optimum values listed shall constitute grounds for rejection of the supply.

"Where fluoridation (supplementation of fluoride in drinking water) is practiced, the average fluoride concentration shall be kept within the upper and lower control limits listed below:

<u>Annual average of maximum daily air temperatures<sup>1</sup></u>	<u>Recommended control limits-- Fluoride concentrations in mg/l</u>		
	<u>Lower</u>	<u>Optimum</u>	<u>Upper</u>
50.0 - 53.7-----	0.9	1.2	1.7
53.8 - 58.3-----	0.8	1.1	1.5
58.4 - 63.8-----	0.8	1.0	1.8
63.9 - 70.6-----	0.7	0.9	1.2
70.7 - 79.2-----	0.7	0.8	1.0
79.3 - 90.5-----	0.6	0.7	0.8

<sup>1</sup>Based on [Fahrenheit] temperature data obtained for a minimum of five years."

## Mineral Constituents in Solution

### Silica ( $\text{SiO}_2$ )

Weathering processes dissolve silica from practically all rocks. Silica affects the usefulness of water because it can contribute to the formation of scale in pipes, water heaters, and boilers in the presence of calcium and magnesium.

### Iron (Fe)

Iron is a widespread constituent in rocks and is easily leached by ground water under reducing conditions or in acidic water. Water containing more than 30  $\mu\text{g}/\text{l}$  of iron, after exposure to air, may become discolored. Reddish-brown stains on porcelain or enamelware and fixtures and on fabrics washed in the water result from the iron-imparted turbidity.

### Manganese (Mn)

Manganese in concentrations as low as 200  $\mu\text{g}/\text{l}$  may cause a dark-brown or black stain on fabrics and porcelain fixtures. Ground water that contains high concentrations of iron may also have considerable amounts of manganese.

### Calcium and Magnesium (Ca and Mg)

Limestone and similar rocks are the principal source of calcium and magnesium in natural water. Calcium and magnesium cause water hardness and, with anions, can form scale on utensils and in water heaters, boilers, and pipes.

### Sodium and Potassium (Na and K)

Sodium and potassium are present in many igneous and sedimentary rocks. Sodium dissolves readily and when brought into solution it tends to remain in solution. Potassium is dissolved with greater difficulty and exhibits a stronger tendency to be reincorporated into solid weathering products, especially clay minerals. In most natural water the concentration of potassium is much lower than the concentration of sodium. Water that contains a large proportion of sodium salts may be unsatisfactory for irrigation on certain types of poorly drained soils. The presence of several hundred milligrams per liter

of sodium in water can make it unsuitable for use in sodium-restricted diets (North Dakota State Department of Health, 1962).

#### Bicarbonate and Carbonate ( $\text{HCO}_3$ and $\text{CO}_3$ )

Bicarbonate and carbonate ions are the major cause of alkalinity in most water. The significance of alkalinity to the domestic, agricultural, and industrial user is usually dependent upon the nature of the cations (Ca, Mg, Na, and K) associated with it. However, moderate amounts of alkalinity do not adversely affect most uses.

Alkalinity can be calculated from the analyses by using the formula:

$$\text{Alkalinity (as CaCO}_3) = 0.82 (\text{HCO}_3) + 1.67 (\text{CO}_3)$$

#### Sulfate ( $\text{SO}_4$ )

Metallic sulfide minerals in both sedimentary and igneous rocks, upon weathering or with bacterial action, are converted to sulfates. Sulfate may also be dissolved from beds of gypsum and deposits of sodium sulfate.

#### Chloride (Cl)

Chloride is present in all natural waters, but the concentrations usually are low. Important sources of chloride are sedimentary rocks that were deposited under marine conditions.

#### Fluoride (F)

Fluoride in the ground water is probably derived from solution of fluorite, apatite, and hornblende minerals.

#### Nitrate ( $\text{NO}_3$ )

The occurrence of high nitrate concentrations in shallow ground water has been attributed to leaching in feedlots or to fertilizer from irrigated fields where nitrogen compounds have been applied. High nitrate content is undesirable in drinking water because of its bitter taste and because it has been reported to cause methemoglobinemia in infants (Comly, 1945).

#### Boron (B)

Boron is a constituent of the mineral tourmaline and may be



present in biotite and amphiboles. In small quantities boron is essential for plant growth. Excessive concentrations in soil and in irrigation water are harmful for some plants.

#### Dissolved solids

The concentration of dissolved solids is calculated from the weight of residue on evaporation at 180°C from a known quantity of water.

### Properties and Characteristics of Water

#### Hardness

Calcium and magnesium are the principal cause of hardness. Hardness exhibits the characteristic of requiring greater quantities of soap to produce a lather as the hardness increases. Hard water also can contribute to the formation of scale in boilers, water heaters, radiators, and pipes, with a resultant decrease in the rate of water flow and(or) heat transfer.

The hardness that is equivalent to the alkalinity is called carbonate hardness, and any excess is called noncarbonate hardness. The carbonate hardness is the quantity that will contribute scale on heating and the noncarbonate hardness is the quantity of hardness that will remain after precipitation of the carbonate hardness. As a general reference, the U.S. Geological Survey uses the following classification of water hardness.

<u>Calcium and magnesium hardness, as CaCO<sub>3</sub> (milligrams per liter)</u>	<u>Hardness description</u>
0-60	Soft
61-120	Moderately hard
121-180	Hard
More than 180	Very hard

#### Percent sodium and sodium-adsorption ratio (SAR)

The percent sodium is the percentage of sodium to all cations, with the cations in milliequivalents per liter. The displacement of calcium and magnesium by sodium in soils is slight unless the percent sodium is considerably higher than 50.

The term sodium-adsorption ratio (SAR) was introduced by the U.S.

Salinity Laboratory Staff (1954). Their experiments show that the SAR relates to the degree water enters into cation-exchange reactions with soil. SAR is expressed by the equation:

$$SAR = \frac{Na^+}{\sqrt{\frac{Ca^{++} + Mg^{++}}{2}}}$$

where the concentrations of the ions are expressed in milliequivalents per liter. The U.S. Salinity Laboratory Staff (1954) divided water into sixteen classes, depending upon the SAR and specific conductance. The classifications indicate the usefulness of water for irrigation of different crops on different types of soil.

#### Specific conductance (micromhos per centimeter at 25°C)

Specific conductance is a measure of the ability of water to conduct an electric current. Approximately 0.65 to 0.70 of the specific conductance is an estimate of the amount of dissolved solids, in milligrams per liter, in water.

#### Hydrogen-ion concentration (pH)

Hydrogen-ion concentration (activity) is expressed in terms of pH units. The values of pH often are used as a measure of the solvent power of water.

The hydrogen-ion concentrations affect the corrosiveness of water. A pH of 7.0 indicates that the water is neutral, neither acidic nor basic. Readings progressively lower than 7.0 denote increasing acidity, and those progressively higher than 7.0 denote increasing alkalinity.

#### Temperature

Temperature is an important factor in evaluating the usefulness of water. This is evident for such a direct use as an industrial coolant. Temperature is also important, but perhaps not so evident, for its influence upon concentrations of dissolved gases and mineral matter in water. Water temperature given in table 4 is expressed in degrees Celsius (Centigrade). Degrees Celsius and the equivalent temperature in degrees Fahrenheit are given in appendix A.

### Particle-Size Analyses

Particle-size analyses made by the U.S. Geological Survey and North Dakota State Water Commission are given in table 5. The analyses were made on samples of glacial drift collected during test-hole drilling. Values are fraction of bulk sample retained in each sieve of a standard nested set. Median grain size is the diameter for which 50 percent of the particles are finer. Sorting coefficient is the square root of the ratio of the third quartile size to the first quartile size. The smaller the sorting coefficient, which has a lower limit of 1, the more uniform is the grain size of the sediment.

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TABLE 1.--Records of wells and test holes

EXPLANATION

<u>Owner</u>	<u>Principal aquifer</u>
NDSWC 8858, North Dakota State Water Commission, test hole number 8858	112, Pleistocene 211, Upper Cretaceous 217, Lower Cretaceous
NDSWC PW, North Dakota State Water Commission aquifer-test production well	BGFV, buried glaciofluvial deposits
USAF 103, U.S. Air Force, test hole number 103	DKOT, Dakota ICCC, ice-contact deposits PIRR, Pierre PLSC, Pleistocene SPRD, Spiritwood TILL, till deposits WRCK, Warwick
USBR SUBSTATION, U.S. Bureau of Reclamation, substation	
USGS 121, U.S. Geological Survey, test hole number 121	
	<u>Lithology of principal aquifer</u>
<u>Water level (feet)</u>	GRVL, gravel SHLE, shale SNDS, sandstone
Water level, in feet below or (+) above land surface	
F, well flows	<u>Specific conductance</u>
	Value shown is the field specific conductance measured at the well at the time of inventory.
<u>Use of water</u>	
C, commercial	
H, domestic	
I, irrigation	
N, industrial, includes mining	
P, public supply	
S, stock	
U, unused	

LOCAL NUMBER	OWNER	DEPTH DRILLED (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAMETER (INCHES)	DATE COMPLETED	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	USE OF WATER	PRINCIPAL AQUIFER	LITHOLOGY OF PRINCIPAL AQUIFER	SPECIFIC CONDUCTANCE (µMHOS/CM @ 25°C)	ALTITUDE OF LAND SURFACE (FEET)
151-062-01DCD	G.WYMAN	235	235	--	5	1940	63	07/ /1950	S	112SPRD		1230	1515
151-062-02ABC	F.REEVES	268	268	--	3	1947	116	07/ /1950	H+S	112SPRD		1250	1550
151-062-02CCD	O.JORAMO	67	67	--	48	1910	65	07/ /1950	H+S	112WRCK		--	1547
151-062-03ADD	TEST HOLE 337	140	--	--	--	1950	--	--	U	--		--	1611
151-062-03BBB	M.CHRISTOFFERSON	22	22	--	14	1947	6	07/ /1950	S	112TILL		--	1475
151-062-03BDC	H.BAKER	55	55	--	22	1929	54	07/ /1950	H+S	112PLSC		--	1517
151-062-03DAD	J.MURPHY	310	310	--	--	--	109	07/ /1950	H+S	112SPRD		--	1555
151-062-03DDD	NDSMC 8858	380	65	--	1	1973	49	09/ /1973	U	112WRCK		--	1530
151-062-09ABB	NDSMC 8857	240	203	--	1	1973	50	09/ /1973	U	112SPRD	SAND	--	1495
151-062-09BAA	D.WESSELS	32	32	--	--	--	20	08/ /1950	H	112PLSC		--	1496
152-062-018AA	A.NELSON	30	30	--	36	1966	--	--	H	112PLSC		2450	1510
152-062-03BBB	BRAATEN BROS	110	110	--	6	1953	--	--	H	211PIRR	SHLE	675	1512
152-062-05ADO	D.CALDERWOOD	150	150	130	6	1957	--	--	S	112BGFV		1980	1518
152-062-07AAB	D.BROWN	39	39	--	--	--	19	06/ /1950	S	112PLSC		--	1502
152-062-07ACA1	NDSMC 8853	300	203	--	1	1973	64	09/ /1973	U	112SPRD	SAND	2320	1494
152-062-07ACA2	NDSMC 8853-A	80	60	--	1	1973	10	09/ /1973	U	112BGFV	GRVL	2140	1494
152-062-07DBD	A.OSBORNE	47	47	--	--	--	21	06/ /1950	S	112PLSC		--	1495
152-062-09CBB	J.COE	110	110	--	6	1944	24	06/ /1950	H+S	112PSC		1500	1497
152-062-11DBA	R.CALDERWOOD	37	37	--	--	--	16	06/ /1950	U	112PLSC		--	1497
152-062-12CAD	M.BLAUFUSS	108	108	--	5	1925	--	--	H	211PIRR	SHLE	1650	1525
152-062-12DAD	USAF 103	130	130	--	4	1962	21	04/ /1962	U	211PIRR	SHLE	--	1492
152-062-13ACC1	J.FISK	112	112	--	6	1915	42	07/ /1950	S	211PIRR	SHLE	--	1527
152-062-13ACC2	J.FISK	113	113	--	4	1950	22	07/ /1950	H	211PIRR	SHLE	--	1527
152-062-13DDC1	J.FISK	56	56	--	--	--	17	07/ /1950	S	211PIRR	SHLE	--	1500
152-062-13DDC2	J.FISK	27	27	--	--	--	16	07/ /1950	U	112PLSC		--	1500
152-062-14ABB	M.RASMUSSEN	44	44	--	24	1917	22	06/ /1950	H+S	211PIRR	SHLE	--	1500
152-062-15BAB	NDSMC 8810	60	--	--	--	1973	--	--	U	--		--	1480
152-062-15BDA	C.RASMUSSEN	45	45	--	24	1936	35	07/ /1950	H+S	112PLSC		--	1505
152-062-15DCB	C.STARKHOUSE	40	40	--	4	1910	26	07/ /1950	U	112PLSC		--	1495
152-062-17ADA	B.ZBYTOVSKY	155	155	--	4	1910	58	06/ /1950	H+S	112SPRD		--	1490
152-062-21BCA	J.DIMMLER	45	45	--	20	1901	32	06/ /1950	S	112PLSC		1320	1480
152-062-21DBD	NDSMC 8854	180	130	--	1	1973	14	09/ /1973	U	112SPRD	SAND	--	1446
152-062-23BDB1	H.RASMUSSEN	68	68	--	4	1935	22	06/ /1950	H+S	112PLSC		--	1490
152-062-23BDB2	H.RASMUSSEN	28	28	--	--	--	18	07/ /1950	U	112PLSC		--	1490
152-062-25DDC	W.MARTIN	50	50	--	4	1929	30	07/ /1950	H+S	112PLSC		1630	1495
152-062-26ACB	H.THELEN	37	37	--	24	1948	11	07/ /1950	S	112PLSC		--	1493
152-062-26ACC	H.THELEN	40	40	--	67	1930	17	07/ /1950	H+S	112BGFV		--	1487
152-062-27AAA	NDSMC 8859	200	143	--	4	1973	13	10/ /1973	U	112SPRD	GRVL	--	1448
152-062-27DCD	J.RUST	300	300	--	4	1908	41	07/ /1950	H+S	211PIRR	SHLE	--	1485
152-062-28ABC	O.COX	130	130	--	--	--	27	07/ /1950	H+S	112SPRD		1100	1463

LOCAL NUMBER	OWNER	DEPTH DRILLED (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAMETER (INCHES)	DATE COMPLETED	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	USE OF WATER	PRINCIPAL AQUIFER	LITHOLOGY OF PRINCIPAL AQUIFER	SPECIFIC CONDUCTANCE (UMHOS/CM @ 25°C)	ALTITUDE OF LAND SURFACE (FEET)
152-062-28880	NDSWC 8855	240	143	--	1	1973	13	09/ /1973	U	112SPRD	GRVL	--	1445
152-062-33DC8	NDSWC 8856	380	203	--	1	1973	43	09/ /1973	U	112SPRD	SAND	--	1488
152-062-348C8	R.WALKER	65	65	--	--	--	37	07/ /1950	U	112PLSC	--	--	1485
152-063-02CRD	R.RUTTEN	135	135	--	6	1945	37	07/ /1949	S	112SPRD	--	1610	1465
152-063-02CDB1	L.FLEMING	22	22	--	--	--	13	07/ /1949	U	112PLSC	--	--	1455
152-063-02CDB2	L.FLEMING	140	140	--	4	1915	30	07/ /1949	H,S	112SPRD	--	1320	1455
152-063-03ABA	NDSWC 8850	180	143	--	1	1973	33	09/ /1973	U	112SPRD	SAND	1970	1461
152-063-12AAC	J.BROWN	100	100	--	4	1918	39	07/ /1949	H,S	112PLSC	--	--	1470
152-063-128A8	NDSWC 8851	180	--	--	--	1973	--	--	U	--	--	--	1442
152-063-13ABD	NDSWC 8852	360	303	--	1	1973	47	09/ /1973	U	112SPRD	SAND	2350	1469
152-063-13ADC	M.KIRK	175	175	--	4	1912	50	07/ /1949	H,S	112PLSC	--	2400	1477
152-063-13CAB	J.LUNES	31	31	--	--	--	13	08/ /1950	S	112PLSC	--	--	1425
153-061-01ADD	H.WESTENSEE	110	110	--	6	1958	--	--	H	211PIRR	SHLE	5000	1510
153-061-02CC8	T.SNORTLAND	60	60	--	6	1940	--	--	H	211PIRR	SHLE	2500	1510
153-061-03888	NDSWC 8806	60	--	--	--	1973	--	--	U	--	--	--	1512
153-061-08CCC	NDSWC 8807	60	--	--	--	1973	--	--	U	--	--	--	1500
153-061-13DDD1	R.THOMPSON	95	95	40	6	1956	--	--	H	211PIRR	SHLE	6000	1515
153-061-13DDD2	R.THOMPSON	120	120	--	--	--	--	--	S	211PIRR	SHLE	4900	1515
153-061-14CAC	USAF 2031	130	130	--	4	1962	18	11/ /1962	U	211PIRR	SHLE	--	1520
153-061-17888	K.THOMPSON	175	175	--	6	1959	--	--	H	211PIRR	SHLE	5000	1513
153-061-19DBA	J.TRONSON	60	60	--	6	1949	--	--	H	211PIRR	SHLE	2300	1510
153-061-21CC8	G.EVANS	90	90	--	6	1961	--	--	H	211PIRR	SHLE	1420	1505
153-061-22DDD	J.SITAR	80	80	--	6	1953	--	--	H	211PIRR	SHLE	2020	1524
153-061-2588A	E.MILLER	80	80	--	--	1973	30	10/ /1973	H	211PIRR	SHLE	1950	1536
153-061-25CDB	H.BAGNE	150	150	--	6	1962	--	--	H	211PIRR	SHLE	3800	1535
153-061-25DCB	USAF 31	130	130	--	4	1962	22	04/ /1962	U	211PIRR	SHLE	--	1533
153-061-31DAA	NDSWC 8809	60	--	--	--	1973	--	--	U	--	--	--	1509
153-061-34AAA	NDSWC 8808	60	--	--	--	1973	--	--	U	--	--	--	1510
153-061-34DAD	H.DOYLE	129	129	--	6	1931	--	--	H	211PIRR	SHLE	3050	1515
153-062-01DAA	D.WENTZ	132	132	--	5	1912	--	--	H	211PIRR	SHLE	4400	1500
153-062-04CDD	R.STEINHAUS	64	64	--	6	--	24	07/ /1950	H,S	112PLSC	--	--	1505
153-062-0588D1	J.RIGGENBUCK	200	200	--	--	1946	20	07/ /1950	H	211PIRR	SHLE	--	1487
153-062-0588D2	J.RIGGENBUCK	340	340	--	--	--	20	07/ /1950	S	211PIRR	SHLE	--	1487
153-062-05DAB	O.P.S. HALGREN	83	83	--	6	--	21	07/ /1950	U	112PLSC	--	--	1493
153-062-06AAC	USAF 2039	130	130	--	4	1962	16	11/ /1962	U	211PIRR	SHLE	--	1495
153-062-06BAA	MRS.W.NELSON	21	21	--	30	1920	16	07/ /1950	H,S	112PLSC	--	--	1497
153-062-07ABC	J.NESSETH	189	189	--	4	1915	22	07/ /1950	H,S	211PIRR	SHLE	780	1480
153-062-07DBC	P.NORTON	58	58	--	4	1920	14	07/ /1950	H,S	112PLSC	--	--	1477
153-062-08ABC1	S.MAHONEY	244	244	--	--	--	29	07/ /1950	U	112PLSC	--	--	1493
153-062-08ABC2	S.MAHONEY	82	82	--	4	1949	15	07/ /1950	H,S	112PLSC	--	2850	1493



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153-062-10DBB	H.PETERS	180	180	--	6	1960	--	--	H	211PIRR	SHLE	2000	1511
153-062-11DDC	W.HAMEN	250	250	--	--	--	--	--	H	211PIRR	SHLE	825	1520
153-062-148BB	NDSWC 8812	80	--	--	--	1973	--	--	U	--	--	--	1497
153-062-150DC	R.EVANS	50	50	30	24	1973	18	07/ /1973	U	112PLSC	CLAY	--	1498
153-062-168CC	V.HILGERS	38	98	--	18	1920	6	07/ /1950	H	112PLSC	--	--	1483
153-062-16CAB	J.HILGERS	180	180	--	4	1910	25	07/ /1950	S	211PIRR	SHLE	--	1500
153-062-16CBA	V.HILGERS	151	151	--	4	1946	15	07/ /1950	H+S	211PIRR	SHLE	--	1487
153-062-16CBB1	CITY OF CRARY	270	270	--	4	1946	20	07/ /1950	P	112BGFV	--	--	1486
153-062-16CBB2	D.HOLTER	60	60	--	--	1973	13	08/ /1974	H	112BGFV	SAND	2800	1482
153-062-16CBC	WHEATLAND SCH	32	32	--	48	1937	10	07/ /1950	H	112PLSC	--	--	1483
153-062-16CCB	E.WEIBAUER	32	32	--	--	--	5	07/ /1950	U	112PLSC	--	--	1480
153-062-17AAD	NDSWC 8813	200	--	--	--	1973	--	--	U	112BGFV	--	--	1482
153-062-17ACD	L.SETTER	26	26	--	36	1920	5	07/ /1950	S	112PLSC	--	--	1480
153-062-17ADD1	CRARY TH 3	218	--	--	--	1974	--	--	U	--	--	--	1483
153-062-17ADD2	CRARY TH 4	203	--	--	--	1974	--	--	U	--	--	--	1483
153-062-17DAA1	J.LOFTEN	205	18	--	--	07/01/1950	7	07/01/1950	U	112PLSC	--	--	1482
153-062-17DAA2	CRARY TH	205	--	--	--	01/01/1973	--	--	U	--	--	--	1482
153-062-17DAC	CITY OF CRARY	40	40	--	48	1937	9	07/ /1950	P	112PLSC	--	--	1483
153-062-17DBA	CRARY TH 2	207	--	--	--	1974	--	--	U	--	--	--	1490
153-062-17DCA	CRARY TH 14	63	--	--	--	1974	--	--	U	--	--	--	1490
153-062-17DDB	B.WEIBAUER	28	28	--	48	1900	15	07/ /1950	H+S	112PLSC	--	--	1483
153-062-18AAB	NDSWC 9098	120	--	--	--	1974	--	--	U	--	--	--	1478
153-062-18BA01	E.KECK	60	60	--	4	1900	17	07/ /1950	H+S	112PLSC	SHLE	--	1475
153-062-18BA02	C.KECK	83	83	--	--	1948	19	07/ /1950	U	211PIRR	--	--	1473
153-062-20DCD	CRARY TH 6	83	--	--	--	1974	--	--	U	--	--	--	1492
153-062-20DDA	C.BYE	82	82	--	4	1915	20	07/ /1950	H+S	112PLSC	--	--	1493
153-062-20DDO	R.CONLON	193	193	--	4	1947	40	07/ /1950	H	211PIRR	SHLE	--	1491
153-062-21BBA	J.DAVIS	164	164	--	4	1946	19	07/ /1950	H+S	112BGFV	--	--	1481
153-062-24AAD	USAF 38-1	130	130	--	4	1962	18	04/ /1962	U	211PIRR	SHLE	--	1501
153-062-26CBA	USAF 2038	130	130	--	4	1962	15	11/ /1962	U	211PIRR	SHLE	--	1502
153-062-26CCC	NDSWC 8811	100	--	--	1	1973	--	--	U	--	--	--	1488
153-062-29CCC	NDSWC 9099	100	61	--	--	1974	28	09/ /1974	U	112BGFV	GRVL	2400	1487
153-062-30AAD	MAHER	38	38	--	--	--	25	07/ /1950	H+S	112PLSC	--	--	1512
153-062-31AAA	G.BROWN	140	140	--	4	1949	--	--	H+S	211PIRR	SHLE	3420	1480
153-062-32DAA	D.BROWN	185	185	--	4	1953	18	06/ /1973	H+S	112PLSC	--	3600	1496
153-062-3588B1	J.GILBRAITH	180	180	--	--	--	--	--	H	211PIRR	SHLE	3600	1506
153-062-3588B2	J.GILBRAITH	109	109	--	4	1962	--	--	H	211PIRR	SHLE	690	1505
153-063-01CBB	M.SETTER	--	--	--	24	1920	10	07/ /1949	U	--	--	--	1485
153-063-02AAB	F.FOSTER	165	165	--	4	1917	--	--	H+S	112BGFV	--	--	1502
153-063-05ABB	T.THELIN	40	40	--	36	1936	10	07/ /1948	U	112PLSC	--	--	1475

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153-063-07CCC	R. RUGER	124	124	--	6	1920	--		H,S	211PIRR	SHLE	--	1470
153-063-07CDC	NDSMC 8846	140	--	--	--	1973	--		U	--	--	--	1463
153-063-09ACA	C. HERDA	40	40	--	24	1910	23	07/ /1949	S	112PLSC	--	--	1483
153-063-09CDD	NDSMC 8845	140	103	--	1	1973	19	09/ /1973	U	112BGFV	SAND	--	1472
153-063-11AAA1	F. FOSTER	112	112	--	4	1915	10	07/ /1949	S	112PLSC	--	--	1480
153-063-11AAA2	NDSMC 8844	180	--	--	--	1973	--		U	--	--	--	1478
153-063-11CBA	H. MARQUARDT	154	194	--	--	1928	28	07/ /1949	H,S	211PIRR	SHLE	5100	1500
153-063-12CAB	G. BRICK	36	36	--	36	1900	12	07/ /1949	H,S	112PLSC	--	--	1485
153-063-13CAB	H. JACK	133	133	--	5	1949	32	07/ /1949	H	211PIRR	SHLE	--	1500
153-063-14ABB	H. MARQUARDT	100	100	--	--	1949	25	07/ /1949	U	211PIRR	SHLE	--	1480
153-063-14ADA	C. JACK	72	72	--	4	1926	10	07/ /1949	H,S	112PLSC	--	--	1490
153-063-15DDA	T. OLSON	175	175	--	--	1926	35	07/ /1949	H	211PIRR	SHLE	--	1500
153-063-17DDA1	M. OLSON	180	180	--	--	1926	47	07/ /1948	U	211PIRR	SHLE	--	1480
153-063-17DDA2	BRANDT-MOSHIER	93	93	--	--	1973	15	08/ /1974	H	211PIRR	SHLE	3000	1470
153-063-21DDB	USAF 105	130	190	--	5	1962	18	06/ /1962	U	211PIRR	SHLE	--	1463
153-063-21DDC	A. NEWHOUSE	100	100	--	4	1916	39	07/ /1949	H	211PIRR	SHLE	--	1460
153-063-22BAA	E. KJELDEN	88	88	--	--	1973	28	07/ /1949	S	112PLSC	--	2400	1487
153-063-22DDD	NDSMC 8849	120	--	--	--	1973	--		U	--	--	--	1492
153-063-23ADA	H. MARQUARDT	120	120	--	--	1973	15	07/ /1949	H,S	211PIRR	SHLE	--	1495
153-063-23DCB	E. HEFTI	119	119	--	4	1923	18	07/ /1949	H	211PIRR	SHLE	--	1500
153-063-23DDD	STATE REST STOP	79	79	--	--	1963	--		H	112PLSC	--	--	1502
153-063-26AAC	H. KINDERVAG	130	130	--	4	1919	20	07/ /1949	H,S	211PIRR	SHLE	--	1487
153-063-27AAA	F. LAKE	160	160	--	--	1919	20	07/ /1949	H	211PIRR	SHLE	1900	1496
153-063-27DCC1	T. OLSON	27	27	--	--	1919	17	07/ /1949	U	112PLSC	--	--	1472
153-063-27DCC2	T. OLSON	145	145	--	4	1900	25	07/ /1949	H,S	--	--	--	1472
153-063-28ADD	T. OLSON	40	40	--	4	1945	8	07/ /1949	S	112PLSC	--	--	1460
153-063-29ADD	NDSMC 8847	200	143	--	1	1973	22	09/ /1973	U	112SPRD	GRVL	1090	1449
153-063-33ADD	C. THOMPSON	130	130	--	--	1973	45	07/ /1949	H,S	112SPRD	--	--	1470
153-063-34BCC	NDSMC 8848	200	163	--	1	1973	32	09/ /1973	U	112SPRD	SAND	2325	1463
153-063-35ABB	H. RUTTEN	40	40	--	--	1973	6	07/ /1949	U	112PLSC	--	--	1467
153-063-36DDB	P. TAYLOR	140	140	--	4	1920	46	07/ /1949	H,S	112SPRD	--	1460	1475
153-064-02BBA	T. SABIE	86	86	--	4	1946	--		H	211PIRR	SHLE	--	1465
153-064-02BCD	DUKES	72	72	--	4	1940	12	11/ /1948	H	211PIRR	SHLE	--	1455
153-064-02BDA	L. OVERVOLD	86	86	--	5	1949	14	07/ /1949	H	211PIRR	SHLE	--	1450
153-064-02CAB	ARTCLARE MOTEL	52	52	--	4	1951	--		H	211PIRR	SHLE	--	1454
153-064-03AAC	J. JAEGER	68	68	--	--	1920	15	07/ /1949	H	211PIRR	SHLE	--	1452
153-064-03ABA	A. SWENSON	110	110	--	--	1920	15	07/ /1949	H	211PIRR	SHLE	--	1450
153-064-03ABC	J. SINGER	35	35	--	--	1929	28	07/ /1949	U	112PLSC	--	--	1440
153-064-03ACA	DEVILS L. SHOPS	90	90	--	4	1947	--		H	112BGFV	--	--	1450
153-064-03ACB	BERGSTROM	85	85	--	4	1936	6	07/ /1949	H	112BGFV	--	--	1438

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153-064-03A08	HOLBECK WELL 4	84	84	--	5	1947	11	05/ /1949	H	211PIRR	SHLE	--	1443
153-064-03ADC	C.SCHWALTZ	82	82	--	4	1947	6	07/ /1949	H	211PIRR	SHLE	--	1442
153-064-03BDD	USBR SUBSTATION	48	48	--	5	1951	--	--	U	211PIRR	SHLE	--	1435
153-064-03C8A	E.SMITH	102	102	--	4	1910	40	09/ /1949	H	211PIRR	SHLE	--	1452
153-064-03CBD	L.ENGH	70	70	--	4	1941	15	08/ /1948	H	211PIRR	SHLE	--	1447
153-064-03CDB	I.CLAPP	130	130	--	4	1909	12	08/ /1949	H	211PIRR	SHLE	--	1445
153-064-03DAA	C.ARMOUR	76	76	--	--	1945	8	07/ /1948	H,S	211PIRR	SHLE	--	1445
153-064-04DBA	KURTZ	122	122	--	--	1972	--	--	H	211PIRR	SHLE	--	1452
153-064-05AAB	R.YOUNG	45	45	--	48	1933	24	09/ /1949	H,S	112PLSC	--	5000	1452
153-064-05BAA	M.BERGSRUD	101	101	--	--	1973	--	--	H	211PIRR	SHLE	--	1455
153-064-06CBD	L.PETERSON	40	40	--	--	--	17	07/ /1948	H	112PLSC	--	--	1455
153-064-06CCC	J.PETERSON	120	120	06CC	--	--	38	09/ /1942	H,S	112SPRD	--	--	1473
153-064-07888	TEST MOLE 194	155	--	--	--	1949	--	--	U	--	--	--	1476
153-064-07CDD	T.GALLIGER	114	114	--	--	--	--	--	H	112SPRD	SAND	1880	1457
153-064-07DCB	DEVILS LAKE CC	100	100	--	4	1900	75	07/ /1949	I	112SPRD	--	--	1455
153-064-08AAC	L.WEAVER	94	94	--	6	1920	20	09/ /1942	H,S	112SPRD	--	--	1447
153-064-08ADA	NDSWC 8868	100	--	--	--	1973	--	--	U	--	--	--	1438
153-064-08CDD	E.WILCOX JR.	136	136	--	--	--	36	07/ /1949	H,S	112SPRD	--	--	1450
153-064-09ACC	R.TRENDA	162	162	--	--	1973	78	08/ /1974	H	211PIRR	SHLE	620	1475
153-064-09ACD	N.FRISON	118	118	--	6	1908	20	09/ /1942	H,S	211PIRR	SHLE	--	1455
153-064-09ADA	B.KNUTSON	104	104	--	--	1972	--	--	H	112BGFV	GRVL	3200	1442
153-064-09BAD	L.RIGGEN	119	119	--	6	1917	60	09/ /1942	H,S	211PIRR	SHLE	--	1444
153-064-09CDA	J.ROGERS	119	119	--	6	1902	15	09/ /1942	H,S	211PIRR	SHLE	--	1460
153-064-09DB8	M.MENLHOFF	130	130	--	--	1973	42	--	H	211PIRR	SHLE	565	1470
153-064-10DDD1	H.MAHER	36	36	--	--	--	5	09/ /1943	S	112PLSC	--	--	1445
153-064-10DDD2	NDSWC 8860	80	--	--	--	1973	--	--	U	--	--	--	1442
153-064-110CD	W.SHAFFER	80	80	--	4	1936	40	09/ /1943	H,S	211PIRR	SHLE	--	1465
153-064-12DBC	HERTENS BROS	160	160	--	4	1923	35	07/ /1948	H,S	211PIRR	SHLE	--	1457
153-064-12DBD	LAKEVIEW DAIRY	142	142	--	--	1972	--	--	S	112BGFV	SAND	1490	1460
153-064-16AAB	GREAT NORTH TH3	120	--	--	--	1938	--	--	U	--	--	--	1430
153-064-16AAC1	GREAT NORTH TH2	93	--	--	--	1938	29	10/ /1938	U	--	--	--	1430
153-064-16AAC2	GREAT NORTH TH1	103	--	--	--	1938	29	10/ /1938	U	--	--	--	1430
153-064-16AAC3	GREAT NORTH TH4	101	--	--	--	1938	--	--	U	--	--	--	1430
153-064-16CAD	D.JACOBSON	20	20	--	--	1949	11	07/ /1949	H	112PLSC	--	--	1440
153-064-16CCB	GREAT NORTH TH6	95	--	--	--	1938	--	--	U	--	--	--	1445
153-064-16CCC	GREAT NORTH TH5	106	--	--	--	1938	--	--	U	--	--	--	1440
153-064-16CDC	W.SUMMERS	100	100	--	4	1932	49	09/ /1948	U	112SPRD	--	--	1450
153-064-16CDD	F.FOUGHTY	121	121	--	--	1973	--	--	H	112SPRD	SAND	2600	1445
153-064-17AAA	H.MONTETH	168	168	--	4	1949	40	10/ /1949	H	211PIRR	SHLE	--	1453
153-064-1788C	W.UTHKE	124	124	--	4	1907	46	07/ /1949	U	112SPRD	--	--	1445

LOCAL NUMBER	OWNER	DEPTH DRILLED (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAMETER (INCHES)	DATE COMPLETED	WATER LEVEL (FEET)	DATE WATER MEASURED	USE OF WATER	PRINCIPAL AQUIFER	LITHOLOGY OF PRINCIPAL AQUIFER	SPECIFIC CONDUCTANCE (µMHOS/CM @ 25°C)	ALTITUDE OF LAND SURFACE (FEET)
153-064-18ABA	C. RYPE	123	123	--	4	1949		--	H,S	112SPRD		--	1462
153-064-18CAC	GREENWOOD COMM.	64	64	--	18	1930	59	09/ /1949	U	112PLSC		--	1450
153-064-18CDB	LAKEWOOD PARK	75	75	--	--	1972		--	H	112SPRD		1900	1430
153-064-18CDC	ENGBERTSON BRO.	118	118	--	--	1973	58	--	H	112SPRD	SAND	1880	1457
153-064-18CDD	E. SMITH	140	140	--	4	1935	70	11/ /1948	H	112SPRD		--	1460
153-064-18DBC	D.L. PARK BOARD	132	132	--	4	1934	60	07/ /1949	H	112SPRD		--	1475
153-064-18DCC	LAKEWOOD	55	55	--	18	1930	50	09/ /1949	H	112PLSC		--	1465
153-064-19AAB1	A. MILLER	160	160	--	4	1949	57	10/ /1949	H	112SPRD		--	1467
153-064-19AAB2	NDSWC 8869	200	141	--	1	1973	37	09/ /1973	U	112SPRD	GRVL	--	1465
153-064-19AAB3	NDSWC 8869-A	125	122	--	4	1973	36	10/01/1973	U	112SPRD	GRVL	1370	1465
153-064-19ADD	CAMP GRAFTON	135	135	--	4	1948		--	H	112SPRD		--	1467
153-064-19BAD1	CAMP GRAFTON	158	158	--	4	1906		--	H	112SPRD		--	1457
153-064-19BAD2	CAMP GRAFTON	252	252	--	4	1948		--	H	211PIRR	SHLE	--	1457
153-064-19BBC	GREAT NORTH TH8	185	--	--	--	1938		--	U	--		--	1470
153-064-19DAB1	CAMP GRAFTON	148	148	--	4	1931	49	06/ /1943	H	112SPRD		--	1467
153-064-19DAB2	CAMP GRAFTON	144	144	--	4	1926		--	U	112SPRD		--	1467
153-064-19DAB3	CAMP GRAFTON	148	148	--	4	1925	40	09/ /1942	H	112SPRD		--	1467
153-064-19DAB4	CAMP GRAFTON	138	138	--	4	1905		--	H	112SPRD		--	1467
153-064-19DAC	CAMP GRAFTON	148	148	--	4	1925	54	09/ /1949	H	112SPRD		--	1465
153-064-19DAD	CAMP GRAFTON	182	182	--	4	1934	56	06/ /1943	H	112SPRD		--	1465
153-064-19DDA1	CAMP GRAFTON	150	150	--	4	1943	67	06/ /1943	H	112SPRD		--	1467
153-064-19DDA2	CAMP GRAFTON	169	169	--	4	1943	65	06/ /1943	H	112SPRD		--	1467
153-064-19DDA3	CAMP GRAFTON	155	155	--	6	1938	65	06/ /1943	H	112SPRD		--	1467
153-064-21BAA	TEST HOLE 402	150	--	--	--	1951		--	U	--		--	1445
153-064-21BBA	TEST HOLE 401	150	--	--	--	1951		--	U	--		--	1435
153-064-21CB0	DEVILS LAKE TH1	155	--	--	--	1950		--	U	--		--	1440
153-064-21CDC	DEVILS LAKE TH4	249	249	--	--	1950		--	U	112SPRD		--	1440
153-064-28BCA	TEST HOLE 403	210	--	--	--	1951		--	U	--		--	1435
153-064-28BCD	GN FT TOTTEN ST	258	258	235	4	1928	27	07/ /1928	C	211PIRR	SHLE	--	1440
153-064-28CDD	DEVILS LAKE TH2	200	--	--	--	1950		--	U	--		--	1430
153-064-33BAA	NDSWC 8870	260	--	--	--	1973		--	U	--		--	1425
153-065-01BBA	TEST HOLE 182	150	--	--	--	1949		--	U	--		--	1485
153-065-01CDD	NDSWC 9047	180	--	--	--	1974		--	U	--		--	1446
153-065-02ACC	E. OLSON	142	92	--	4	1939	65	11/ /1972	H,S	112SPRD		1500	1481
153-065-02BCC	H. SHARBONE	160	160	--	4	1912		--	S	112SPRD		1800	1475
153-065-02CCC1	TEST HOLE 188	188	--	--	--	1949		--	U	--		--	1481
153-065-02CCC2	NDSWC 9046	240	141	--	1	1974	57	09/ /1974	U	112SPRD	SAND	1950	1480
153-065-03ABB	NDSWC 4772	180	--	--	--	1974		--	U	--		--	1457
153-065-03BBB	NDSWC 8866	240	163	--	1	1973	35	09/ /1973	U	112SPRD	GRVL	1850	1457
153-065-04ABD	H. DRAM	165	165	--	4	1927		--	H,S	112SPRD		2100	1455

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153-065-04CCC	N. DRAM	43	43	--	--	--	41	09/ /1942	U	112SPRD		--	1415
153-065-04CDB	P. DRAM	165	165	--	4	1941	--	--	U	112SPRD		--	1447
153-065-04CCD	NDSWC 9045	180	121	--	1	1974	22	09/ /1974	U	112SPRD	SAND	1680	1448
153-065-05BAA	A. BO	150	150	--	4	1928	--	--	H,S	112SPRD		1200	1453
153-065-05DBD	A. BO	40	40	0	48	1925	7	08/ /1950	S	112PLSC		--	1420
153-065-05DCA	F. MITZEL	10	10	--	--	--	9	09/ /1943	S	112PLSC		--	1415
153-065-06AAB	H. KOSTECKI	37	37	--	--	--	17	11/ /1972	H,S	112PLSC		--	1460
153-065-06ADA1	H. MITZEL	110	110	--	--	--	--	--	S	112SPRD		2050	1454
153-065-06ADA2	F. MITZEL	80	80	--	4	1950	--	--	H	112PLSC		2000	1454
153-065-06CCC	A. CHRISTIANSON	90	90	--	4	1918	--	--	H,S	112SPRD		1920	1447
153-065-09BBA1	NDSWC 9050	120	101	--	1	1974	--	--	U	112SPRD	SAND	--	1430
153-065-09BBA2	NDSWC 9051	140	101	--	1	1974	--	--	U	112SPRD	SAND	--	1433
153-065-09BBA3	NDSWC PW	130	113	74	12	1974	18	10/ /1974	U	112SPRD	SAND	1900	1443
153-065-09BBD	NDSWC 9049	140	121	--	1	1974	--	--	U	112SPRD	SAND	--	1441
153-065-09BCD	NDSWC 9052	140	101	--	1	1974	14	09/ /1974	U	112SPRD	SAND	2020	1440
153-065-09CCD	T. MCDONELL	125	125	--	4	1943	60	--	H,S	112SPRD		2050	1462
153-065-09DDD1	K. WILFORD	86	86	--	4	1952	--	--	H	112SPRD		1000	1463
153-065-09DDD2	NDSWC 8865	140	120	--	1	1973	35	09/ /1973	U	112SPRD	SAND	--	1458
153-065-10AAA	H. HANSON	150	150	--	4	1949	--	--	S	112SPRD		--	1480
153-065-10ABA	H. FITZPATRICK	93	93	--	6	1927	53	09/ /1942	H,S	112PLSC		1080	1475
153-065-10BBB	NDSWC 9048	280	141	--	1	1974	34	09/ /1974	U	112SPRD	SAND	1620	1460
153-065-10DBB	R. PETERSON	125	125	--	--	1926	--	--	H,S	112SPRD		1280	1472
153-065-11ADD	NDSWC 8867	160	143	--	1	1973	43	09/ /1973	U	112SPRD	GRVL	1600	1464
153-065-11CDD	W. VERSCHURE	75	75	--	4	1913	--	--	H,S	112PLSC		1020	1482
153-065-12BBB	TEST HOLE 193	185	--	--	--	1949	--	--	U	--		--	1482
153-065-12CCD	TEST HOLE 191	175	--	--	--	1949	--	--	U	--		--	1443
153-065-12DDB	W. HANSON	100	100	--	6	1917	--	--	H,S	112SPRD		1550	1457
153-065-12DDD	TEST HOLE 195	150	--	--	--	1949	--	--	U	--		--	1440
153-065-13CAA	F. HENDERSON	175	175	--	--	--	--	--	H,S	112SPRD		1450	1460
153-065-13CAB	TEST HOLE 196	250	--	--	--	1949	--	--	U	--		--	1442
153-065-14ACC	J. KOSTECKI	285	285	--	--	--	46	11/ /1972	U	211PIRR	SHLE	--	1475
153-065-14BBB	TEST HOLE 189	250	--	--	--	1949	--	--	U	--		--	1470
153-065-14CAA	J. ZABSKI	122	122	--	--	1973	50	08/ /1974	H	211PIRR	SHLE	1120	1490
153-065-14CCB	NDSWC 8864	140	120	--	1	1973	26	09/ /1973	U	112SPRD	SAND	2250	1449
153-065-14CCC	TEST HOLE 190	115	--	--	--	1949	--	--	U	--		--	1443
153-065-14CDA	F. WALFORD	92	92	--	6	1912	29	11/ /1972	U	112SPRD		--	1465
153-065-14DAB	R. JOHNSON	98	98	--	4	1926	--	--	H,S	112SPRD		650	1460
153-065-14DCB1	F. WALFORD	112	112	--	--	--	--	--	H	112SPRD		1650	1467
153-065-14DCB2	F. WALFORD	96	96	--	4	--	--	--	S	112SPRD		1580	1468
153-065-150AC	J. KOSTECKI	100	100	--	--	--	--	--	H,S	112SPRD		1580	1455

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153-065-1688A	D.DEVANY	125	125	--	--	--	--	--	H,S	1125PRD		--	1461
153-065-2288B	TEST MOLE 197	265	--	--	--	1949	--	--	U	--		--	1439
153-065-248AA	TEST MOLE 192	180	--	--	--	1949	--	--	U	--		--	1421
153-065-30ABD	NDSMC 8880	60	--	--	--	1973	--	--	U	--		--	1575
153-065-3088A	F.COMAN	154	154	--	--	--	43	09/ /1950	U	211PIRR	SHLE	--	1485
153-065-308DC	B.ARNOLD	159	159	--	4	1937	12	07/ /1949	H,S	211PIRR	SHLE	--	1485
153-065-30DAA	C.ELSTAD	72	72	--	4	1934	24	07/ /1949	H,S	211PIRR	SHLE	2200	1467
153-065-3188B	L.HOWARD	24	24	--	36	1917	20	09/ /1950	H,S	112PLSC		7800	1452
153-065-3188C	L.HOWARD	80	80	53	4	1972	13	09/ /1974	S	211PIRR	SHLE	2300	1438
154-061-03DDC1	R.KANGAS	90	90	--	4	1960	--	--	H	211PIRR	SHLE	6400	1513
154-061-03DDC2	R.KANGAS	165	165	--	4	1965	--	--	S	211PIRR	SHLE	--	1512
154-061-09DAA	NDSMC 8802	60	--	--	--	1973	--	--	U	--		--	1502
154-061-14DCA	USAF J-0	131	131	124	7	1963	--	--	H	211PIRR	SHLE	8220	1507
154-061-14DDC	USAF 32	130	130	--	4	1962	10	04/ /1962	U	211PIRR	SHLE	--	1502
154-061-1688D	L.LANGTON	120	120	--	6	1971	--	--	H	211PIRR	SHLE	--	1511
154-061-1888B	R.NIXON	114	114	--	--	--	--	--	H	211PIRR	SHLE	--	1518
154-061-22AAA	NDSMC 8803	60	--	--	--	1973	--	--	U	--		--	1505
154-061-23CBC1	E.VOLK	140	140	--	4	1930	--	--	S	211PIRR	SHLE	--	1510
154-061-23CBC2	E.VOLK	120	120	--	6	1962	--	--	H	211PIRR	SHLE	880	1520
154-061-24BCD	P.JOHNSON	120	120	--	6	1950	18	--	H	211PIRR	SHLE	--	1512
154-061-30AAA	NDSMC 8804	60	--	--	--	1973	--	--	U	--		--	1489
154-061-30ABA	G.BURT	75	75	75	4	1960	--	--	H	211PIRR	SHLE	2050	1507
154-061-32DDD	D.TROMSON	90	90	--	--	--	--	--	H	211PIRR	SHLE	1790	1521
154-061-35C88	G.LEITH	120	120	60	6	1955	--	--	H	211PIRR	SHLE	6800	1512
154-062-018DD	G.DIMMLER	150	150	--	--	--	--	--	H	211PIRR	SHLE	4000	1510
154-062-03CDD	H.DIMMLER	136	136	--	6	1966	--	--	H	211PIRR	SHLE	4800	1521
154-062-05BAA	W.BECKER	120	120	105	6	1954	--	--	H	211PIRR	SHLE	3880	1492
154-062-05BAC	H.RUTTEN	130	130	61	4	1964	30	05/ /1964	H	211PIRR	SHLE	--	1492
154-062-05888	ST.BENEDICT CATH	129	129	66	4	1964	20	05/ /1964	H	211PIRR	SHLE	--	1492
154-062-05CCA	USAF 2040	130	130	--	4	1962	8	11/ /1962	U	211PIRR	SHLE	--	1482
154-062-06DDC	B.DEPLAZES	50	50	--	--	--	--	--	H	112PLSC		3120	1486
154-062-06DDD	NDSMC 9091	100	51	--	1	1974	8	09/ /1974	U	1128GFV	GRVL	3500	1484
154-062-07DDD	NDSMC 8843	80	60	--	1	1973	8	09/ /1973	U	1128GFV	SAND	--	1485
154-062-13ADD	NDSMC 8805	60	--	--	--	1973	--	--	U	--		--	1505
154-062-1888D	T.SENGER	90	90	--	6	1920	--	--	H	112PLSC		1600	1492
154-062-19AAA	NDSMC 9092	160	--	--	--	1974	--	--	U	--		--	1487
154-062-21CDD	J.HERDA	120	120	--	6	1934	0	--	H	112PLSC		1550	1514
154-062-24DAC	A.SAUNDERS	40	40	--	--	--	11	--	H	211PIRR	SHLE	2400	1505
154-062-25AAD	USAF 37	130	130	--	4	1962	18	04/ /1962	U	211PIRR	SHLE	--	1498
154-062-25DAD	USAF 2037	132	132	--	4	1962	25	11/ /1962	U	211PIRR	SHLE	--	1506

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154-062-29AAA	NDSMC 8814	60	--	--	-	1973		--	U	--		--	1485
154-062-30BAB	L. WOLFE	80	80	--	4	1957		--	H	--		--	1500
154-062-31DDA	USAF 39-1	130	130	--	4	1962	14	04/ /1962	U	112PLSC		--	1482
154-062-35ABB	NDSMC 8815	120	--	--	-	1973		--	U	--		--	1506
154-063-02CCA	C. RINGSTROM	100	100	--	-	--		--	H	112PLSC		2500	1500
154-063-04CCC	J. FAHRNKOPF	120	120	--	6	1922		--	H,S	211PIRR	SHLE	--	1485
154-063-04DDC	L. JOHNSON	160	160	--	6	1910		--	H	211PIRR	SHLE	3500	1485
154-063-05CCC	TEST HOLE 127	50	--	--	-	1949		--	U	--		--	1487
154-063-05DBA	HALGREN BROS.	115	115	--	4	1910	20	--	H,S	211PIRR	SHLE	--	1518
154-063-06AAA1	TEST HOLE 126	40	--	--	-	1949		--	U	--		--	1471
154-063-06AAA2	NDSMC 9081	40	--	--	-	1974		--	U	--		--	1476
154-063-07ABB	TEST HOLE 128	70	--	--	-	1949		--	U	--		--	1485
154-063-08CDC	PETERSON BRO S.	133	133	--	4	1914		--	H,S	211PIRR	SHLE	2590	1491
154-063-10CCC	NDSMC 9096	30	--	--	-	1974		--	U	--		--	1483
154-063-10DDD	NDSMC 9095	160	--	--	-	1974		--	U	--		--	1475
154-063-12BBB	NDSMC 8842	630	--	--	-	1973		--	U	--		--	1485
154-063-12CCC	NDSMC 9094	580	--	--	-	1974		--	U	--		--	1484
154-063-12DDD	NDSMC 9093	60	--	--	-	1974		--	U	--		--	1482
154-063-17CBA	E. EVENSON	147	147	--	4	1950		--	H	211PIRR	SHLE	2800	1513
154-063-18AAA	NDSMC 8818	100	--	--	-	1973		--	U	--		--	1491
154-063-18DBA	P. THOMPSON	258	258	--	-	1912		--	H,S	211PIRR	SHLE	--	1533
154-063-19DAA	TEST HOLE 588	90	--	--	-	1952		--	U	--		--	1556
154-063-20BBB	A. ANDERSON	130	130	--	4	1922		--	H,S	211PIRR	SHLE	810	1537
154-063-21AAA	NDSMC 8817	100	73	--	1	1973	7	09/ /1973	U	112BGFV	GRVL	1550	1482
154-063-23CCC1	C. STUBBE	--	90	--	6	01/01/1950		--	H	--		1200	1500
154-063-23CCC2	C. STUBBE	80	80	--	6	1932		--	H	--		1500	1500
154-063-240BB	J. ZIEGLER	40	40	--	6	1967		--	H	112PLSC		1400	1496
154-063-27BBB	NDSMC 9097	140	101	--	1	1974	10	09/ /1974	U	112BGFV	GRVL	1400	1483
154-063-28BBB	K. MILLER	40	40	--	36	1936	5	07/ /1948	S	112PLSC		--	1475
154-063-29BCD	M. LARSON	176	176	--	4	1948	27	05/ /1949	H	211PIRR	SHLE	1900	1497
154-063-32BBA	R. HALLE	58	58	--	20	1925	30	07/ /1948	H,S	--		--	1485
154-063-32DBC	T. THELIN	40	40	--	36	1936	19	07/ /1948	H	112PLSC		--	1483
154-063-32DCA	T. THELIN	40	40	--	36	1936	14	07/ /1948	S	112PLSC		--	1478
154-063-35BBB	NDSMC 8816	60	--	--	-	1973		--	U	--		--	1500
154-064-01CDD	TEST HOLE 130	110	--	--	-	1949		--	U	--		--	1461
154-064-01DDA	B. MORAN	31	31	--	-	--	9	09/ /1949	S	112PLSC		--	1467
154-064-01DDD	TEST HOLE 129	120	--	--	-	1949		--	U	--		--	1469
154-064-02CDD	TEST HOLE 132	60	--	--	-	1949		--	U	--		--	1463
154-064-03BAA	TEST HOLE 135	110	--	--	-	1949		--	U	--		--	1465
154-064-03BBA	TEST HOLE 203	113	--	--	-	1949		--	U	--		--	1467

LOCAL NUMBER	OWNER	DEPTH DRILLED (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAMETER (INCHES)	DATE COMPLETED	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	USE OF WATER	PRINCIPAL AQUIFER	LITHOLOGY OF PRINCIPAL AQUIFER	SPECIFIC CONDUCTANCE (µMHOS/CM @ 25°C)	ALTITUDE OF LAND SURFACE (FEET)
154-064-03CAA	J. BRAGG	72	72	--	6	1940	--		H,S	112PLSC		2000	1475
154-064-03CAD	TEST HOLE 156	90	--	--	--	1949	--		U	--		--	1466
154-064-03CDM	TEST HOLE 134	110	--	--	--	1949	--		U	--		--	1479
154-064-03DDD	TEST HOLE 133	70	--	--	--	1949	--		U	--		--	1467
154-064-04CCG	TEST HOLE 2X	32	--	--	--	1949	--		U	--		--	1465
154-064-04CDD	TEST HOLE 1X	15	--	--	--	1949	--		U	--		--	1430
154-064-0588B	NDSWC 8838	100	--	--	--	1973	--		U	--		--	1472
154-064-05CCD	J. NAHINURK	37	37	--	--	--	26	08/ /1948	H,S	112PLSC		1730	1485
154-064-05DBD	W. HOCKING	26	26	--	--	--	14	09/ /1943	S	112PLSC		--	1475
154-064-06BCB	B. STEIES	29	29	--	--	1936	27	07/ /1948	H,S	112PLSC		--	1505
154-064-06DDD	B. BAKER	120	120	--	--	--	30	08/ /1948	H,S	211PIRR	SHLE	--	1480
154-064-07ADD	E. JODDIN	36	36	--	--	--	23	09/ /1943	S	112PLSC		--	1485
154-064-07DCC	J. ZIEGLER	28	28	--	--	--	16	07/ /1949	H	112PLSC		--	1475
154-064-07DDA	NDSWC 8837	100	--	--	--	1973	--		U	--		--	1476
154-064-09DCC	TEST HOLE 176	155	--	--	--	1949	--		U	--		--	1504
154-064-1088B	TEST HOLE 158	105	--	--	--	1949	--		U	--		--	1470
154-064-10CAA	TEST HOLE 157	44	--	--	--	1949	--		U	--		--	1471
154-064-11CDD	NDSWC 9077	80	--	--	--	1974	--		U	--		--	1464
154-064-1288B	TEST HOLE 131	60	--	--	--	1949	--		U	--		--	1463
154-064-12CCC	NDSWC 8819	120	86	--	1	1973	15	09/ /1973	U	112BGFV	SAND	2025	1475
154-064-12CDC	I. CLAPP	39	39	--	--	--	--		S	112PLSC		--	1490
154-064-12DDD	NDSWC 9080	100	--	--	--	1974	31	09/ /1943	S	112PLSC		--	1479
154-064-14ACC	W. DEITZ	26	26	--	--	--	17	08/ /1943	H	112PLSC		975	1480
154-064-14CDD	A. SENGER	18	18	--	--	--	16	08/ /1943	S	112PLSC		--	1470
154-064-14DCC	NDSWC 9078	80	--	--	--	1974	--		U	--		--	1463
154-064-15A8B	TEST HOLE 3X	27	--	--	--	1949	--		U	--		--	1467
154-064-15CAA1	W. HUFFMAN	26	26	--	--	--	11	09/ /1943	H,S	112PLSC		--	1468
154-064-15CAA2	J. HAGER	129	129	--	--	1972	14	09/ /1974	H	211PIRR	SHLE	5000	1470
154-064-16AAA	TEST HOLE 175	95	--	--	--	1949	--		U	--		--	1466
154-064-1788C	H. VANLIEN	29	29	--	--	--	16	09/ /1943	H,S	112PLSC		2050	1475
154-064-18CCC	NDSWC 8835	80	--	--	--	1973	--		U	--		--	1472
154-064-18DCC	W. FRANK	24	24	--	--	--	21	08/ /1948	U	112PLSC		--	1475
154-064-20B8C	KEHRBERG	204	204	--	5	1923	--		S	211PIRR	SHLE	--	1480
154-064-20C8C	NDSWC 8836	80	--	--	--	1973	--		U	--		--	1472
154-064-21ADA	J. MERTENS	100	100	--	--	--	22	07/ /1948	H	112BGFV		--	1505
154-064-22ABB	GREAT NORTH TW9	112	112	--	12	1939	9	08/ /1943	U	--		--	1465
154-064-22DCC	GREAT NORTH 10	70	70	--	12	1939	16	08/ /1943	U	--		--	1475
154-064-23ACA	E. NODTNALE	27	27	--	--	--	18	08/ /1943	H,S	112PLSC		--	1470
154-064-23DBC	M. BLOOMQUIST	135	135	--	--	--	--		H,S	211PIRR	SHLE	--	1470
154-064-24DBA	A. SLETTELAND	155	155	--	--	--	--		H,S	211PIRR	SHLE	4800	1492



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154-064-2500S	NDSWC 9079	60	--	--	--	1974		--	U	--		--	1464
154-064-250BA	RYAN ESTATE	30	30	--	--	--	23	09/ /1943	S	112PLSC		--	1480
154-064-260CD	A.SLETTELAND	106	106	--	4	1950		--	H,S	211PIRR	SHLE	1710	1465
154-064-260DD	NDSWC 8861	120	--	--	--	1973		--	U	--		--	1451
154-064-27ABC	GREAT NORTH 11	80	80	--	12	1939		--	U	--		--	1470
154-064-27CDD	DEAF SCHMID	125	125	--	--	--		--	H	211PIRR	SHLE	--	1465
154-064-270BD	W.SPRAQUE	31	31	--	36	1926	15	08/ /1943	H,S	112PLSC		--	1470
154-064-270CB	GREAT NORTH 12	48	48	--	12	1939	18	--	U	--		--	1465
154-064-29ABC	MOFFET	21	21	--	--	--	12	08/ /1943	U	112PLSC		--	1463
154-064-29BAC	H.KENNER	31	31	--	4.8	1905	16	09/ /1943	S	112PLSC		--	1467
154-064-31AAA	M.GRAHAM	97	97	--	6	1920		--	H	211PIRR	SHLE	--	1467
154-064-310DD	NDSWC 8862	100	--	--	--	1973		--	U	--		--	1440
154-064-330AA	DAVIS BROTHERS	12	12	--	30	1939	6	08/ /1943	S	112PLSC		--	1445
154-064-330AA	DAVIS BROTHERS	96	96	--	4	1942		--	H	112BGPV		--	1435
154-064-34ACD	HIGH SCHOOL	96	96	--	6	1948	32	07/ /1949	H	211PIRR	SHLE	--	1468
154-064-34AD8	7UP BOTTLING CO	155	155	--	6	1946	20	05/ /1949	N	211PIRR	SHLE	--	1458
154-064-348AA	LINCOLN SCHOOL	25	25	--	--	--	14	08/ /1949	H	112PLSC		--	1450
154-064-348AD	FARMERS UNION	142	142	--	4	1938	20	07/ /1949	U	211PIRR	SHLE	--	1457
154-064-34CDA	M.EISENZIMMER	80	80	--	4	1913	65	07/ /1949	H	211PIRR	SHLE	--	1442
154-064-34DAA	R.BARRICKMAN	96	96	--	4	1927	22	07/ /1949	H	211PIRR	SHLE	--	1465
154-064-34DAB	CITY DEVILS LK.	125	125	--	--	--		--	P	211PIRR	SHLE	--	1467
154-064-34DAC	DEVILS LAKE 1	1530	5235	--	--	--		--	P	217DKOT	SNDS	--	1472
154-064-34DAD	K.OLSON	110	110	--	4	1948	20	07/ /1949	H	211PIRR	SHLE	--	1475
154-064-34DCA	COCA-COLA BOTLG	115	115	--	6	1936	44	05/ /1949	N	211PIRR	SHLE	--	1467
154-064-34DCB1	DEVILS LAKE 2	1515	1514	--	8	1930		F	P	217DKOT	SNDS	--	1462
154-064-34DCB2	DEVILS LAKE 3	1520	1496	--	12	1950		F	P	217DKOT	SNDS	--	1462
154-064-34DCC	DEVILS LAKE 4	1512	1500	--	12	1951		F	P	217DKOT	SNDS	--	1442
154-064-34DDD1	FAIRMOUNT FOODS	118	118	--	6	1936	55	11/ /1948	N	211PIRR	SHLE	--	1462
154-064-34DDD2	FAIRMOUNT FOODS	117	117	--	6	1930	50	--	N	211PIRR	SHLE	--	1462
154-064-35CCC	HOLBECK WELL 2	112	112	--	--	1938	45	05/ /1949	H	211PIRR	SHLE	--	1465
154-064-35CDB	F.MOFFET	78	78	--	4	1938	10	07/ /1949	H	211PIRR	SHLE	--	1470
154-065-020DD	J.MOKAY	32	32	--	--	--	22	09/ /1943	U	112PLSC		--	1472
154-065-03ACA	E.MORKEN	137	137	--	--	--		--	H,S	211PIRR	SHLE	2700	1469
154-065-030DD	NDSWC 8834	120	--	--	--	1973		--	U	--		--	1458
154-065-050DC	A.SKRAMSTAD	125	125	--	--	--		--	H,S	112PLSC		1350	1466
154-065-06ACD1	P.STOESER	135	135	--	4	1935		--	H,S	112SPRD		950	1477
154-065-06ACD2	P.STOESER	166	166	--	4	1913	31	07/ /1949	U	112SPRD		--	1475
154-065-07CDD	NDSWC 8874	160	133	--	1	1973	33	09/ /1973	U	112SPRD	SAND	1250	1474
154-065-07DAA	R.JOHNSTON	67	67	--	4	1925	47	07/ /1949	H,S	112TILL		--	1476
154-065-09CDC	A.MACDIARMID	110	110	--	--	--	52	07/ /1949	H,S	112SPRD		2000	1477

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154-065-10888	NDSWC 9021	100	--	--	-	1974	--	--	U	--		--	1489
154-065-10CAC	I. KITTERMAN	154	154	--	-	1922	25	07/ /1949	H+S	211PIRR	SHLE	2000	1466
154-065-10CCC	NDSWC 9023	80	--	--	-	1974	--	--	U	--		--	1467
154-065-10DDA	O. MOEN	--	--	--	-	--	13	09/ /1943	U	--		--	1470
154-065-128DC1	R. FRITH	160	160	--	4	1949	--	--	H+S	211PIRR	SHLE	6100	1480
154-065-128DC2	R. FRITH	20	20	--	-	--	--	--	H	112PLSC		2100	1480
154-065-12CCC	NDSWC 9020	100	--	--	-	1974	--	--	U	--		--	1468
154-065-1388A	D. PICKET	140	140	--	4	1925	23	08/ /1948	S	211PIRR	SHLE	--	1475
154-065-13BCC	TEST HOLE 4X	57	--	--	-	1949	--	--	U	--		--	1465
154-065-14ADD	M. JAHNKE	47	47	--	24	1937	16	09/ /1943	H+S	112PLSC		--	1466
154-065-14BAD	KONZAK BROTHERS	82	82	--	4	1944	10	09/ /1949	U	112PLSC		--	1450
154-065-14CCC	NDSWC 8871	120	--	--	-	1973	--	--	U	--		--	1435
154-065-14DD8	G. JAHNKE	45	45	--	24	1940	30	08/ /1948	H+S	112PLSC		--	1460
154-065-14DDC	W. DION	45	45	--	-	--	18	08/ /1948	H+S	112PLSC		2500	1465
154-065-15AAA	A. HELLAND	96	96	--	-	--	--	--	H	211PIRR	SHLE	3000	1460
154-065-15CCC	NDSWC 8872	445	303	--	1	1973	39	09/ /1973	U	112BGFV	GRVL	1510	1475
154-065-15DDC	M. KONZAK	30	30	--	24	1929	18	09/ /1943	U	112PLSC		--	1455
154-065-16ADA	W. MOEN	56	56	--	-	--	46	09/ /1943	U	112PLSC		--	1482
154-065-16DCD	A. BRYN	68	68	--	4	1926	36	07/ /1949	H+S	112PLSC		1300	1480
154-065-17AAA	NDSWC 9024	160	136	133	1	1974	24	09/ /1974	U	112SPRD		1900	1472
154-065-17DDA	NDSWC 9025	180	--	--	-	1974	--	--	U	--		--	1478
154-065-17DDD	A. BRYN	150	150	--	-	1931	39	11/ /1972	U	112SPRD		--	1480
154-065-18AAA	J. HATTER	60	60	--	4	1914	25	07/ /1949	H+S	112PLSC		--	1460
154-065-1908C	A. JOHNSTON	99	99	--	4	1938	39	07/ /1949	H+S	112SPRD		1100	1475
154-065-20DD01	BRYN ESTATE	144	144	--	-	1926	--	--	H+S	112SPRD		1800	1480
154-065-20DD02	G. BRYN	127	127	--	-	1973	56	08/ /1974	S	112SPRD		1580	1482
154-065-21CCC	NDSWC 8873	160	133	--	1	1973	45	09/ /1973	U	112SPRD	SAND	1620	1473
154-065-22ABB	W. DION	80	80	--	-	--	15	09/ /1943	H+S	112SPRD		5000	1455
154-065-22DDC1	D. KENNER	172	172	--	4	1945	--	--	S	112SPRD		1650	1460
154-065-22DDC2	D. KENNER	107	107	--	4	1949	--	--	H	112SPRD		1480	1460
154-065-23ADA1	A. HUTH	39	39	--	24	1940	17	09/ /1943	H+S	112PLSC		--	1466
154-065-23ADA2	J. EVANS	72	72	--	-	1973	20	--	H	211PIRR	SHLE	3250	1465
154-065-23BAA	TEST HOLE 6X	47	--	--	-	1948	--	--	U	--		--	1475
154-065-23DAA	TEST HOLE 7X	129	--	--	-	1948	--	--	U	--		--	1465
154-065-24888	TEST HOLE 5X	45	--	--	-	1948	--	--	U	--		--	1465
154-065-25ACB	I. STATER	40	40	--	-	--	27	09/ /1943	S	112PLSC		--	1475
154-065-25888	NDSWC 9019	100	--	--	-	1974	--	--	U	--		--	1467
154-065-25BDC	I. WEEED	38	38	--	24	1932	20	09/ /1943	S	112PLSC		--	1480
154-065-26ADD	H. WEEED	120	120	--	4	1935	--	--	H	211PIRR	SHLE	--	1475
154-065-28ADD1	OIUM ESTATE	101	101	--	4	1925	43	--	S	112SPRD		1650	1465

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154-065-28ADD2	O.OIUM	150	150	--	4	1959	40	--	H	112SPRD		2000	1466
154-065-28C88	J.PETERSON	45	45	--	24	1900	32	07/ /1949	U	112PLSC		--	1465
154-065-28DAB	NDSWC 8975	402	263	257	1	1974	39	09/ /1974	U	112SPRD	SAND	2100	1461
154-065-28DCD	NDSWC 8974	182	120	117	1	1974	18	09/ /1974	U	112SPRD	SAND	1800	1447
154-065-28DDA	NDSWC 8976	342	--	--	--	1974	--	--	U	--		--	1425
154-065-29DAA1	J.PETERSON	160	160	--	4	1954	--	--	U	112SPRD		--	1466
154-065-29DAA2	J.PEDERSON	60	60	--	4	1960	--	--	H <sub>2</sub> S	112PLSC		1280	1466
154-065-30ABA	J.PETERSON	140	140	--	4	1921	54	07/ /1949	H <sub>2</sub> S	112SPRD		800	1475
154-065-30CBA	A.BRYN	26	26	--	24	1924	17	09/ /1943	H <sub>2</sub> S	112PLSC		--	1457
154-065-30DDO1	W.ADAHL	36	36	--	24	1928	13	07/ /1949	H <sub>2</sub> S	112PLSC		--	1457
154-065-30DDO2	W.ADAHL	76	76	--	6	1970	24	--	H <sub>2</sub> S	112PLSC		1120	1459
154-065-32ACD	A.MOEN	147	147	--	4	1926	40	09/ /1943	H <sub>2</sub> S	112SPRD		1300	1458
154-065-32BAB	J.AASMUNDSTAD	34	34	--	--	1926	18	09/ /1943	H <sub>2</sub> S	112PLSC		--	1470
154-065-32CCC	NDSWC 8879	180	143	--	1	1973	30	09/ /1973	U	112SPRD	SAND	--	1455
154-065-33AAB	TEST HOLE 187	110	--	--	--	1949	--	--	U	--		--	1439
154-065-33AAD	TEST HOLE 186	215	--	--	--	1949	--	--	U	--		--	1417
154-065-33BAB	OIUM AND BRYN	140	140	--	4	1935	--	--	H <sub>2</sub> S	112SPRD		--	1455
154-065-34BCD	TEST HOLE 185	350	--	--	--	1949	--	--	U	--		--	1450
154-065-34CCD	TEST HOLE 184	180	--	--	--	1949	--	--	U	--		--	1452
154-065-35AAA	NDSWC 8863	200	143	--	1	1973	11	09/ /1973	U	112SPRD	SAND	--	1476
154-065-35ABC	A.KENNER	136	136	--	--	--	--	--	H <sub>2</sub> S	112SPRD		1580	1486
154-065-35BBB	NDSWC 9018	160	127	124	1	1974	46	09/ /1974	U	112SPRD	SAND	2000	1472
154-065-35CAB	A.KENNER	136	136	--	4	1967	--	--	H <sub>2</sub> S	112SPRD		--	1475
154-065-35CCC	TEST HOLE 183	155	--	--	--	1949	--	--	U	--		--	1472
154-065-36CDD	E.VANDERLIN	--	--	--	16	1910	16	09/ /1943	H <sub>2</sub> S	--		--	1475
154-065-36DDO	TEST HOLE 181	125	--	--	--	1949	--	--	U	--		--	1470
154-066-01BBB	B.KAEDING	40	40	--	36	1900	25	06/ /1950	U	112PLSC		1600	1455
154-066-01CCC	NDSWC 8875	240	163	--	1	1973	15	09/ /1973	U	112SPRD	SAND	1290	1456
154-066-03AAB1	L.GESSNER	100	100	--	--	--	--	--	S	112SPRD		1380	1465
154-066-03AAB2	L.GESSNER	10	10	--	22	1940	3	06/ /1950	H	112PLSC		--	1460
154-066-03DAC	R.SCHIFF	26	26	--	32	1920	12	06/ /1950	S	112PLSC		--	1462
154-066-05ADB	A.STOE	29	29	--	36	1931	13	06/ /1950	U	112PLSC		--	1455
154-066-05DDD	NDSWC 8881	100	--	--	--	1973	--	--	U	--		--	1444
154-066-06CCD	J.BLEGEN	100	100	--	--	--	20	06/ /1950	H <sub>2</sub> S	211PIRR	SHLE	1400	1470
154-066-07ADB	O.TOLLEFSON	43	43	--	--	--	16	06/ /1950	H <sub>2</sub> S	112PLSC		--	1455
154-066-07DAC	D.TOLLEFSON	40	40	--	36	1927	16	06/ /1950	H <sub>2</sub> S	112PLSC		--	1455
154-066-08BBA	A.BYE	45	45	--	36	1935	8	06/ /1950	H	112PLSC		--	1462
154-066-08BCD	D.HALYORSON	38	38	--	18	1967	--	--	H	112PLSC		2080	1455
154-066-09AAA	E.SOWATZKI	107	107	--	6	1945	20	06/ /1950	H <sub>2</sub> S	112SPRD		--	1455
154-066-09ABB	H.STOE	32	32	--	42	1900	24	06/ /1950	U	112PLSC		--	1455

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154-066-09B8	D.TOLLEFSON	30	30	--	-	--	--	--	H <sub>2</sub> S	112PLSC		--	1455
154-066-09DDD	NDSMC 9027	120	81	--	1	1974	1	09/ /1974	U	112SPRD	SAND	2000	1445
154-066-10B8D	R.STOE	180	180	--	-	--	--	--	H	211PIRR	SHLE	1600	1455
154-066-11A8A	MOTSCHENBACKER	150	150	--	6	1930	10	06/ /1950	H <sub>2</sub> S	112SPRD		--	1446
154-066-1188D	R.STEINKE	34	34	--	-	--	16	09/ /1943	U	112PLSC		--	1490
154-066-13AAD	R.RUGER	146	146	--	-	--	--	--	H <sub>2</sub> S	112SPRD		1280	1455
154-066-14ADC	L.MILLER	112	112	--	-	1969	--	--	H <sub>2</sub> S	112SPRD		1190	1465
154-066-14CCC	S.YNDES DAL	17	17	--	-	--	4	06/ /1950	H	112PLSC		--	1445
154-066-14CCD	L.GUNNERUD	23	23	--	-	--	13	06/ /1950	S	112PLSC		--	1450
154-066-15BBB	O.BYE	22	22	--	-	--	7	06/ /1950	U	112PLSC		--	1450
154-066-15CCC	L.TOLLEFSON	32	32	--	48	1916	23	09/ /1943	S	112PLSC		--	1465
154-066-15DDD	NDSMC 8876	140	80	--	1	1973	2	09/ /1973	U	112SPRD	SAND	1300	1440
154-066-17ABA	R.RONNING	21	21	--	-	--	3	06/ /1950	H	112PLSC		--	1447
154-066-18AAA1	T.TOLLEFSON	14	14	--	-	--	3	06/ /1950	H	112PLSC		--	1470
154-066-18AAA2	T.TOLLEFSON	100	100	--	18	1935	9	06/ /1950	S	112PLSC		--	1470
154-066-18BBB	C.NESTEGARD	129	129	--	4	1927	20	06/ /1950	H <sub>2</sub> S	211PIRR	SHLE	--	1467
154-066-18BBD	L.NESTEGARD	48	48	--	18	1900	21	06/ /1950	S	112PLSC		--	1462
154-066-21ADD	F.JOHNSON SR.	7	7	--	-	--	5	09/ /1950	H	112PLSC		--	1435
154-066-23CCC	NDSMC 9026	120	--	--	-	--	--	--	U	112SPRD		--	1450
154-066-23DAB	G.VOLDEN	35	35	--	-	1974	25	09/ /1943	H <sub>2</sub> S	112PLSC		--	1465
154-066-23DDD	NDSMC 8877	160	123	--	1	1973	28	09/ /1973	U	112SPRD	SAND	1310	1463
154-066-24ABA	C.VOLDEN	38	38	--	48	1918	14	07/ /1949	U	112PLSC		--	1454
154-066-25ADB	C.HATTER	116	116	--	-	1973	39	08/ /1974	S	112SPRD	SAND	1600	1454
154-066-25BAB	O.BYE	40	40	--	36	1939	19	07/ /1949	S	112PLSC		--	1470
154-066-25DDA	NDSMC 9044	180	141	--	1	1974	21	09/ /1974	U	112SPRD	SAND	1680	1455
154-066-26BBA	H.HALVORSON	24	24	--	-	--	15	09/ /1943	S	112PLSC		--	1465
154-066-26DDD1	E.FOSS	46	46	--	-	--	17	07/ /1949	S	112PLSC		--	1455
154-066-26DDD2	E.FOSS	52	52	--	-	--	20	11/ /1949	S	112PLSC		--	1455
154-066-35BCA	TEST HOLE 356	115	--	--	-	1950	--	--	U	--		--	1442
154-066-36AAA	TEST HOLE 357	146	--	--	-	1950	--	--	U	--		--	1465
154-066-36AAC	J.AASMUNDSTAD	35	35	--	-	--	13	07/ /1949	H <sub>2</sub> S	112PLSC		--	1455
154-066-36DCD	NDSMC 8878	140	100	--	1	1973	28	09/ /1973	U	112SPRD	SAND	--	1454
155-060-0488D	USAF 2027	130	130	--	4	1962	10	11/ /1962	U	211PIRR	SHLE	--	1515
155-060-05ADC	M.SMITH	40	40	--	-	--	--	--	S	211PIRR	SHLE	1350	1527
155-060-08AAA	NDSMC 5993	40	--	--	-	1971	--	--	U	--		--	1526
155-060-08CC1	T.THOMPSON	92	92	--	6	1912	--	--	S	211PIRR	SHLE	3800	1510
155-060-08CC2	T.THOMPSON	80	80	--	6	1958	--	--	S	211PIRR	SHLE	3300	1510
155-060-10BCC1	A.HONKOLA	180	180	--	-	--	--	--	S	211PIRR	SHLE	--	1527
155-060-10BCC2	A.HONKOLA	150	150	40	4	1962	--	--	H <sub>2</sub> S	211PIRR	SHLE	5800	1527
155-060-13CBA	G.BINA	24	24	--	-	--	--	--	H <sub>2</sub> S	211PIRR	SHLE	6400	1527

LOCAL NUMBER	OWNER	DEPTH DRILLED (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAMETER (INCHES)	DATE COMPLETED	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	USE OF WATER	PRINCIPAL AQUIFER	LITHOLOGY OF PRINCIPAL AQUIFER	SPECIFIC CONDUCTANCE ( $\mu$ MHOS/CM @ 25°C)	ALTITUDE OF LAND SURFACE (FEET)
155-060-14000	NDSWC 8037	40	--	--	--	1971	--	--	U	--	--	--	1510
155-060-17000	NDSWC 8036	20	--	--	--	1971	--	--	U	--	--	--	1505
155-060-18000	R. SMITH	90	90	--	--	--	--	--	H	211PIRR	SHLE	2800	1512
155-060-238001	R. KALLIOKOSKI	115	115	--	4	1958	--	--	S	211PIRR	SHLE	3000	1527
155-060-238002	R. KALLIOKOSKI	115	115	--	4	1958	--	--	H	211PIRR	SHLE	4000	1527
155-060-24A081	G. SVERCL	160	160	--	6	1936	--	--	S	211PIRR	SHLE	--	1517
155-060-24A082	G. SVERCL	24	24	--	--	--	--	--	H	211PIRR	SHLE	2150	1517
155-060-24A083	G. SVERCL	160	160	--	6	1936	--	--	S	211PIRR	SHLE	--	1517
155-060-24DC8	USAF 2028	130	130	--	4	1962	8	11/ /1962	U	211PIRR	SHLE	--	1520
155-060-26000	NDSWC 8800	40	--	--	--	1973	--	--	U	--	--	--	1520
155-060-27A8A	USAF 28	131	131	--	4	1962	20	04/ /1962	U	211PIRR	SHLE	--	1524
155-060-27C8C	GREAT NORTHERN	131	131	--	6	1919	11	01/ /1919	H	211PIRR	SHLE	2180	1513
155-060-29CDD1	J. OLSON	85	85	--	4	1961	--	--	H	211PIRR	SHLE	1400	1532
155-060-29CDD2	J. OLSON	85	85	--	6	1910	--	--	H, S	211PIRR	SHLE	2500	1532
155-060-29000	NDSWC 8801	60	--	--	--	1973	--	--	U	--	--	--	1520
155-060-35DAA	J. JOHNSTON	175	175	--	--	--	--	--	H	211PIRR	SHLE	2110	1511
155-061-01000	NDSWC 8034	60	--	--	--	1971	--	--	U	--	--	--	1501
155-061-02000	T. HALVORSON	90	90	--	4	1957	--	--	H	211PIRR	SHLE	4600	1522
155-061-06ACD1	F. SEEGER	94	94	--	6	1952	--	--	H	211PIRR	SHLE	--	1513
155-061-06ACD2	F. SEEGER	180	180	--	6	1922	--	--	S	211PIRR	SHLE	--	1513
155-061-06000	NDSWC 9090	80	--	--	--	1974	--	--	U	--	--	--	1496
155-061-09B8B	W. NASH	50	50	--	--	--	--	--	H	211PIRR	SHLE	2350	1527
155-061-10000	NDSWC 8035	40	--	--	--	1971	--	--	U	--	--	--	1552
155-061-17000	W. MURSMAN	45	45	--	36	1920	--	--	H, S	--	--	6200	1522
155-061-23000	NDSWC 8799	60	--	--	--	1973	--	--	U	--	--	--	1518
155-061-230CA	USAF 3033	130	130	--	4	1962	15	11/ /1962	U	211PIRR	SHLE	--	1526
155-061-230CC	USAF 33	130	130	--	4	1962	19	04/ /1962	U	211PIRR	SHLE	--	1526
155-061-240CC1	M. SKJERSETH	120	120	--	--	--	--	--	S	211PIRR	SHLE	2900	1557
155-061-240CC2	M. SKJERSETH	90	90	--	--	--	--	--	H	211PIRR	SHLE	2090	1557
155-061-27000	C. HEJLIK	135	135	--	--	--	--	--	H	211PIRR	SHLE	4890	1517
155-061-338AA1	M. EIDSMNESS	70	70	--	6	1956	--	--	H	211PIRR	SHLE	1050	1513
155-061-338AA2	M. EIDSMNESS	45	45	--	--	--	--	--	H	--	--	2310	1513
155-061-338BB	NDSWC 8798	60	--	--	--	1973	--	--	U	--	--	--	1515
155-061-348AA	R. HEJLIK	150	150	--	6	1919	--	--	H	211PIRR	SHLE	4190	1520
155-062-04000	NDSWC 9089	80	--	--	--	1974	--	--	U	--	--	--	1490
155-062-05AAB	USAF 44-1	130	130	--	4	1962	18	04/ /1962	U	211PIRR	SHLE	--	1487
155-062-06AAA	NDSWC 9088	220	--	--	--	1974	--	--	U	--	--	--	1475
155-062-06000	L. VOLK	120	120	--	6	1965	--	--	H, S	112PLSC	--	2850	1476
155-062-06001	L. VOLK	60	60	--	6	1932	--	--	S	112PLSC	--	--	1476
155-062-06002	L. VOLK	60	60	--	6	1932	--	--	S	112PLSC	--	--	1476
155-062-06000	NDSWC 8792	280	183	--	1	1973	5	09/ /1973	U	112BGFV	GRVL	4050	1475

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155-062-07C00	I. BAILEY	90	90	--	6	1967	--	--	H	211PIRR	SHLE	2600	1483
155-062-09DDD	J. KRUMWIEDE	120	120	--	--	--	--	--	H	211PIRR	SHLE	1610	1503
155-062-11CAA	B. SCHIELE	100	100	100	6	1952	--	--	H	211PIRR	SHLE	3900	1507
155-062-12BBD	A. SCHNEIDER	96	96	--	6	1962	--	--	H	211PIRR	SHLE	6800	1507
155-062-15CCC	NDSWC 8796	60	--	--	--	1973	--	--	U	--	--	--	1495
155-062-18AAA1	NDSWC 9087	520	--	--	--	1974	--	--	U	--	--	--	1475
155-062-18AAA2	NDSWC 9087-A	160	141	138	1	1974	4	09/ /1974	U	1128GFV	GRVL	1830	1475
155-062-19BCC	G. ROMBS	165	165	--	6	1943	--	--	H	112PLSC	SHLE	2450	1482
155-062-23ACA1	F. PERKUHN	96	96	--	6	1965	--	--	H	211PIRR	SHLE	3600	1517
155-062-23ACA2	F. PERKUHN	200	200	--	--	--	--	--	S	211PIRR	SHLE	5200	1517
155-062-25DDB	USAF 2036	130	130	--	4	1962	24	11/ /1962	U	211PIRR	SHLE	--	1532
155-062-27CCD	R. BACKMEIER	70	70	--	4	1961	--	--	H	211PIRR	SHLE	2690	1507
155-062-27DAA	NDSWC 8797	60	--	--	--	1973	--	--	U	--	--	--	1510
155-062-29DDA	P. LEIPHON	150	150	87	4	1963	30	11/ /1963	H	211PIRR	SHLE	--	1492
155-062-30AAA	NDSWC 9086	100	--	--	--	1974	--	--	U	--	--	--	1477
155-062-30CDC	P. LEIPHON	159	159	139	4	1944	--	--	H	112PLSC	SHLE	4000	1481
155-063-04ACC1	LANGE BROS.	180	180	--	--	--	80	07/ /1949	H,S	211PIRR	SHLE	--	1487
155-063-04ACC2	LANGE BROS.	20	20	--	--	--	6	07/ /1949	S	112PLSC	SHLE	--	1487
155-063-04ACC3	LANGE BROS.	115	115	--	4	1948	30	07/ /1949	H	211PIRR	SHLE	--	1487
155-063-06CCD	R. BREAKKEY	147	147	--	4	1945	--	--	H	211PIRR	SHLE	--	1481
155-063-06DDD	NDSWC 146	110	--	--	5	1949	--	--	U	--	--	--	1476
155-063-07DBB	J. BURGESS	92	92	--	4	1946	--	--	H	211PIRR	SHLE	1850	1482
155-063-07DDD	NDSWC 147	50	--	--	5	1949	--	--	U	--	--	--	1468
155-063-09BDC	E. BAKER	110	110	--	4	1941	25	07/ /1949	S	211PIRR	SHLE	--	1473
155-063-10CCD1	E. BAKER	90	90	90	4	1967	--	--	H	211PIRR	SHLE	1950	1477
155-063-10CCD2	E. BAKER	100	100	100	4	1947	--	--	H	211PIRR	SHLE	2750	1477
155-063-11DBB	C. HEGGE	110	110	75	6	1952	--	--	H	211PIRR	SHLE	5000	1480
155-063-13BBB	NDSWC 8793	100	--	--	--	01/01/1973	--	--	U	--	--	--	1465
155-063-13BBB	NDSWC 8794	60	--	--	--	1973	--	--	U	--	--	--	1478
155-063-17BBB	NDSWC 9083	120	--	--	--	1974	--	--	U	--	--	--	1482
155-063-18BAD	P. SYRUP	120	120	--	4	1937	37	05/ /1949	H,S	211PIRR	SHLE	--	1482
155-063-18DDD	USGS 121	110	--	--	--	1949	--	--	U	--	--	--	1465
155-063-19BAC	H. HANSON	119	119	--	4	1927	20	07/ /1948	H	211PIRR	SHLE	5000	1473
155-063-19CDD	NDSWC 123	60	--	--	5	1949	--	--	U	--	--	--	1464
155-063-1900C	NDSWC 9082	60	--	--	--	1974	--	--	U	--	--	--	1465
155-063-19DDD	USGS 122	70	--	--	--	1949	--	--	U	--	--	--	1465
155-063-20A8B	V. KEDGH	96	96	--	4	1943	--	--	H	211PIRR	SHLE	--	1467
155-063-21DCC	USGS 120	50	--	--	--	1949	--	--	U	--	--	--	1463
155-063-22CCC	NDSWC 9084	120	71	--	1	1974	14	09/ /1974	U	1128GFV	GRVL	--	1474
155-063-22DBC1	H. NELSON	70	70	60	6	1950	--	--	H	112PLSC	SHLE	1080	1493

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155-063-220BC2	H.NELSON	96	96	--	6	1915		--	S	--		--	1493
155-063-230DA	NDSMC 9085	120	--	--	--	1974		--	U	--		--	1475
155-063-25AAA	NDSMC 8795	385	223	--	1	1973	11	09/ /1973	U	112BGFV	GRVL	3650	1475
155-063-25ABC	H.GULSETH	400	400	--	4	1947		--	H	211PIRR	SHLE	2100	1487
155-063-278BB	TEST HOLE 119	135	--	--	--	1949		--	U	--		--	1473
155-063-29ABA	USGS 124	80	--	--	--	1949		--	U	--		--	1462
155-063-29ABC	HALGREN BRDS	140	140	--	--	--	14	07/ /1948	H,S	211PIRR	SHLE	--	1476
155-063-29CCC	USGS 125	90	--	--	--	1949		--	U	--		--	1462
155-063-35CCD	P.ELVRUM	60	60	--	6	1927	20	--	H	--		--	1477
155-064-018BB	NDSMC 9055	60	--	--	--	1974		--	U	--		--	1467
155-064-03AAA	NDSMC 8820	120	80	--	1	1973	6	09/ /1973	U	112BGFV	GRVL	2290	1462
155-064-03CCC	NDSMC 9053	140	--	--	--	1974		--	U	--		--	1459
155-064-04AAA1	I.MERTENBERGER	132	132	--	4	1908	17	09/ /1950	H	211PIRR	SHLE	--	1465
155-064-04AAA2	E.LARSON	127	127	--	--	1972		--	--	211PIRR	SHLE	5900	1463
155-064-058BB	NDSMC 9043	80	--	--	--	1974		--	U	--		--	1462
155-064-07DDD	NDSMC 8841	120	--	--	--	1973		--	U	--		--	1474
155-064-09ABC1	O.LEET	130	130	--	5	1908	20	09/ /1943	H,S	211PIRR	SHLE	--	1457
155-064-09ABC2	O.LEET	128	128	--	--	--		--	H	211PIRR	SHLE	7000	1457
155-064-09DAD	TEST WELL 141	130	--	--	--	1949		--	U	--		--	1458
155-064-09DDD1	W.MILLER	142	142	142	4	1967		--	H	211PIRR	SHLE	3050	1467
155-064-09DDD2	W.MILLER	145	145	--	4	1944		--	H	211PIRR	SHLE	2800	1447
155-064-10ADA	TEST WELL 142	104	--	--	--	1949		--	U	--		--	1463
155-064-10DAB	E.WEBSTER	--	--	--	--	--	15	05/ /1949	U	--		--	1463
155-064-10DDD	TEST WELL 148	108	--	--	--	1949		--	U	--		--	1463
155-064-11AAD2	L.JONES	80	80	--	--	--		--	H	211PIRR	SHLE	2200	1477
155-064-11AAD1	TEST WELL 144	58	--	--	--	1949		--	U	--		--	1462
155-064-11BAD	L.JONES	35	35	--	--	--	15	07/ /1949	H,S	211PIRR	SHLE	1720	1477
155-064-11BDA	TEST WELL 143	40	--	--	--	1949		--	U	--		--	1465
155-064-12AAA	J.BURGESS	105	105	--	4	1944	16	09/ /1944	H,S	211PIRR	SHLE	--	1468
155-064-12ADA	TEST WELL 145	107	--	--	--	1949		--	U	--		--	1469
155-064-15CDD1	N.MAGNUSON	120	90	70	6	1943	18	05/ /1949	H	211PIRR	SHLE	2580	1482
155-064-15CDD2	N.MAGNUSON	120	120	110	4	1943		--	H	211PIRR	SHLE	--	1482
155-064-168BA	TEST WELL 150	70	--	--	--	1949		--	U	--		--	1472
155-064-168DB	H.HAIG	200	200	--	--	--		--	H,S	211PIRR	SHLE	4300	1476
155-064-19ADA	H.OTIS	32	32	--	18	1907	26	07/ /1948	H,S	112PLSC		2100	1475
155-064-198BC	R.RADER	45	45	--	6	1925		--	H,S	112BGFV		2200	1472
155-064-21AAA	TEST WELL 140	40	--	--	--	1949		--	U	--		--	1474
155-064-22CCC	TEST WELL 137	30	--	--	--	1949		--	U	--		--	1481
155-064-22CDD	TEST WELL 139	40	--	--	--	1949		--	U	--		--	1480
155-064-22DDC	TEST WELL 138	120	--	--	--	1949		--	U	--		--	1471

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155-064-23BAB	C.WEBSTER	109	109	--	4	1935	8	05/ /1949	U	211PIRR	SHLE	6000	1465
155-064-23DAA	TEST WELL 149	50	--	--	--	1949	--	--	U	--	--	--	1461
155-064-27AAB	NDSMC 9075	140	--	--	--	1974	--	--	U	--	--	--	1468
155-064-27CCC	TEST WELL 136	30	--	--	--	1949	--	--	U	--	--	--	1498
155-064-28ABD1	J.EHLERS	50	50	--	--	--	11	07/ /1948	S	112PLSC	--	--	1500
155-064-28ABD2	J.EHLERS	190	190	--	6	1944	--	--	S	211PIRR	SHLE	--	1500
155-064-28BBC	J.TOLLEFSON	46	46	--	36	1900	--	--	H+S	--	--	2300	1480
155-064-29BBB	NDSMC 8839	100	--	--	--	1973	--	--	U	--	--	--	1475
155-064-29BCB	J.SPIEGLER	50	50	--	--	--	18	07/ /1948	U	112PLSC	--	--	1472
155-064-30DAD	R.RUGER	24	24	--	--	--	12	08/ /1943	H+S	112PLSC	--	--	1477
155-064-33CCA	J.EVERSON	50	50	--	--	--	--	--	U	--	--	--	--
155-064-34ACC	TEST WELL 205	145	--	--	--	1949	24	08/ /1943	S	112PLSC	--	2170	1463
155-064-348BA	M.BORG	63	63	--	4	1940	--	--	H	211PIRR	SHLE	--	1473
155-064-34BCD	TEST WELL 201	80	--	--	--	1949	--	--	U	--	--	--	1474
155-064-348DA	GREAT NORTHERN	79	79	--	12	1939	4	08/ /1943	N	112BGFV	--	--	1471
155-064-348DD1	TEST WELL 200	145	--	--	--	1949	--	--	U	--	--	--	1472
155-064-348DD2	TEST WELL 204	150	--	--	--	1949	--	--	U	--	--	--	1472
155-064-348DD3	TEST WELL 199	135	--	--	--	1949	--	--	U	--	--	--	1463
155-064-348DD4	TEST WELL 198	135	--	--	--	1949	2	10/ /1949	U	--	--	--	1462
155-064-34CCC	TEST WELL 159	60	--	--	--	1949	--	--	U	--	--	--	1490
155-064-34DCD	TEST WELL 202	65	--	--	--	1949	--	--	U	--	--	--	1470
155-064-34DDC	TEST WELL 151	75	--	--	--	1949	--	--	U	--	--	--	1458
155-064-35ADA	J.MCCARTHY	80	80	--	5	1938	15	05/ /1949	H+S	112PLSC	--	--	1472
155-064-35ADC	TEST WELL 155	120	--	--	--	1949	--	--	U	--	--	--	1463
155-064-35BAB	TEST WELL 154	125	--	--	--	1949	--	--	U	--	--	--	1462
155-064-35BCD	TEST WELL 153	86	--	--	--	1949	--	--	U	--	--	--	1458
155-064-35CCD	NDSMC 9076	80	--	--	--	1974	--	--	U	--	--	--	1463
155-064-35CCD	TEST WELL 152	60	--	--	--	1949	--	--	U	--	--	--	1463
155-065-04AAA	T.MITCHEL	25	25	--	24	1920	16	07/ /1949	H+S	112PLSC	--	--	1454
155-065-05DCB	O.SEVERSON	--	--	--	--	--	17	07/ /1949	H+S	--	--	--	1460
155-065-06CCC	G.LANNOYE	73	73	--	4	1928	--	--	H+S	211PIRR	SHLE	1750	1458
155-065-06DAB	V.HORNE	35	35	--	24	1936	15	07/ /1949	U	112PLSC	--	--	1467
155-065-08BBC	J.ELGREN	79	79	--	4	1926	20	07/ /1949	H+S	211PIRR	SHLE	--	1467
155-065-08BDD	NDSMC 8831	60	50	--	1	1973	9	09/ /1973	U	112BGFV	SAND	1390	1456
155-065-09ADD1	C.ADAHL	29	29	--	--	--	18	09/ /1943	S	112PLSC	--	--	1462
155-065-09ADD2	C.ADAHL	145	145	--	--	--	--	--	H	211PIRR	SHLE	3700	1462
155-065-09ADD3	C.ADAHL	145	145	--	--	--	--	--	H	211PIRR	SHLE	--	1462
155-065-09ADD4	C.ADAHL	72	72	--	--	1973	12	08/ /1974	H+S	211PIRR	SHLE	1500	1465
155-065-09BBA	J.SWANYACK	60	60	--	--	--	9	07/ /1949	U	211PIRR	SHLE	--	1457
155-065-10CAB	W.MURRAY	32	32	--	--	--	17	09/ /1943	S	--	--	--	1458



LOCAL NUMBER	OWNER	DEPTH DRILLED (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAMETER (INCHES)	DATE COMPLETED	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	USE OF WATER	PRINCIPAL AQUIFER	LITHOLOGY OF PRINCIPAL AQUIFER	SPECIFIC CONDUCTANCE ( $\mu\text{MHOS}/\text{CM}$ @ 25°C)	ALTITUDE OF LAND SURFACE (FEET)
155-065-12ADA	H. JOHANSON	125	125	--	--	--	--	--	H+S	211PIRR	SHLE	1390	1472
155-065-13BBC	H. AMMOT	60	60	--	6	1969	--	--	H	--	--	2320	1465
155-065-168DD1	V. HORNE	94	94	--	4	1920	14	07/ /1949	U	211PIRR	SHLE	--	1462
155-065-168DD2	V. HORNE	98	98	--	4	1920	17	07/ /1949	H+S	211PIRR	SHLE	1550	1462
155-065-160AD	G. GILBERTSON	123	123	--	--	--	--	--	H+S	211PIRR	SHLE	2150	1467
155-065-18ADA	E. BEREGETH	75	75	--	--	--	19	07/ /1949	S	112BGFV	--	--	1472
155-065-19ABA	W. KLIME	37	37	--	24	1908	21	07/ /1949	H+S	112PLSC	--	--	1466
155-065-208BB	O. GUSTAFSON	45	45	--	4	1965	--	--	H	112PLSC	--	820	1472
155-065-20CCC	NDSMC 8832	300	--	--	--	1973	--	--	U	--	--	--	1450
155-065-20DDD1	J. GRAICHEN	27	27	--	36	1945	8	07/ /1949	U	112PLSC	--	--	1462
155-065-20DDD2	J. GRAICHEN	105	105	--	6	1961	--	--	H	211PIRR	SHLE	1900	1462
155-065-21CCC1	H. HORNE	86	86	--	4	1918	--	--	H+S	211PIRR	SHLE	1600	1462
155-065-21CCC2	H. HORNE	25	25	--	6	1968	--	--	H	112PLSC	--	1600	1462
155-065-22ADD	H. CONNOLLY	60	60	--	4	1920	16	06/ /1949	H+S	112BGFV	--	--	1453
155-065-23AAA	NDSMC 8840	100	--	--	--	1973	--	--	U	--	--	--	1461
155-065-23DAD1	G. JERYEN	26	26	--	36	1908	13	09/ /1943	U	112PLSC	--	1200	1478
155-065-23DAD2	G. JERYEN	163	163	--	--	--	10	09/ /1943	H+S	211PIRR	SHLE	1320	1478
155-065-24DDA	M. & R. LAKE	46	46	--	--	--	26	09/ /1943	U	--	--	--	1492
155-065-27DDA	F. JOHNSON	160	160	--	--	--	20	09/ /1943	S	211PIRR	SHLE	2450	1502
155-065-28AAA	NDSMC 8833	140	--	--	--	1973	--	--	U	--	--	--	1474
155-065-29AAA1	E. FORSNESS	50	50	--	--	--	20	07/ /1949	H+S	112PLSC	--	--	1462
155-065-29AAA2	NDSMC 9031	80	--	--	--	1974	--	--	U	--	--	--	1462
155-065-29CCB	J. KRANINGER	100	100	--	--	--	--	--	H+S	112SPRD	--	1250	1462
155-065-308BB	NDSMC 9030	140	101	--	1	1974	10	09/ /1974	U	112SPRD	SAND	1800	1453
155-065-308BC	G. MILLER	104	104	--	--	--	22	07/ /1949	H	112SPRD	--	--	1462
155-065-34CDC	L. BLANCHFIELD	119	119	--	4	1946	26	08/ /1948	H+S	211PIRR	SHLE	--	1472
155-065-35AAB	R. RIGGEN	60	60	--	--	--	37	09/ /1943	H+S	--	--	--	1487
155-065-35BAC	TEST WELL 651	60	--	--	--	1952	--	--	U	--	--	--	1585
155-065-35CCC	NDSMC 9022	120	--	--	--	1974	--	--	U	--	--	--	1478
155-065-36CAA	R. COCKRANE	63	63	--	--	--	14	09/ /1943	H	--	--	--	1475
155-066-01ADD	W. DION	180	180	--	--	1973	20	06/ /1950	H+S	--	--	--	1455
155-066-02CCC	NDSMC 8830	320	--	--	--	--	--	--	U	--	--	--	1450
155-066-02DCC	Z. BARETT	39	39	--	24	1947	15	06/ /1950	H+S	112PLSC	--	--	1457
155-066-03ADD	W. WEBSTER	65	65	--	24	1959	--	--	H	112PLSC	--	3000	1447
155-066-038BB	NDSMC 9037	340	--	--	--	1974	--	--	U	--	--	--	1447
155-066-048AB	NDSMC 9036	180	--	--	--	1974	--	--	U	--	--	--	1450
155-066-048CD	R. YOUNG	36	36	--	--	--	11	06/ /1950	U	112PLSC	--	--	1453
155-066-04CCC	NDSMC 9035	240	141	--	1	1974	6	09/ /1974	U	112SPRD	SAND	1600	1450
155-066-058BC	D. NORD	120	120	--	--	--	14	06/ /1950	H+S	112SPRD	--	--	1453
155-066-06CBB	CHURCHS FERRY	36	36	--	--	--	15	06/ /1950	H	112PLSC	--	--	1457

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155-066-06CBC	FARMER'S CDDP	106	106	--	4	1949	18	06/ /1950	H	112SPRD		--	1461
155-066-06CCA	CHURCH'S FERRY	100	100	--	4	1949	16	06/ /1950	H	112SPRD		--	1458
155-066-06CCC1	LUTHERAN CHURCH	23	23	--	--	--	6	06/ /1950	H	112PLSC		--	1456
155-066-06CCC2	LUTHERAN CHURCH	99	99	96	4	1964	20	10/ /1964	H	112BGFV		--	1455
155-066-06CDB	I.CHRISTENSON	102	102	--	--	1972	10	08/ /1974	H	112SPRD	SAND	--	1453
155-066-07AAA	TEST HOLE 347	150	--	--	--	1950	--	--	U	--		--	1447
155-066-07BBA1	T.MELGESETH	158	158	--	4	1949	12	06/ /1950	H	211PIRR	SHLE	2600	1452
155-066-07BBA2	L.SYKORA	180	180	--	--	1973	--	--	H	211PIRR	SHLE	2200	1452
155-066-07CBC	L.SYKORA	180	180	--	6	1914	16	06/ /1950	H,S	211PIRR	SHLE	3200	1452
155-066-08BDB	W.L.LINDE	96	96	--	6	1917	14	06/ /1950	S	112PLSC		1700	1451
155-066-08CCB	S.KNUTSON	100	100	--	4	1949	20	06/ /1950	H,S	112PLSC		--	1462
155-066-09AAA	NDSMC 9034	180	121	--	1	1974	3	09/ /1974	U	112SPRD	SAND	1800	1450
155-066-09ACD	H.SLETTEN	160	160	--	--	--	12	06/ /1950	H,S	112SPRD		1820	1452
155-066-10BBA	A.OVERLAND	128	128	--	4	1960	--	--	H	112SPRD		1800	1452
155-066-11AAA	NDSMC 9033	320	284	--	1	1974	9	09/ /1974	U	112BGFV	SAND	5000	1453
155-066-11CBB	E.HENKE	160	160	--	--	--	15	06/ /1950	H,S	112SPRD		--	1457
155-066-11CCD	R.KAEDING	180	180	--	6	1918	20	06/ /1950	H,S	112SPRD		2300	1453
155-066-11DCC	R.KAEDING	152	152	--	6	1959	--	--	H	112SPRD		2200	1452
155-066-12ADD	J.MCCORMICK	75	75	--	--	--	--	--	S	112PLSC		1010	1463
155-066-13CCC	NDSMC 9032	200	--	--	--	1974	--	--	U	--		--	1457
155-066-14AAD	H.GOODWILL	11	11	--	48	1916	10	06/ /1950	U	112PLSC		--	1457
155-066-14DDD	C.ADAHL	36	36	--	--	--	12	06/ /1950	H,S	112PLSC		--	1457
155-066-16CBB	J.MCLEAN	30	30	--	--	--	8	06/ /1950	S	112PLSC		--	1464
155-066-16DDD	P.MILLER	170	170	--	6	1914	50	06/ /1950	H,S	112SPRD		1450	1457
155-066-17DAA	J.MCLEAN	110	110	--	--	--	16	06/ /1950	H	112SPRD		--	1462
155-066-20ADC	L.FLATH	160	160	--	6	1926	20	06/ /1950	H,S	112SPRD		--	1462
155-066-21ABA	NDSMC 8883	180	--	--	--	1973	--	--	U	--		--	1454
155-066-22ADC1	STATE HIGHWAY	400	400	--	--	1970	--	--	U	--		795	1461
155-066-22ADC2	J.CONNOR	84	84	--	6	1944	2	06/ /1950	H	211PIRR	SHLE	--	1462
155-066-22BBA	A.MOVE	30	30	--	--	--	14	06/ /1950	H,S	112PLSC		--	1462
155-066-23BBB1	P.BERGETH	200	200	--	6	1935	25	06/ /1950	H,S	112PLSC		3400	1462
155-066-23BBB2	P.BERGETH	120	120	--	6	1962	--	--	H	112SPRD		1500	1458
155-066-24CCD	A.GESSNER	189	189	--	6	1915	30	06/ /1950	H,S	211PIRR	SHLE	--	1463
155-066-24DAC1	L.GESSNER	165	165	--	6	1946	20	06/ /1950	H,S	211PIRR	SHLE	--	1462
155-066-24DAC2	L.GESSNER	28	28	--	24	1900	18	06/ /1950	U	112PLSC		1610	1462
155-066-24DAC3	A.GESSNER	140	140	--	--	--	40	11/ /1948	S	211PIRR	SHLE	--	1462
155-066-25BAD	A.ANDERSON	75	75	--	6	1926	20	06/ /1950	H,S	112PLSC		--	1462
155-066-25BBB1	H.GESSNER	26	26	--	12	1910	16	06/ /1950	H,S	112PLSC		--	1467
155-066-25BBB2	F.KAEDING	73	73	--	--	1973	17	08/ /1974	H	112BGFV	GRVL	1600	1460
155-066-258BD	PENN SCHOOL	100	100	--	--	--	23	06/ /1950	H	112BGFV	GRVL	--	1472

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155-066-26ADD	T.MCLEAN	31	31	--	--	--	11	06/ /1950	U	112PLSC		--	1462
155-066-26BCB	B.HALVORSON	155	155	--	6	1929	22	06/ /1950	H+S	112SPRD		--	1462
155-066-26CCC1	R.STEINKE	27	227	--	6	1925	22	06/ /1950	H+S	112PLSC		--	1467
155-066-26CCC2	NDSWC 8884	220	123	--	1	1973	15	09/ /1973	U	112SPRD	SAND	1690	1461
155-066-26DAD	E.GESSNER	150	150	--	6	1935	30	06/ /1950	H	112SPRD		--	1461
155-066-28ADD1	E.THOMPSON	73	73	--	--	--	--	--	--	--		--	1467
155-066-28ADD2	E. THOMPSON	54	54	--	--	01/01/1964	23	06/ /1950	H+S	112PLSC		690	1467
155-066-28DBB	T.STOESER	38	38	--	25	1900	19	06/ /1950	H+S	112PLSC		--	1458
155-066-29CCC	NDSWC 8882	140	--	--	--	1973	--	--	--	--		--	1455
155-066-29DCB	J.BERGETH	43	43	--	18	1900	29	06/ /1950	S	112PLSC		1620	1477
155-066-30CCC1	M.BLEGEN	26	26	--	--	--	12	06/ /1950	H+S	112PLSC		--	1455
155-066-30CCC2	S.CHEPULIS	60	60	--	4	1960	--	--	--	--		1110	1457
155-066-31DAC	D.STENBERG	46	46	--	--	--	11	06/ /1950	H+S	112PLSC		--	1452
155-066-32AAA	NDSWC 9029	160	--	--	--	1974	--	--	--	--		--	1472
155-066-32BAA	D.STENBERG	23	23	--	--	--	20	06/ /1950	U	112PLSC		--	1467
155-066-32CAB1	R.STOE	28	28	--	24	1915	12	06/ /1950	S	112PLSC		--	1453
155-066-32CAB2	R.STOE	99	99	--	4	1950	15	06/ /1950	H	112PLSC		1700	1453
155-066-33ABB	B.HALVORSON	45	45	--	18	1915	17	06/ /1950	U	112PLSC		--	1472
155-066-33BDD	J.BERGETH	45	45	--	--	--	35	06/ /1950	U	112PLSC		--	1482
155-066-34CCC	NDSWC 9028	160	121	--	1	1974	17	09/ /1974	U	112SPRD	SAND	1620	1460
155-066-34CDD	D.STOE	175	175	--	--	--	20	06/ /1950	S	--		1350	1483
155-066-36ABD	X.PAYERL	180	180	--	6	1910	25	06/ /1950	H+S	112SPRD		2600	1464
155-066-36BAB	X.PAYERL	160	160	--	6	1927	25	06/ /1950	H+S	112SPRD		1200	1463
156-060-04AAA	G.SETTINGSGARD	60	60	--	--	--	--	--	--	211PIRR	SHLE	4000	1531
156-060-05ACD	USAF 2026	130	130	--	4	1962	10	11/ /1962	U	211PIRR	SHLE	--	1517
156-060-05DBA	USAF 26	130	130	--	4	1962	19	04/ /1962	U	211PIRR	SHLE	--	1517
156-060-08BCC	NDSWC 8032	40	--	--	--	1971	--	--	U	--		--	1519
156-060-11CCC	NDSWC 5997	40	--	--	--	1971	--	--	U	--		--	1530
156-060-14ACC	R.BALEK	179	179	--	--	--	--	--	H	211PIRR	SHLE	--	1547
156-060-14DCC	NDSWC 5996	40	--	--	--	1971	--	--	U	--		--	1541
156-060-19CCC	NDSWC 8033	60	--	--	--	1971	--	--	U	--		--	1511
156-060-20CCD	NDSWC 5991	60	--	--	--	1971	--	--	U	--		--	1513
156-060-21AAA	NDSWC 5998	40	--	--	--	1971	--	--	U	--		--	1525
156-060-23DDD	T.PDLAK	18	18	--	36	1962	--	--	H	112PLSC		875	1530
156-060-24CCC1	J.OLDERBAK	24	24	24	30	1967	--	--	H	--		875	1532
156-060-24CCC2	NDSWC 5995	40	--	--	--	1971	--	--	U	--		--	1529
156-060-25CDD	W.RYSAVY	130	130	--	6	1972	--	--	H	211PIRR	SHLE	--	1532
156-060-28ACD1	CITY OF LAWTON	45	45	--	--	--	--	--	--	112BGFV		7030	1523
156-060-28ACD2	NDSWC 8038	100	--	--	--	1971	--	--	U	--		--	1524
156-060-28DAA	FARMERS UNION	30	30	--	48	1967	--	--	H	112PLSC		2200	1532

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156-060-280BB	K. LEIN	92	92	--	--	--	--	--	H	211PIRR	SHLE	5630	1517
156-060-298CB	C. SWANSON	18	18	--	--	--	14	07/ /1972	H	112ICCC		575	1515
156-060-29CCB	NDSWC 5990	40	15	12	1	1971	4	06/ /1971	U	112ICCC	SAND	1140	1504
156-060-29DAA	NDSWC 5983	60	--	--	--	1971	--	--	U	--		--	1521
156-060-29DCC	NDSWC 5992	60	--	--	--	1971	--	--	U	--		--	1518
156-060-30DCD	NDSWC 5985	60	--	--	--	1971	--	--	U	--		--	1504
156-060-31AAA	NDSWC 5984	40	--	--	--	1971	--	--	U	--		--	1503
156-060-31AAB	L. SWANSON	28	28	--	--	--	--	--	H	--		--	1512
156-060-34ABA	USAF 27	130	130	--	4	1962	12	02/ /1962	U	211PIRR	SHLE	--	1527
156-060-35BAB	NDSWC 5994	40	--	--	--	1971	--	--	U	--		--	1535
156-061-06ADA	USAF 46	130	130	--	4	1962	22	03/ /1962	U	211PIRR	SHLE	--	1512
156-061-06ADB	USAF 2046	130	130	--	4	1962	22	11/ /1962	U	211PIRR	SHLE	--	1514
156-061-11AAA	NDSWC 8031	60	--	--	--	1971	--	--	U	--		--	1513
156-061-140DD	R. STEVENS	50	50	--	6	1960	--	--	H	112PLSC		3100	1505
156-061-15BCC	W. HANSON	100	100	--	6	1947	--	--	H	211PIRR	SHLE	2220	1523
156-061-178CB	R. ANDERSON	70	70	--	--	--	--	--	S	211PIRR	SHLE	2250	1523
156-061-19AAA	NDSWC 8765	40	--	--	--	1973	--	--	U	--		--	1504
156-061-20BCD	E. NIENHUIS	120	120	--	--	--	--	--	H,S	211PIRR	SHLE	6600	1506
156-061-238BB	NDSWC 8030	80	--	--	--	1971	--	--	U	--		--	1516
156-061-24DDC	U. MYHRE	120	120	--	--	--	--	--	H	211PIRR	SHLE	--	1517
156-061-27CDC	USAF 2034	130	130	--	4	1962	13	--	U	211PIRR	SHLE	--	1508
156-061-27CDD	USAF 34	130	130	--	4	1962	24	04/ /1962	U	211PIRR	SHLE	--	1517
156-061-31ABA	A. GROHS	133	133	--	4	1970	--	--	H	211PIRR	SHLE	7750	1507
156-061-34AAA	NDSWC 8029	80	18	15	1	1971	7	07/ /1971	U	112ICCC	GRVL	337	1507
156-061-35AAA1	NDSWC 5987	80	--	--	--	1971	--	--	U	--		--	1502
156-061-35AAA2	NDSWC 5987-A	20	14	11	1	1971	3	06/17/1971	U	112ICCC	SAND	675	1502
156-061-35ABB	NDSWC 5988	60	--	--	--	1971	--	--	U	--		--	1501
156-061-35BCC	O. PEARSON	54	54	--	--	--	--	--	H	--		1720	1523
156-061-36BAB	NDSWC 5989	60	--	--	--	1971	--	--	U	--		--	1502
156-061-36BBB	NDSWC 5986	80	--	--	--	1971	6	06/ /1971	U	--		--	1505
156-061-36DDD	NDSWC 5999	40	--	--	--	1971	--	--	U	--		--	1501
156-062-09DDD	P. HANSON	80	80	--	--	--	--	--	H	211PIRR	SHLE	2280	1508
156-062-09DCD	A. KALHAGEN	100	100	--	6	1914	--	--	H	211PIRR	SHLE	4790	1502
156-062-10AAA	NDSWC 8766	40	--	--	--	1973	--	--	U	--		--	1498
156-062-11ADA	S. OLSON	80	80	--	8	1931	--	--	H	211PIRR	SHLE	5190	1516
156-062-14DCA	V. MILLER	100	100	--	4	1932	--	--	H	211PIRR	SHLE	5000	1517
156-062-19ABA	N. SCHNEIDER	--	80	--	4	1920	80	--	H	211PIRR	SHLE	2580	1500
156-062-20BBB	NDSWC 8791	60	58	--	4	1973	13	10/ /1973	U	211PIRR	SHLE	1100	1495
156-062-278CC1	J. SCHIELE	130	130	--	4	1968	--	--	S	211PIRR	SHLE	6200	1508
156-062-278CC2	J. SCHIELE	60	60	--	4	1942	--	--	H	211PIRR	SHLE	5300	1508

LOCAL NUMBER	OWNER	DEPTH DRILLED (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAMETER (INCHES)	DATE COMPLETED	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	USE OF WATER	PRINCIPAL AQUIFER	LITHOLOGY OF PRINCIPAL AQUIFER	SPECIFIC CONDUCTANCE (µMHOS/CM @ 25°C)	ALTITUDE OF LAND SURFACE (FEET)
156-062-270CB	USAF 2035	130	130	--	4	1962	15	11/ /1962	U	211PIRR	SHLE	--	1498
156-062-270CC	USAF 35	130	130	--	4	1962	20	04/ /1962	U	211PIRR	SHLE	--	1502
156-062-28CCB	E.O'BRIEN	130	130	--	4	1941			U	211PIRR	SHLE	4900	1497
156-062-31CCC	M.REARDON	100	100	--	--	--			H	112PLSC		790	1483
156-063-01ADD	N.NESS	104	104	--	6	1962			H	211PIRR	SHLE	4000	1498
156-063-01CCC	NDSWC 9060	60	--	--	--	1974			U	--		--	1494
156-063-060BC	K.GARSKKE	85	85	--	4	1915			H	211PIRR	SHLE	3000	1482
156-063-10CDD	NDSWC 9058	140	81	--	1	1974	8	09/24/1974	U	112BGFV	SAND	2200	1482
156-063-10DDD1	J.PAULSON	32	32	--	3	1954			H	112PLSC		4800	1487
156-063-10DDD2	NDSWC 8790	400	--	--	--	1973			U	--		--	1485
156-063-11CBB	M.PAULSON	40	40	--	4	1950			H	112BGFV		1710	1492
156-063-11CDD	NDSWC 9059	580	--	--	--	1974			U	--		--	1496
156-063-12BCB	M.THELIN	60	60	--	6	1950			H	--		750	1497
156-063-12BCB	M.THELIN	110	110	--	--	--			S	211PIRR	SHLE	--	1493
156-063-13AAB	USAF 45	130	130	--	4	1962	10	04/ /1962	U	211PIRR	SHLE	--	1492
156-063-180DD	C.ZETTLER	70	70	--	3	1951			H	--		990	1482
156-063-21AAA	NDSWC 9057	80	--	--	--	1974			U	--		--	1480
156-063-288BB	NDSWC 9056	80	--	--	--	1974			U	--		--	1480
156-063-29CCC	NDSWC 8821	60	--	--	--	1973			U	--		--	1471
156-063-30AAA	B.TRANGSRUD	110	110	--	4	1951			H	211PIRR	SHLE	1600	1477
156-063-32CDB1	J.HERMANSON	90	90	--	6	1930			S	211PIRR	SHLE	1900	1477
156-063-32CDB2	J.HERMANSON	98	98	--	6	1940			H	211PIRR	SHLE	1900	1477
156-063-34CCB1	R.COLLINSON	30	30	--	6	1955			H	--		2810	1482
156-063-34CCB2	R.COLLINSON	80	80	--	--	--			S	211PIRR	SHLE	2900	1482
156-063-36CCC	L.LABARRE	101	101	--	6	1961			H	--		1900	1483
156-064-02DCC	T.KITSCH	84	84	--	--	1972			H	211PIRR	SHLE	3900	1475
156-064-03CCB	C.ERICKSTAD	113	113	--	4	1948			H	211PIRR	SHLE	--	1472
156-064-06CDD	J.ZETTLER	85	85	--	8	1953			H	211PIRR	SHLE	4700	1466
156-064-118BB	NDSWC 8786	60	--	--	--	1973			U	--		--	1484
156-064-11CAD	D.KITSCH	75	75	--	--	--			H	211PIRR	SHLE	--	1480
156-064-15CDB1	B.GARSKKE	130	130	--	--	--			S	211PIRR	SHLE	--	1470
156-064-15CDB2	B.GARSKKE	120	120	120	4	1967			H	211PIRR	SHLE	--	1470
156-064-20CAB	L.BRYL	95	95	--	--	--			H	211PIRR	SHLE	3500	1477
156-064-24CCD	G.BARENODT	115	115	115	4	1955			H	211PIRR	SHLE	6500	1482
156-064-27DAD	NDSWC 9054	80	--	--	--	1974			U	--		--	1467
156-064-30BBB	NDSWC 9042	140	--	--	--	1974			U	--		--	1464
156-064-30DDD	NDSWC 8822	40	--	--	--	1973			U	--		--	1480
156-064-31DDA	L.SCHLIEVE	30	30	--	6	1963			H	112PLSC		1820	1463
156-064-34CCD	A.BARENODT	115	115	--	4	1950			H	211PIRR	SHLE	4100	1462
156-064-35DCD1	L.SHAW	65	65	--	6	1918			H	211PIRR	SHLE	3050	1467

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156-064-35DCD2	L. SHAW	60	60	--	6	1938		--	H	211PIRR	SHLE	3650	1467
156-065-01DAA	G. MIKKELSON	93	93	93	4	1957		--	H	211PIRR	SHLE	1500	1472
156-065-02CCC	NDSWC 8785	100	--	--	--	1973		--	U	--	--	--	1451
156-065-10BCC	R. ERICKSTAD	97	97	--	--	1973		--	H	211PIRR	SHLE	--	1461
156-065-13DAB1	N. ROSS	100	100	--	--	--		--	S	211PIRR	SHLE	--	1470
156-065-13DAB2	N. ROSS	15	15	--	30	1962		--	H	112PLSC	--	--	1470
156-065-13DAB3	N. ROSS	80	80	--	6	1952		--	H	--	--	975	1470
156-065-15AAA	R. ANDERSON	85	85	--	--	--		--	H	211PIRR	SHLE	5300	1453
156-065-15DDD	NDSWC 9041	100	--	--	--	1974		--	U	--	--	--	1454
156-065-17CCB	NDSWC 8824	80	--	--	--	1973		--	U	--	--	--	1456
156-065-20ABD1	E. HOISTAD	85	85	--	6	1952		--	H	211PIRR	SHLE	3380	1452
156-065-20ABD2	E. HOISTAD	28	28	--	36	1940		--	H	112PLSC	SHLE	3700	1452
156-065-21ABB	NDSWC 9039	80	--	--	--	1974		--	U	--	--	--	1450
156-065-22CCC	G. HOISTAD	115	115	115	6	1969		--	H	211PIRR	SHLE	4100	1457
156-065-22DDD	NDSWC 8823	120	60	--	1	1973	9	09/ /1973	U	112BGFV	GRVL	1590	1453
156-065-24DDC	G. PARRY	60	60	--	4	1948		--	H	--	--	2250	1465
156-065-26AAC1	P. NEES	100	100	--	--	1973		--	U	211PIRR	SHLE	--	1458
156-065-26AAC2	P. NEES	60	60	--	--	1973		--	U	211PIRR	SHLE	--	1459
156-065-26ABD	P. NEES	19	19	--	--	1973	10	08/ /1974	H	112TILL	CLAY	--	1456
156-065-26CBB	W. RUSHFELDT	100	100	--	4	1963		--	H	211PIRR	SHLE	3680	1455
156-065-28ADA	NDSWC 9040	80	--	--	--	1974		--	U	--	--	--	1462
156-065-30BBA1	E. PETERSON	97	97	97	6	1962		--	H	211PIRR	SHLE	3150	1457
156-065-30BBA2	E. PETERSON	30	30	--	36	1932		--	S	112PLSC	--	--	1457
156-065-31BBA	C. JOHNSON	175	175	--	6	1964		--	H	211PIRR	SHLE	5200	1460
156-066-04BAB	R. LONG	45	45	--	--	1962		--	H	--	--	2950	1453
156-066-05ADC1	J. ELSPERGER	48	48	--	32	1956		--	H	--	--	1280	1460
156-066-05ADC2	J. ELSPERGER	200	200	--	--	--		--	S	211PIRR	SHLE	6800	1460
156-066-08DDC	NDSWC 8829	160	--	--	--	1973		--	U	--	--	--	1445
156-066-12BBC	NDSWC 8826	80	--	--	--	1973		--	U	--	--	--	1447
156-066-12CCC	NDSWC 8825	80	60	--	1	1973	4	09/ /1973	U	112BGFV	SAND	2020	1449
156-066-18BAD	W. GIBBENS	100	100	--	6	1930		--	H	--	--	1300	1456
156-066-23DDD	NDSWC 9038	100	--	--	--	1974		--	U	--	--	--	1445
156-066-25CCC	L. FOSS	90	90	--	6	1930		--	H	112PLSC	--	3800	1456
156-066-28CCD	D. BAUERLE	280	280	--	6	1935		--	H	211PIRR	SHLE	5200	1448
156-066-30BBB	TEST HOLE 344	125	--	--	--	1950		--	U	--	--	--	1455
156-066-31CCA1	R. HAUSMANN	200	200	--	4	1912		--	H	211PIRR	SHLE	4200	1465
156-066-31CCA2	R. HAUSMANN	210	210	--	--	1964		--	U	211PIRR	SHLE	--	1460
156-066-31CCA3	R. HAUSMANN	136	136	109	4	1964	45	06/ /1964	H,S	211PIRR	SHLE	--	1460
156-066-31DDD	NDSWC 8828	140	103	--	1	1973	8	09/ /1973	U	1125PRD	SAND	1660	1447
156-066-34BBB	NDSWC 8827	475	409	--	1	1973	2	09/ /1973	U	112BGFV	SAND	--	1443

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156-066-35CC8	A.MENKE	125	125	125	4	1962		--	H	112PLSC		2000	1446
157-060-02AAD	C.ANDERSON	120	120	--	4	1947		--	S	211PIRR	SHLE	4390	1565
157-060-03AAB1	O.LANDSEM	50	50	--	--	--	30	07/ /1972	H	211PIRR	SHLE	5700	1565
157-060-03AAB2	O.LANDSEM	90	90	80	6	1971		--	H	211PIRR	SHLE	7200	1565
157-060-18CBC	NDSWC 8894	20	--	--	--	1973		--	U	--		--	1525
157-060-18CCC	E.HELLE	6	6	--	--	--	2	--	H	112ICCC		--	1515
157-060-19AAA	NDSWC 8769	40	--	--	--	1973		--	U	--		--	1517
157-060-22DDD	NDSWC 8770	40	--	--	--	1973		--	U	--		--	1529
157-060-24ABA	J.RICE	80	80	--	4	1947		--	H	211PIRR	SHLE	6700	1548
157-060-25BCB1	H.WOLOSETH	97	97	--	6	1964		--	H	211PIRR	SHLE	4500	1540
157-060-25BCB2	H.WOLOSETH	125	125	--	--	--		--	S	211PIRR	SHLE	--	1538
157-060-27ADA1	M.THOMPSON	100	100	--	6	1919		--	S	211PIRR	SHLE	5800	1533
157-060-27ADA2	M.THOMPSON	80	80	--	6	1965		--	H	211PIRR	SHLE	5700	1533
157-060-28CDD1	J.MALMIN	50	50	--	6	1925		--	H	211PIRR	SHLE	--	1515
157-060-28CDD2	J.MALMIN	120	120	--	--	--		--	S	211PIRR	SHLE	1110	1515
157-060-28DAD	O.HOLM	120	120	--	6	1952		--	H+S	211PIRR	SHLE	7200	1518
157-061-03DCC	O.TOLLEFSON	150	150	--	--	--		--	H+S	211PIRR	SHLE	5000	1530
157-061-09ADD1	R.ASLAKSON	120	120	--	6	1913		--	S	211PIRR	SHLE	--	1515
157-061-09ADD2	R.ASLAKSON	132	132	--	6	1955		--	H	211PIRR	SHLE	5200	1521
157-061-10BCC1	P.ASLAKSON	125	125	--	6	1961		--	H	211PIRR	SHLE	5200	1530
157-061-10BCC2	P.ASLAKSON	106	100	--	6	1964	100	--	S	211PIRR	SHLE	4600	1525
157-061-12DCD	E.BOE	160	160	160	6	1971		--	H+S	211PIRR	SHLE	--	1525
157-061-13ACA	NDSWC 8889	20	--	--	--	1973		--	U	--		--	1518
157-061-13ADC	NDSWC 8888	40	--	--	--	1973		--	U	--		--	1527
157-061-13DAA1	NDSWC 8890	25	20	--	1	1973	14	09/ /1973	U	112ICCC	SAND	--	1528
157-061-13DAA2	NDSWC 8891	20	--	--	--	1973		--	U	--		--	1525
157-061-13DAB1	NDSWC 8885	30	17	--	1	1973	11	09/ /1973	U	112ICCC	GRVL	--	1523
157-061-13DAB2	NDSWC 8886	20	--	--	--	1973		--	U	--		--	1520
157-061-13DAB3	NDSWC 8887	20	--	--	--	1973		--	U	--		--	1520
157-061-13DAB4	EDMORE CITY	45	45	--	54	1973	8	09/ /1974	P	211PIRR	SHLE	--	1520
157-061-13DAC	EDMORE CITY	21	21	--	60	1952		--	P	112ICCC	SHLE	--	1527
157-061-13DAD	NDSWC 8892	20	--	--	--	1973		--	U	--		--	1523
157-061-13DCA	NDSWC 8893	20	--	--	--	1973		--	U	--		--	1512
157-061-14AAA	NDSWC 8768	40	--	--	--	1973		--	U	--		--	1521
157-061-17DCC1	G.RAMBERG	88	88	42	4	1964		--	H	211PIRR	SHLE	--	1526
157-061-17DCC2	G.RAMBERG	150	150	--	--	--		--	S	211PIRR	SHLE	--	1526
157-061-19BBB	NDSWC 9063	60	--	--	--	1974		--	U	--		--	1514
157-061-24CDD	J.HOLLEY	46	46	46	36	1971		--	H	211PIRR	SHLE	--	1527
157-061-27AAA	F.SCHLEDORN	100	100	--	6	1914		--	H	211PIRR	SHLE	--	1518
157-061-28AAC	A.MONSON	80	80	--	--	--		--	S	211PIRR	SHLE	--	1520

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157-061-32CCB	M.KELLY	60	60	--	-	--			H	112PLSC		5600	1515
157-061-33AAA	NDSWC 8767	40	--	--	-	1973			U	--		--	1502
157-062-01ABB1	R.MARTINSON	80	80	--	-	--			S	211PIRR	SHLE	6600	1522
157-062-01ABB2	R.MARTINSON	100	100	--	6	1957			H	211PIRR	SHLE	570	1525
157-062-04BAA1	P.MARTINSON	90	90	--	6	1948			H	211PIRR	SHLE	--	1520
157-062-04BAA2	P.MARTINSON	90	90	80	6	1965			H	211PIRR	SHLE	4950	1522
157-062-04CCC	NDSWC 9064	60	--	--	-	1974			U	--		--	1511
157-062-05AAA	K.ERICKSON	90	90	--	6	1962			H	211PIRR	SHLE	5300	1527
157-062-06CCC	M.GETTE	90	90	--	-	--			H	211PIRR	SHLE	1800	1523
157-062-11DDD1	G.HODOUS	120	120	--	4	1960			S	211PIRR	SHLE	--	1516
157-062-11DDD2	G.HODOUS	27	27	--	6	1969			H	112PLSC		1190	1516
157-062-13AAA	NDSWC 8776	40	--	--	-	1973			U	--		--	1511
157-062-18ABD	D.BESSE	165	165	--	6	1960			H	211PIRR	SHLE	1300	1537
157-062-21BCC	NDSWC 9062	60	--	--	-	1974			U	--		--	1505
157-062-22DAA	P.STEFFEN	100	100	--	6	1961			H	211PIRR	SHLE	4000	1513
157-062-23BA8	USAF 318	130	130	--	4	1962	19	05/ /1962	U	211PIRR	SHLE	--	1513
157-062-2388A	USAF 47-2	130	130	--	4	1962	15	03/ /1962	U	211PIRR	SHLE	--	1508
157-062-238CA	USAF 2318	130	130	--	3	1962	16	11/ /1962	U	211PIRR	SHLE	--	1510
157-062-2888B	NDSWC 8789	80	53	--	1	1973	7	09/ /1973	U	112BGFV	GRVL	2400	1505
157-062-298DD	T.NEWGARD	40	40	--	-	--			H	--		1490	1507
157-062-3388B	NDSWC 9061	60	--	--	-	1974			U	--		--	1505
157-063-06AAA	NDSWC 9070	60	--	--	-	1974			U	--		--	1498
157-063-08CCA	G.NELSON	100	100	--	-	--			H	--		1400	1497
157-063-11CCC	NDSWC 8788	40	--	--	-	1973			U	--		--	1500
157-063-1288B	W.ADAMS	140	140	--	6	1904			H	211PIRR	SHLE	2880	1518
157-063-12CBC	W.SMITH	125	125	60	6	1968			H	211PIRR	SHLE	4200	1512
157-063-148AB	L.SAGER	75	75	--	-	--			H	211PIRR	SHLE	3800	1512
157-063-14CCC	USAF 48	130	130	--	4	1962	20	03/ /1962	U	211PIRR	SHLE	--	1493
157-063-168AB	G.NYGAARD	111	111	--	4	1957			H	211PIRR	SHLE	4900	1497
157-063-18AAA	NDSWC 9071	260	141	--	1	1974	6	09/ /1974	U	112BGFV	GRVL	3200	1491
157-063-19ABC	USAF 2049	130	130	--	3	1962	14	12/ /1972	U	211PIRR	SHLE	--	1493
157-063-228CB	NDSWC 9065	60	--	--	-	1974			U	--		--	1490
157-063-22DAC	M.WASS	80	80	--	6	1915			H	211PIRR	SHLE	2590	1503
157-063-23DDC	C.WASS	80	80	--	6	1915			H	211PIRR	SHLE	--	1496
157-063-248AD	USAF 2048	130	130	--	4	1962	15	12/ /1962	U	211PIRR	SHLE	--	1500
157-063-2688B	NDSWC 8787	60	--	--	-	1973			U	--		--	1495
157-063-26CBB	C.ERICKSTAD	100	100	--	-	--			H	--		1380	1495
157-063-27CCC	NDSWC 9066	300	141	--	1	1974	5	09/ /1974	U	112BGFV	GRVL	1850	1484
157-063-288AA	S.BERG	90	90	--	6	1962			H	112PLSC		1800	1482
157-063-29DDD	NDSWC 9067	60	--	--	-	1974			U	--		--	1477



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157-063-33BBA	J. BRODEN	100	100	--	6	1920		--	H	211PIRR	SHLE	--	1489
157-063-34ABA1	NDSWC 9068	620	--	--	--	1974		--	U	--	--	--	1486
157-063-34ABA2	NDSWC 9068-A	160	141	--	1	1974	9	09/ /1974	U	112BGFV	GRVL	980	1486
157-064-02AAA	NDSWC 9069	360	--	--	--	1974		--	U	--	--	--	1499
157-064-02BDD	STARKWEATHER	140	140	100	4	1957		--	H	211PIRR	SHLE	2390	1498
157-064-03DDD	NDSWC 9072	340	271	--	1	1974	13	09/ /1974	U	112BGFV	SAND	6000	1490
157-064-05ABB	USAF 56	130	130	--	4	1962	16	03/ /1962	U	211PIRR	SHLE	--	1478
157-064-07DDA1	B. BERG	120	120	120	4	1938		--	S	211PIRR	SHLE	--	1473
157-064-07DDA2	B. BERG	105	105	105	4	1970		--	H	211PIRR	SHLE	4400	1473
157-064-07DDA3	B. BERG	146	146	--	--	1973		--	H	211PIRR	SHLE	--	1472
157-064-13BCC	A. BRAATHEN	118	118	--	6	1947		--	H	--	--	1810	1488
157-064-15ABA	NDSWC 8783	40	--	--	--	1973		--	U	--	--	--	1480
157-064-17DDD1	H. SAGER	150	150	--	6	1957		--	H	211PIRR	SHLE	7200	1473
157-064-17DDO2	H. SAGER	160	160	--	6	1959		--	S	211PIRR	SHLE	7500	1473
157-064-23BCB1	C. ANDERSON	90	90	80	6	1960		--	H	211PIRR	SHLE	2600	1487
157-064-23BCB2	C. ANDERSON	120	120	--	6	1900		--	S	211PIRR	SHLE	1900	1487
157-064-24ABC	USAF 49	100	100	--	4	1962	21	04/ /1962	U	211PIRR	SHLE	--	1487
157-064-258BB1	F. OVERBO	60	60	--	4	1919		--	H	112PLSC	--	1350	1483
157-064-258BB2	F. OVERBO	60	60	--	4	1919		--	H	112PLSC	--	1100	1483
157-064-28CCC	NDSWC 8784	60	--	--	--	1973		--	U	--	--	--	1471
157-064-28DAB	H. BOTTLFSON	116	80	--	6	1915		--	H	211PIRR	SHLE	--	1472
157-064-35ADB	D. LEE	118	118	--	--	1973		--	H,S	211PIRR	SHLE	3980	1495
158-060-09BAB	A. BERG	160	160	--	6	1948		--	H	211PIRR	SHLE	4600	1591
158-060-10AAA	NDSWC 8772	40	--	--	--	1973		--	U	--	--	--	1583
158-060-11BAA	O. GROWHVD	40	40	--	24	1953	12	06/ /1972	H,S	211PIRR	SHLE	2650	1604
158-060-13BBB	A. LORAS	85	85	--	6	1953		--	H	211PIRR	SHLE	4800	1585
158-060-18DDD	A. TOLLEFSON	80	80	--	--	--	20	06/ /1972	H	211PIRR	SHLE	--	1553
158-060-19DDA	M. KUCHAR	75	75	--	--	--	--	--	S	211PIRR	SHLE	1550	1547
158-060-240CD1	E. REINHOLT	39	39	--	6	1948		--	H	211PIRR	SHLE	3350	1572
158-060-240CD2	E. REINHOLT	60	60	--	6	1948		--	S	211PIRR	SHLE	5600	1572
158-060-240CD3	E. REINHOLT	9	9	--	--	--		--	H	112PLSC	--	810	1572
158-060-240DB	USAF 2064	132	132	--	4	1962	10	11/ /1962	U	211PIRR	SHLE	--	1576
158-060-24AAA	NDSWC 8771	40	--	--	--	1973		--	U	--	--	--	1566
158-060-26ACC	L. STENSLAND	18	18	--	36	1940	6	06/ /1972	H	211PIRR	SHLE	250	1574
158-060-26BBB	O. STENSLAND	150	150	--	4	1957	18	06/ /1972	H	211PIRR	SHLE	500	1567
158-060-28AAA	L. DAMMEN	19	19	--	--	--	5	06/ /1972	H	211PIRR	SHLE	1310	1558
158-060-29AAA	NDSWC 8773	40	--	--	--	1973		--	U	--	--	--	1555
158-060-30BBB	E. KUCHAR	80	80	--	--	--		--	S	211PIRR	SHLE	8270	1543
158-060-30BDC	E. KUCHAR	83	83	--	4	1969		--	S	211PIRR	SHLE	--	1540

LOCAL NUMBER	OWNER	DEPTH DRILLED (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAMETER (INCHES)	DATE COMPLETED	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	USE OF WATER	PRINCIPAL AQUIFER	LITHOLOGY OF PRINCIPAL AQUIFER	SPECIFIC CONDUCTANCE (µMHOS/CM @ 25°C)	ALTITUDE OF LAND SURFACE (FEET)
158-060-30C8D	USAF 2329	130	130	--	3	1962	17	11/ /1962	U	211PIRR	SHLE	--	1540
158-060-35ACD	A. MYRVIK	82	82	--	4	1970		--	H	211PIRR	SHLE	4000	1558
158-061-01CDD1	R. TORKELSON	110	110	50	6	1948	60	06/ /1972	H	211PIRR	SHLE	6900	1568
158-061-01CDD2	R. TORKELSON	100	100	50	6	1945	60	06/ /1972	S	211PIRR	SHLE	6300	1568
158-061-04ADA1	T. IVESDAL	17	17	--	36	1947	11	06/ /1972	H	211PIRR	SHLE	2390	1557
158-061-04ADA2	T. IVESDAL	100	100	--	6	1950	50	06/ /1972	H	211PIRR	SHLE	6100	1557
158-061-10CCC	F. INGULSRUD	98	98	44	4	1971		--	H	211PIRR	SHLE	2700	1563
158-061-10DDD	NDSWC 8774	40	--	--	--	1973		--	U	--	--	--	1545
158-061-12CBC	T. NOVACEK	100	100	--	6	1912		--	H,S	211PIRR	SHLE	--	1563
158-061-16DDD	E. JOHNSON	104	104	60	6	1964		--	S	211PIRR	SHLE	5600	1547
158-061-21CCC1	I. ADSEM	120	120	--	4	1926		--	S	211PIRR	SHLE	5900	1541
158-061-21CCC2	I. ADSEM	95	95	90	4	1971		--	H	211PIRR	SHLE	--	1541
158-061-22AAB	J. IVESDAL	--	--	--	--	--		--	S	--	--	3850	1540
158-061-23ADA1	J. NOVACEK	60	60	--	6	1915		--	S	211PIRR	SHLE	--	1538
158-061-23ADA2	J. NOVACEK	43	43	--	24	1965	38	06/ /1972	H	211PIRR	SHLE	--	1548
158-061-29AAA	J. ADSEM	107	107	--	4	1964		--	S	211PIRR	SHLE	--	1542
158-061-30A8B	USAF 62	130	130	--	4	1962	20	03/ /1962	U	211PIRR	SHLE	--	1541
158-061-33DAA	M. BREKKE	60	60	--	6	1967		--	H,S	211PIRR	SHLE	2490	1525
158-061-34CCC	NDSWC 8775	40	--	--	--	1973		--	U	--	--	--	1531
158-061-36DAA1	L. KUCHAR	72	72	30	6	1965	9	06/ /1972	H	211PIRR	SHLE	6400	1530
158-061-36DAA2	L. KUCHAR	80	80	--	--	--	30	06/ /1972	H	211PIRR	SHLE	3700	1530
158-062-04BAA	G. LOGIE	182	182	182	4	1966	120	04/ /1966	H	211PIRR	SHLE	--	1566
158-062-04BAD	M. SEVEREID	150	150	--	4	1968	34	--	H	211PIRR	SHLE	--	1573
158-062-05DAA	E. ANDERSON	100	100	--	6	1940		--	H,S	211PIRR	SHLE	4150	1565
158-062-06DDD	NDSWC 8778	100	--	--	--	1973		--	U	--	--	--	1551
158-062-08ADD	D. SCHONAUER	113	113	--	--	1972		--	H,S	211PIRR	SHLE	5500	1556
158-062-08CCD	R. ANDERSON	75	75	--	--	--		--	H,S	211PIRR	SHLE	4300	1553
158-062-10BAA	E. SIMON	105	105	100	4	1951		--	H	211PIRR	SHLE	3150	1566
158-062-11CAA	M. SKAAR	100	100	--	6	1960		--	H	211PIRR	SHLE	6200	1562
158-062-21AAD1	R. MACKKEY	110	110	--	6	1971		--	H	211PIRR	SHLE	5600	1553
158-062-21AAD2	R. MACKKEY	90	--	--	--	--		--	S	211PIRR	SHLE	5300	--
158-062-22DDC	S. OVERBO	100	100	--	6	1967	30	06/ /1972	H	211PIRR	SHLE	7250	1547
158-062-24DCB	USAF 2062	130	130	--	4	1962	15	11/ /1962	U	211PIRR	SHLE	--	1545
158-062-26DAA1	B. HAGEN	100	100	--	6	1945		--	S	211PIRR	SHLE	--	1535
158-062-26DAA2	B. HAGEN	90	90	--	6	1962	50	06/ /1972	H	211PIRR	SHLE	--	1535
158-062-27B8B	NDSWC 8777	60	--	--	--	1973		--	U	--	--	--	1537
158-062-30A8B	USAF 60	130	130	--	4	1962	29	03/ /1962	U	211PIRR	SHLE	--	1531
158-062-30CCC	E. SCHULTZ	168	168	--	--	--		--	H,S	211PIRR	SHLE	3200	1526
158-062-34DAA	E. SMITH	100	100	--	6	1962	18	06/ /1972	H	211PIRR	SHLE	--	1536
158-063-03BAA	D. SCHMIESS	112	112	--	6	1963		--	H	211PIRR	SHLE	2950	1550

LOCAL NUMBER	OWNER	DEPTH DRILLED (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAMETER (INCHES)	DATE COMPLETED	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	USE OF WATER	PRINCIPAL AQUIFER	LITHOLOGY OF PRINCIPAL AQUIFER	SPECIFIC CONDUCTANCE (µMHOS/CM @ 25°C)	ALTITUDE OF LAND SURFACE (FEET)
158-063-08BA8	J. DIX	90	90	--	-	--			H,S	211PIRR	SHLE	3750	1545
158-063-11DDO	E. WERNER	111	111	80	6	1950	0		H,S	211PIRR	SHLE	3650	1545
158-063-12CCC	NDSMC 8779	100	--	--	-	1973			U	--	--	--	1537
158-063-13DDO	L. WERNER	165	165	--	6	1962			H	211PIRR	SHLE	5700	1540
158-063-19CCC	M. SEVITZ	53	53	--	-	--	16	06/ /1972	H	211PIRR	SHLE	1690	1520
158-063-20BCD	G. SATHER	90	90	--	-	--			H	211PIRR	SHLE	2200	1525
158-063-24CDC	L. BLAKE	125	125	--	6	1953			H	211PIRR	SHLE	2500	1518
158-063-25ABO	USAF E-0	150	150	79	7	1963	18	06/ /1963	U	211PIRR	SHLE	--	1522
158-063-27CCD	R. REYNOLDS	120	120	--	-	--			H,S	--	--	--	1522
158-063-29DDD	M. PASTIAN	86	86	--	-	--			H	112TILL	--	3450	1516
158-063-30ABB	USAF 57	130	130	--	4	1962	15	03/ /1962	U	211PIRR	SHLE	--	1513
158-063-30ABC	USAF 2057	130	130	--	3	1962	13	11/ /1962	U	211PIRR	SHLE	--	1518
158-063-32AAA	NDSMC 8780	200	163	157	1	1973	0	09/ /1973	U	112BGFV	GRVL	4300	1501
158-064-09DCD	J. FELDNER	80	80	80	-	1965	0		H,S	211PIRR	SHLE	2020	1510
158-064-09DDD	NDSMC 8781	40	--	--	-	1973			U	--	--	--	1507
158-064-11CDO	A. SCHRAG	80	80	--	-	--			H	211PIRR	SHLE	5390	1530
158-064-170CB	R. WILHELM	90	90	--	-	--			H	211PIRR	SHLE	1800	1513
158-064-18DDD	NDSMC 9074	60	--	--	-	1974			U	--	--	--	1495
158-064-23RCC	J. MCLEAN	150	150	--	-	--			H	211PIRR	SHLE	--	1510
158-064-23CCD	H. NIELSON	100	100	--	6	1900			H,S	211PIRR	SHLE	2600	1512
158-064-25ABB	G. ORDAHL	122	122	59	4	1963	20	10/ /1963	H,S	211PIRR	SHLE	--	1512
158-064-25CCC	H. GUENTHER	100	100	--	4	1949			H	211PIRR	SHLE	1800	1505
158-064-26CCB	P. GJEVRE	219	219	--	6	1962	19		H	211PIRR	SHLE	1680	1500
158-064-29BBB	NDSMC 9073	300	--	--	-	09/04/1974			U	--	--	--	1490
158-064-31DDD	NDSMC 8782	40	--	--	-	1973			U	--	--	--	1476
158-064-35CDO	L. CURRIE	60	60	--	6	1912			H	112PLSC	--	1200	1505

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TABLE 2.--Water levels in selected wells

## EXPLANATION

Water levels shown have been adjusted to feet below or (+) above land surface

MP, measuring point                      lsd, land surface datum

Depth to water, in feet below or (+) above land surface

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151-062-03DDD    MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Sept. 27, 1973..	48.70	Mar. 28.....	49.26	Sept. 23.....	48.57
Oct. 16.....	49.23	May 7.....	48.94	Oct. 29.....	48.58
Nov. 21.....	49.06	June 17.....	48.77	Nov. 25.....	48.53
Jan. 7, 1974..	49.26	July 22.....	48.64	Dec. 30.....	48.43
Feb. 13.....	49.31	Aug. 19.....	48.60		

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151-062-09ABB    MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 25, 1973..	49.81	Mar. 28.....	49.84	Sept. 23.....	49.60
Oct. 16.....	49.89	May 7.....	49.71	Oct. 29.....	49.60
Nov. 21.....	49.77	June 17.....	49.38	Nov. 25.....	49.50
Jan. 7, 1974..	49.86	July 22.....	49.60	Dec. 30.....	49.28
Feb. 13.....	49.88	Aug. 19.....	49.57		

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152-062-07ACA1    MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 26, 1973..	64.09	Mar. 28.....	63.73	Sept. 23.....	63.44
Oct. 16.....	64.05	May 7.....	63.47	Oct. 29.....	63.50
Nov. 21.....	63.89	June 17.....	62.97	Nov. 25.....	63.43
Jan. 7, 1974..	63.84	July 22.....	63.36	Dec. 30.....	63.33
Feb. 13.....	63.80	Aug. 16.....	63.38		

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152-062-07ACA2    MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 26, 1973..	9.79	Mar. 28.....	10.02	Sept. 23.....	7.29
Oct. 16.....	9.75	May 7.....	9.72	Oct. 29.....	7.44
Nov. 21.....	9.16	June 17.....	7.63	Nov. 25.....	7.48
Jan. 7, 1974..	9.05	July 22.....	6.95	Dec. 30.....	7.56
Feb. 13.....	9.36	Aug. 16.....	6.94		

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152-062-21DBD    MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 26, 1973..	13.60	May 7.....	13.00	Sept. 23.....	12.87
Oct. 16.....	13.50	June 17.....	12.48	Oct. 29.....	12.46
Nov. 21.....	13.37	July 22.....	12.72	Nov. 25.....	12.77
Jan. 7, 1974..	13.36	Aug. 19.....	12.80	Dec. 30.....	12.70

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Depth to water, in feet below or (+) above land surface

152-062-27AAA MP is top of 4-inch plastic pipe 1.0 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Oct. 5, 1973..	13.03	Feb. 15.....	10.48	July 25.....	9.12
Oct. 10.....	12.97	Feb. 20.....	10.62	July 31.....	9.26
Oct. 15.....	11.79	Feb. 25.....	10.54	Aug. 5.....	10.81
Oct. 20.....	10.85	Feb. 28.....	10.55	Aug. 10.....	10.78
Oct. 25.....	10.67	Mar. 5.....	10.48	Aug. 15.....	10.67
Oct. 31.....	10.08	Mar. 10.....	10.49	Aug. 20.....	10.68
Nov. 5.....	10.45	Mar. 15.....	10.48	Aug. 25.....	10.68
Nov. 10.....	10.14	Mar. 20.....	10.49	Aug. 31.....	10.58
Nov. 15.....	9.92	Mar. 25.....	10.35	Sept. 5.....	10.55
Nov. 20.....	10.19	Mar. 31.....	10.88	Sept. 10.....	10.60
Nov. 25.....	10.10	Apr. 5.....	11.18	Sept. 15.....	10.58
Nov. 30.....	10.21	Apr. 10.....	10.29	Sept. 20.....	10.73
Dec. 5.....	9.79	Apr. 25.....	9.65	Oct. 5.....	10.60
Dec. 10.....	9.88	Apr. 30.....	8.75	Oct. 10.....	10.66
Dec. 15.....	9.75	May 10.....	7.21	Oct. 15.....	10.63
Dec. 20.....	9.52	May 15.....	7.11	Oct. 20.....	10.57
Dec. 25.....	9.57	May 20.....	6.93	Oct. 25.....	10.70
Dec. 31.....	9.23	May 25.....	7.40	Nov. 25.....	9.77
Jan. 5, 1974..	9.22	May 31.....	7.20	Nov. 30.....	9.77
Jan. 10.....	9.55	June 5.....	6.65	Dec. 5.....	9.60
Jan. 15.....	10.00	June 10.....	6.85	Dec. 10.....	9.57
Jan. 20.....	10.30	June 15.....	7.09	Dec. 15.....	9.57
Jan. 25.....	9.85	June 20.....	7.09	Dec. 20.....	9.60
Jan. 31.....	10.15	June 25.....	7.25	Dec. 25.....	9.42
Feb. 5.....	10.00	June 30.....	7.62	Dec. 30.....	9.45
Feb. 10.....	9.85	July 5.....	8.16	Dec. 31.....	9.48

152-062-28DBD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 26, 1973..	13.08	Mar. 28.....	12.79	Sept. 23.....	12.45
Oct. 16.....	13.05	May 7.....	12.55	Oct. 29.....	12.51
Nov. 21.....	12.91	June 17.....	12.07	Nov. 25.....	12.37
Jan. 7, 1974..	12.91	July 22.....	12.36	Dec. 30.....	12.13
Feb. 13.....	12.87	Aug. 19.....	12.37		

152-062-33DCB MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 27, 1973..	42.53	Mar. 28.....	42.38	Sept. 23.....	42.03
Oct. 16.....	42.57	May 7.....	42.25	Oct. 29.....	41.98
Nov. 21.....	42.53	June 17.....	41.95	Nov. 25.....	41.92
Jan. 7, 1974..	42.39	July 22.....	41.81	Dec. 30.....	41.50
Feb. 13.....	42.34	Aug. 19.....	42.00		

152-063-03ABA MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 25, 1973..	32.69	Mar. 28.....	33.03	Sept. 23.....	30.95
Oct. 16.....	32.85	May 7.....	32.36	Oct. 29.....	30.95
Nov. 21.....	32.72	June 17.....	30.84	Nov. 25.....	30.98
Jan. 7, 1974..	32.87	July 22.....	30.91	Dec. 30.....	31.00
Feb. 13.....	32.94	Aug. 16.....	30.96		

Depth to water, in feet below or (+) above land surface

152-063-13ABD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Sept. 25, 1973..	47.14	Mar. 28.....	43.65	Sept. 23.....	42.73
Oct. 16.....	46.14	May 7.....	43.19	Oct. 29.....	42.44
Nov. 21.....	45.01	June 17.....	42.68	Nov. 25.....	42.36
Jan. 7, 1974..	44.36	July 22.....	42.72	Dec. 30.....	42.12
Feb. 13.....	43.95	Aug. 16.....	42.81		

153-062-29CCC MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 27, 1974..	27.84	Nov. 27.....	27.76	Dec. 31.....	28.14
Oct. 31.....	27.62				

153-063-09CDD MP is top of 1½-inch plastic pipe 1.98 ft above lsd.

Sept. 11, 1973..	18.67	Mar. 28.....	18.04	Sept. 23.....	16.97
Oct. 17.....	18.23	May 7.....	17.76	Oct. 29.....	16.97
Nov. 19.....	18.04	June 17.....	16.74	Nov. 27.....	16.92
Jan. 7, 1974..	17.92	July 22.....	16.65	Dec. 30.....	16.98
Feb. 13.....	17.97	Aug. 16.....	16.80		

153-063-29ADD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	22.23	June 17.....	19.55	Sept. 27.....	19.22
Oct. 17.....	22.09	July 22.....	19.28	Oct. 29.....	18.84
May 9, 1974..	21.67	Aug. 16.....	19.27	Nov. 27.....	18.76

153-063-34BBC MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	31.82	July 22.....	28.98	Oct. 29.....	28.84
Oct. 16.....	31.70	Aug. 16.....	29.09	Nov. 25.....	28.83
June 19, 1974..	29.47	Sept. 23.....	29.01		

153-064-19AAB2 MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 27, 1973..	36.64	July 23.....	35.14	Oct. 31.....	33.95
June 22, 1974..	35.50	Aug. 15.....	35.12	Nov. 25.....	33.71

Depth to water, in feet below or (+) above land surface

153-064-19AAB3 MP is top of 4-inch plastic pipe 1.0 ft above lsd.

Date	Water Level	Date	Water Level	Date	Water Level
Sept. 25, 1973..	36.57	Feb. 28.....	35.98	Aug. 20.....	33.47
Oct. 5.....	36.43	Mar. 5.....	35.90	Aug. 25.....	33.28
Oct. 10.....	36.31	Mar. 10.....	36.20	Aug. 31.....	33.73
Oct. 15.....	36.17	Mar. 15.....	36.04	Sept. 5.....	33.68
Oct. 20.....	36.21	Mar. 20.....	36.04	Sept. 10.....	32.77
Oct. 25.....	36.17	Mar. 25.....	36.10	Sept. 15.....	33.05
Oct. 31.....	36.24	Mar. 31.....	35.96	Sept. 20.....	33.27
Nov. 5.....	35.98	Apr. 5.....	36.09	Sept. 25.....	32.81
Nov. 10.....	36.29	Apr. 10.....	36.08	Oct. 5.....	33.68
Nov. 15.....	36.22	Apr. 15.....	35.73	Oct. 10.....	33.36
Nov. 20.....	36.09	Apr. 20.....	35.31	Oct. 15.....	33.56
Nov. 25.....	36.03	Apr. 25.....	35.48	Oct. 20.....	33.55
Nov. 30.....	36.09	Apr. 30.....	35.75	Oct. 25.....	33.60
Dec. 5.....	35.99	May 5.....	35.67	Oct. 31.....	33.36
Dec. 15.....	36.14	May 10.....	35.62	Nov. 5.....	33.28
Dec. 20.....	36.05	May 15.....	35.65	Nov. 10.....	33.23
Dec. 25.....	36.07	May 20.....	35.67	Nov. 15.....	33.22
Dec. 31.....	35.99	May 25.....	35.67	Nov. 20.....	33.17
Jan. 5, 1974..	36.07	June 25.....	33.87	Nov. 25.....	33.25
Jan. 10.....	36.15	June 30.....	33.98	Nov. 30.....	33.39
Jan. 15.....	36.02	July 5.....	33.85	Dec. 5.....	33.14
Jan. 20.....	35.96	July 10.....	33.86	Dec. 10.....	32.97
Jan. 25.....	36.03	July 15.....	33.77	Dec. 15.....	33.06
Jan. 31.....	36.05	July 20.....	33.86	Dec. 20.....	32.89
Feb. 5.....	36.04	July 25.....	33.62	Dec. 25.....	32.95
Feb. 10.....	36.00	July 31.....	34.02	Dec. 30.....	32.77
Feb. 15.....	36.09	Aug. 5.....	33.84	Dec. 31.....	32.80
Feb. 20.....	35.98	Aug. 10.....	33.82		
Feb. 25.....	36.25	Aug. 15.....	33.50		

153-065-02CCC2 MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 23, 1974..	56.61	Oct. 31.....	56.33	Nov. 25.....	55.87
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153-065-03BBB MP is top of 1½-inch plastic pipe 1.92 ft above lsd.

Sept. 11, 1973..	34.64	Mar. 28.....	34.82	Aug. 14.....	31.60
Oct. 16.....	34.80	May 8.....	34.46	Sept. 23.....	31.56
Nov. 20.....	34.92	June 14.....	32.80	Oct. 31.....	32.45
Jan. 8, 1974..	34.86	June 19.....	32.58	Nov. 25.....	31.61
Feb. 14.....	34.84	July 24.....	31.80	Dec. 30.....	31.88

153-065-04CCD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 23, 1974..	22.13	Oct. 30.....	23.02	Nov. 25.....	22.57
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153-065-09BCD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 23, 1974..	14.34	Oct. 30.....	15.26	Nov. 25.....	14.79
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Depth to water, in feet below or (+) above land surface

153-065-09DDD2 MP is top of 1¼-inch plastic pipe 2.0 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Sept. 11, 1973..	35.39	Mar. 28.....	35.50	Sept. 23.....	32.45
Oct. 16.....	35.48	May 8.....	35.18	Oct. 31.....	33.30
Nov. 20.....	35.57	June 19.....	33.45	Nov. 25.....	32.65
Jan. 8, 1974..	35.54	July 24.....	32.54	Dec. 30.....	32.70
Feb. 14.....	35.53	Aug. 14.....	32.49		

153-065-10BBB MP is top of 1¼-inch plastic pipe 2.0 ft above lsd.

Sept. 23, 1974..	33.60	Oct. 31.....	34.49	Nov. 25.....	34.08
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153-065-11ADD MP is top of 1¼-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	42.59	May 8.....	42.17	Aug. 14.....	40.60
Oct. 16.....	42.61	June 14.....	41.41	Sept. 23.....	40.13
Nov. 20.....	42.53	June 19.....	41.28	Oct. 31.....	39.87
Mar. 29, 1974..	42.26	July 24.....	40.82	Nov. 25.....	39.72

153-065-14CCB MP is top of 1¼-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	26.42	June 19.....	24.31	Oct. 31.....	25.04
Oct. 16.....	26.44	July 24.....	23.73	Nov. 25.....	23.97
Nov. 20.....	26.55	Aug. 14.....	23.74		
May 8, 1974..	26.04	Sept. 23.....	23.78		

154-062-06DDD MP is top of 1¼-inch plastic pipe 2.0 ft above lsd.

Sept. 24, 1974..	7.56	Oct. 30.....	8.06	Nov. 26.....	8.25
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154-062-07DDD MP is top of 1¼-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	7.83	Mar. 29.....	8.28	Sept. 24.....	4.92
Oct. 18.....	7.43	May 7.....	8.32	Oct. 30.....	5.17
Nov. 19.....	6.94	June 18.....	5.17	Nov. 26.....	5.25
Jan. 7, 1974..	7.02	July 23.....	4.47	Dec. 31.....	5.67
Feb. 13.....	7.56	Aug. 16.....	4.58		

154-063-21AAA MP is top of 1¼-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	6.80	June 18.....	3.26	Oct. 30.....	3.22
Oct. 17.....	6.38	July 23.....	2.46	Nov. 26.....	3.24
Nov. 19.....	6.00	Aug. 16.....	2.53		
Mar. 29, 1974..	6.82	Sept. 26.....	2.88		



Depth to water, in feet below or (+) above land surface

154-063-27BBB MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Sept. 26, 1974..	10.50	Oct. 30.....	10.75	Nov. 26.....	10.70

154-064-12CCC MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	15.45	Mar. 29.....	15.73	Sept. 26.....	13.31
Oct. 17.....	15.29	May 7.....	14.55	Oct. 30.....	13.54
Nov. 19.....	15.27	June 18.....	12.28	Nov. 26.....	13.86
Jan. 7, 1974..	15.44	July 23.....	12.45	Dec. 31.....	14.23
Feb. 13.....	15.77	Aug. 16.....	12.93		

154-065-07CDD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	33.21	Mar. 28.....	33.63	Aug. 20.....	30.97
Oct. 17.....	33.07	May 8.....	33.43	Sept. 25.....	31.03
Nov. 20.....	32.96	June 14.....	31.70	Oct. 31.....	31.08
Jan. 8, 1974..	33.02	June 18.....	31.57	Nov. 26.....	30.97
Feb. 14.....	33.33	July 24.....	30.99	Dec. 31.....	31.07

154-065-15CCC MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	38.90	May 8.....	39.54	Aug. 20.....	36.59
Oct. 17.....	39.18	June 14.....	38.51	Sept. 25.....	36.22
Nov. 20.....	39.27	June 18.....	38.32	Oct. 31.....	36.18
Mar. 28, 1974..	39.48	July 24.....	37.23	Nov. 26.....	36.05

154-065-17AAA MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 25, 1974..	24.37	Oct. 31.....	24.38	Nov. 26.....	24.32
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154-065-21CCC MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	44.98	Mar. 28.....	45.27	Aug. 20.....	42.30
Oct. 17.....	45.03	May 8.....	45.11	Sept. 25.....	42.06
Nov. 20.....	45.20	June 14.....	43.72	Oct. 31.....	42.54
Jan. 8, 1974..	45.23	June 18.....	43.62	Nov. 26.....	42.00
Feb. 14.....	45.28	July 24.....	42.76	Dec. 31.....	42.29

154-065-28DAB MP is top of 1½-inch plastic pipe 3.10 ft above lsd.

Sept. 25, 1974..	38.59	Oct. 31.....	38.21	Nov. 25.....	38.05
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154-065-28DCD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 25, 1974..	18.18	Oct. 31.....	18.67	Nov. 25.....	18.51
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Depth to water, in feet below or (+) above land surface

154-065-32CCC MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Sept. 11, 1973..	29.66	Feb. 14.....	30.09	Sept. 25.....	26.70
Oct. 16.....	29.90	Mar. 28.....	30.09	Oct. 31.....	27.22
Nov. 20.....	30.03	July 24.....	27.13	Nov. 26.....	27.05
Jan. 8, 1974..	30.09	Aug. 20.....	26.91	Dec. 31.....	26.95

154-065-35AAA MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	11.44	June 14.....	9.51	Sept. 23.....	9.45
Oct. 17.....	11.47	June 19.....	9.38	Oct. 31.....	9.80
Nov. 20.....	11.41	July 24.....	8.92	Nov. 25.....	9.87
May 8, 1974..	11.32	Aug. 14.....	9.12		

154-065-35BBB MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 23, 1974..	46.43	Oct. 31.....	46.56	Nov. 25.....	46.37
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154-066-01CCC MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	14.94	Mar. 28.....	15.40	Sept. 25.....	12.81
Oct. 17.....	14.80	May 8.....	15.17	Oct. 31.....	12.86
Nov. 20.....	14.69	June 18.....	13.17	Nov. 26.....	12.79
Jan. 8, 1974..	14.80	July 24.....	12.70	Dec. 31.....	12.91
Feb. 14.....	15.10	Aug. 20.....	12.74		

154-066-09DDD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 25, 1974..	+0.53	Oct. 31.....	+0.62
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154-066-15DDD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	1.68	May 8, 1974..	1.24	Aug. 20.....	+0.52
Oct. 17.....	1.35	June 18.....	+1.08	Sept. 25.....	+ .28
Nov. 20.....	1.22	July 24.....	+ .90	Oct. 31.....	+ .33

154-066-23DDD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	27.79	May 8.....	27.51	Sept. 25.....	25.77
Oct. 17.....	27.52	June 18.....	25.56	Oct. 31.....	24.78
Nov. 20.....	27.36	July 24.....	25.52	Nov. 26.....	25.68
Jan. 8, 1974..	27.49	Aug. 20.....	25.60	Dec. 31.....	25.79

154-066-25DDA MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 25, 1974..	20.90	Oct. 31.....	21.31	Nov. 26.....	21.25
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Depth to water, in feet below or (+) above land surface

154-066-36DCD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Sept. 11, 1973..	28.48	June 18.....	27.83	Oct. 31.....	26.48
Oct. 16.....	28.41	July 24.....	27.30	Nov. 26.....	26.42
Nov. 20.....	28.48	Aug. 20.....	27.00		
May 8, 1974..	28.59	Sept. 25.....	26.63		

155-062-06DDD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	5.38	Mar. 29.....	5.45	Sept. 24.....	2.57
Oct. 18.....	5.13	May 7.....	5.56	Oct. 30.....	2.71
Nov. 19.....	5.05	June 18.....	3.80	Nov. 26.....	2.84
Jan. 8, 1974..	4.97	July 23.....	2.56	Dec. 31.....	3.08
Feb. 14.....	5.20	Aug. 16.....	2.53		

155-062-18AAA2 MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 24, 1974..	4.09	Oct. 30.....	4.33	Nov. 26.....	4.49
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155-063-22CCC MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 24, 1974..	13.75	Oct. 30.....	14.15	Nov. 26.....	14.39
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155-063-25AAA MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	10.56	May 7.....	10.44	Sept. 24.....	7.80
Oct. 18.....	10.33	June 18.....	8.99	Oct. 30.....	7.94
Nov. 19.....	10.30	July 23.....	8.02	Nov. 26.....	8.03
Mar. 29, 1974..	10.30	Aug. 16.....	7.74		

155-064-03AAA MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	5.60	Mar. 29.....	8.69	Sept. 26.....	7.04
Oct. 17.....	4.19	May 9.....	5.50	Oct. 30.....	7.43
Nov. 19.....	4.82	June 18.....	2.27	Nov. 26.....	7.48
Jan. 8, 1974..	6.40	July 23.....	4.39	Dec. 31.....	8.05
Feb. 14.....	8.03	Aug. 16.....	6.07		

155-065-08DDD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	9.30	June 18.....	4.71	Oct. 30.....	7.78
Oct. 17.....	8.84	July 23.....	5.73	Nov. 26.....	7.85
Nov. 20.....	8.78	Aug. 20.....	6.96		
May 8, 1974..	8.80	Sept. 25.....	7.52		

Depth to water, in feet below or (+) above land surface

155-065-30BBB MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Sept. 25, 1974..	10.29	Oct. 30.....	10.48	Nov. 26.....	10.46

155-066-04CCC MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 25, 1974..	5.71	Oct. 30.....	6.17	Nov. 26.....	6.24
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155-066-09AAA MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 25, 1974..	2.66	Oct. 30.....	3.02	Nov. 26.....	3.16
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155-066-11AAA MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 25, 1974..	8.56	Oct. 30.....	8.32	Nov. 26.....	8.16
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155-066-26CCC2 MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	15.10	Mar. 28.....	16.18	Sept. 25.....	12.49
Oct. 17.....	15.25	May 8.....	16.24	Oct. 31.....	12.61
Nov. 20.....	15.28	June 18.....	14.11	Nov. 26.....	12.77
Jan. 8, 1974..	15.45	July 23.....	12.80	Dec. 31.....	12.97
Feb. 14.....	15.68	Aug. 20.....	12.40		

155-066-34CCC MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 25, 1974..	17.21	Oct. 31.....	17.24	Nov. 26.....	17.19
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156-060-29CCB MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

June 18, 1971..	3.80	Sept. 11.....	4.30	Aug. 16.....	3.12
July 21.....	2.24	Oct. 18.....	2.84	Sept. 24.....	3.91
May 7, 1973..	4.34	Nov. 6.....	2.52	Oct. 30.....	4.09
May 24.....	3.99	May 9, 1974..	2.55	Nov. 26.....	4.12
June 12.....	3.41	June 18.....	.40		
July 26.....	4.08	July 23.....	1.94		

156-061-34AAA MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

July 21, 1971..	7.27	Sept. 11.....	8.57	July 23.....	5.60
May 7, 1973..	8.58	Oct. 18.....	8.04	Aug. 16.....	6.06
May 24.....	8.51	Nov. 6.....	7.91	Sept. 24.....	6.58
June 12.....	8.52	May 9, 1974..	6.28	Oct. 30.....	6.90
July 26.....	8.77	June 18.....	5.12	Nov. 26.....	7.03

Depth to water, in feet below or (+) above land surface

156-051-35AAA2 MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
June 17, 1971..	3.30	Sept. 11.....	4.72	Aug. 16.....	3.32
July 21.....	2.18	Oct. 18.....	3.97	Sept. 24.....	3.69
May 7, 1973..	3.88	Nov. 6.....	3.84	Oct. 30.....	3.85
May 24.....	3.89	May 9, 1974..	3.77	Nov. 26.....	3.84
June 12.....	3.89	June 18.....	2.12		
July 26.....	4.48	July 23.....	2.91		

156-062-20BBB MP is top of 4-inch plastic pipe 1.0 ft above lsd.

Aug. 10, 1973..	13.41	Feb. 15.....	13.22	July 25.....	8.73
Oct. 5.....	13.09	Feb. 20.....	13.22	July 31.....	8.86
Oct. 10.....	12.97	Feb. 25.....	13.41	Aug. 5.....	8.89
Oct. 15.....	12.96	Feb. 28.....	13.41	Aug. 10.....	9.06
Oct. 20.....	12.98	Mar. 5.....	13.39	Aug. 15.....	9.18
Oct. 25.....	12.89	Mar. 10.....	13.61	Aug. 20.....	9.23
Oct. 31.....	12.85	Mar. 15.....	13.70	Aug. 25.....	9.43
Nov. 5.....	12.93	Mar. 20.....	13.78	Aug. 31.....	9.58
Nov. 10.....	12.91	Mar. 25.....	13.86	Sept. 5.....	9.72
Nov. 15.....	12.78	Mar. 31.....	13.95	Sept. 10.....	9.84
Nov. 20.....	12.80	Apr. 5.....	14.06	Sept. 15.....	9.96
Nov. 25.....	12.69	Apr. 10.....	14.18	Sept. 20.....	10.10
Nov. 30.....	12.68	Apr. 15.....	14.28	Oct. 5.....	10.39
Dec. 5.....	12.71	Apr. 20.....	14.24	Oct. 10.....	10.43
Dec. 10.....	12.70	Apr. 25.....	14.10	Oct. 15.....	10.52
Dec. 15.....	12.68	Apr. 30.....	13.92	Oct. 20.....	10.65
Dec. 20.....	12.74	May 5.....	13.78	Oct. 25.....	10.76
Dec. 25.....	12.70	May 10.....	13.55	Oct. 31.....	10.78
Dec. 31.....	12.69	May 15.....	13.31	Nov. 5.....	10.85
Jan. 5.....	12.76	May 20.....	13.06	Nov. 10.....	10.91
Jan. 10.....	12.80	May 25.....	12.77	Nov. 15.....	10.98
Jan. 15.....	12.75	May 31.....	12.10	Nov. 20.....	11.00
Jan. 20.....	12.80	June 5.....	11.21	Nov. 25.....	11.11
Jan. 25.....	12.85	June 10.....	10.50	Nov. 28.....	11.13
Jan. 31.....	12.90	June 15.....	9.87	Dec. 30.....	11.51
Feb. 5.....	13.04	June 20.....	9.46	Dec. 31.....	11.51
Feb. 10.....	13.09	June 25.....	9.12		

156-063-10CDD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 24, 1974..	8.17	Oct. 30.....	8.36	Nov. 26.....	8.42
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156-065-22DDD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	9.13	June 18.....	6.26	Oct. 30.....	6.40
Oct. 17.....	7.98	July 23.....	6.22	Nov. 26.....	6.33
Nov. 20.....	7.43	Aug. 16.....	6.50		
May 8, 1974..	6.93	Sept. 24.....	6.53		

Depth to water, in feet below or (+) above land surface

156-066-12CCC MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Sept. 11, 1973..	3.84	July 23, 1974..	0.78	Oct. 30.....	1.52
Oct. 17.....	3.59	Aug. 21.....	.56	Nov. 26.....	1.97
Nov. 20.....	3.63	Sept. 25.....	1.40		

156-066-31DDD MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	8.39	Mar. 28.....	7.92	Oct. 30.....	5.18
Oct. 17.....	7.65	May 8.....	3.30	Nov. 26.....	5.31
Nov. 20.....	7.63	July 23.....	2.00	Dec. 31.....	5.66
Jan. 8, 1974..	8.20	Aug. 21.....	3.64		
Feb. 14.....	8.57	Sept. 25.....	4.66		

156-066-34BBB MP is top of 1½-inch plastic pipe 2.50 ft above lsd.

Sept. 11, 1973..	+2.0	Oct. 17.....	+2.5
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157-061-13DAA1 MP is top of 1½-inch plastic pipe 2.80 ft above lsd.

Sept. 11, 1973..	13.86	June 18, 1974..	9.83	Sept. 24.....	11.87
Oct. 5.....	10.83	July 23.....	10.56	Oct. 30.....	11.79
Nov. 6.....	13.57	Aug. 16.....	11.34	Nov. 26.....	11.51

157-061-13DAB1 MP is top of 1½-inch plastic pipe 2.80 ft above lsd.

Sept. 10, 1973..	10.89	Jan. 8, 1974..	10.81	Nov. 26.....	4.86
Sept. 11.....	10.93	Feb. 14.....	11.03	Dec. 31.....	8.21
Oct. 18.....	10.65	Mar. 29.....	13.26		
Nov. 6.....	10.44	Oct. 30.....	7.14		

157-062-28BBB MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 11, 1973..	7.24	July 23.....	1.79	Nov. 26.....	4.28
Oct. 18.....	6.01	Aug. 16.....	2.65	Dec. 31.....	5.04
Nov. 6.....	4.91	Sept. 24.....	3.54		
June 18, 1974..	1.91	Oct. 30.....	4.07		

157-063-18AAA MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 24, 1974..	6.05	Oct. 30.....	5.92	Nov. 26.....	6.15
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157-063-27CCC MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

Sept. 24, 1974..	5.41	Oct. 30.....	5.48	Nov. 26.....	5.41
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Depth to water, in feet below or (+) above land surface

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157-063-34ABA2 MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

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Date	Water level	Date	Water level	Date	Water level
Sept. 24, 1974..	9.03	Oct. 30.....	9.16	Nov. 26.....	9.13

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157-064-03DDD MP is top of 1½-inch plastic pipe 0.0 ft above lsd.

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Sept. 24, 1974..	12.74	Oct. 30.....	12.66	Nov. 26.....	12.57
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158-063-32AAA MP is top of 1½-inch plastic pipe 2.0 ft above lsd.

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Sept. 11, 1973..	0.18	May 9, 1974..	0.04	Aug. 16.....	+0.21
Oct. 17.....	+ .09	June 18.....	+ .60	Sept. 24.....	+ .10
Nov. 6.....	+ .19	July 23.....	+ .42	Oct. 30.....	+ .08

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TABLE 3.--Logs of wells and test holes

EXPLANATION

Potential given in millivolts (MV)                      Depths shown are in feet below  
Resistance in ohms.    land surface.  
Electric logs are uncalibrated.

151-062-03ADD  
Test hole 337  
(Log modified from Paulson and Akin, 1964, p. 64)

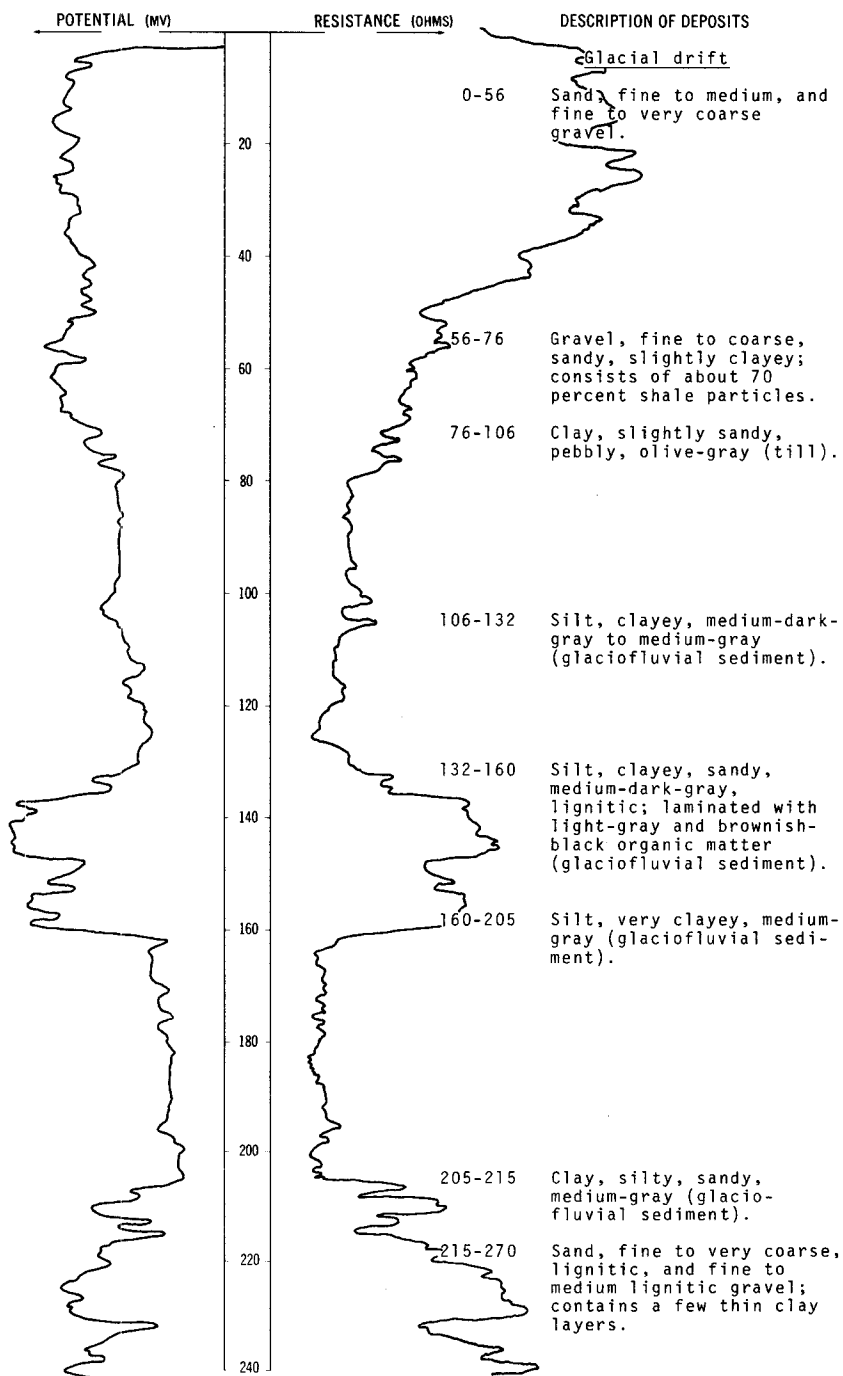
Altitude: 1611 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-brown; silt and clay, sandy and gravelly-----	27	28
	Silt and clay, light-brown-----	9	37
	Silt and clay, gray-----	22	59
	Sand, coarse; gravel, fine, clayey, gray-----	6	65
	Till, gray-----	33	98
	Shale, gray (block)-----	42	140



LOCATION: 151-062-03DDD  
 ALTITUDE: 1530  
 (FT, MSL)

DATE DRILLED: August 1973  
 DEPTH: 380  
 (FT)



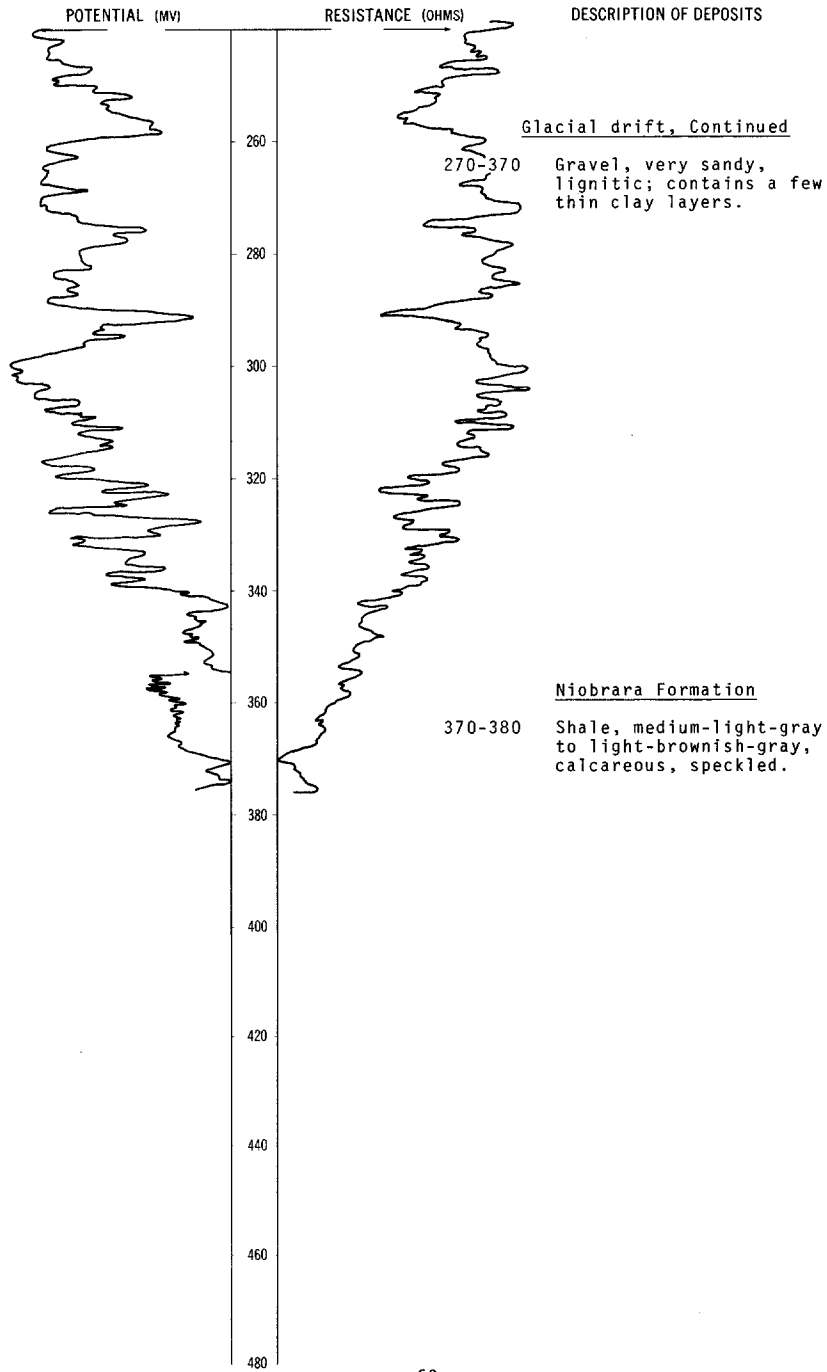
NDSWC 8858, Continued

LOCATION: 151-062-03DDD

DATE DRILLED: August 1973

ALTITUDE: 1530  
(FT, MSL)

DEPTH: 380  
(FT)

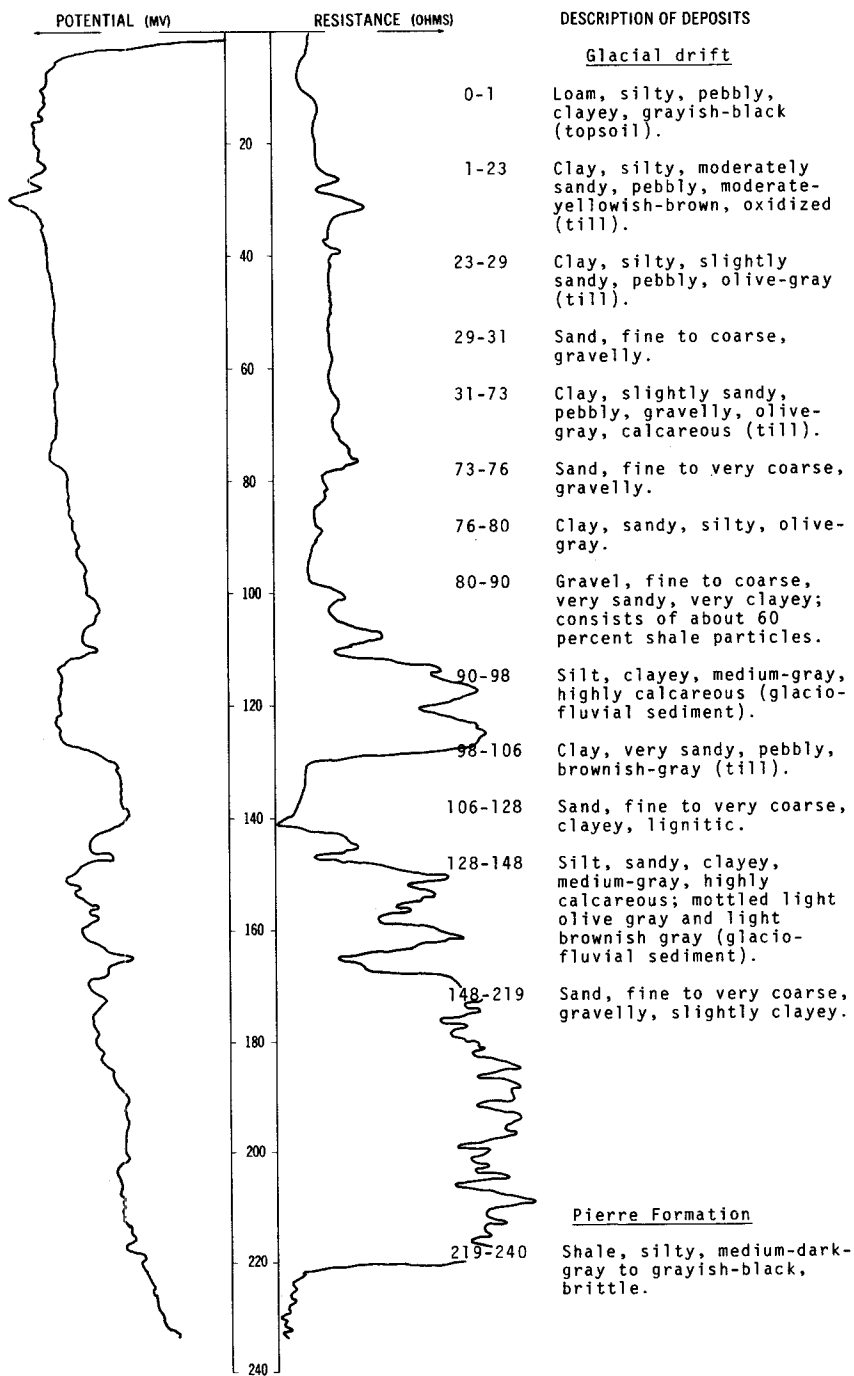


LOCATION: 151-062-09ABB

DATE DRILLED: August 1973

ALTITUDE: 1495  
(FT, MSL)

DEPTH: 240  
(FT)



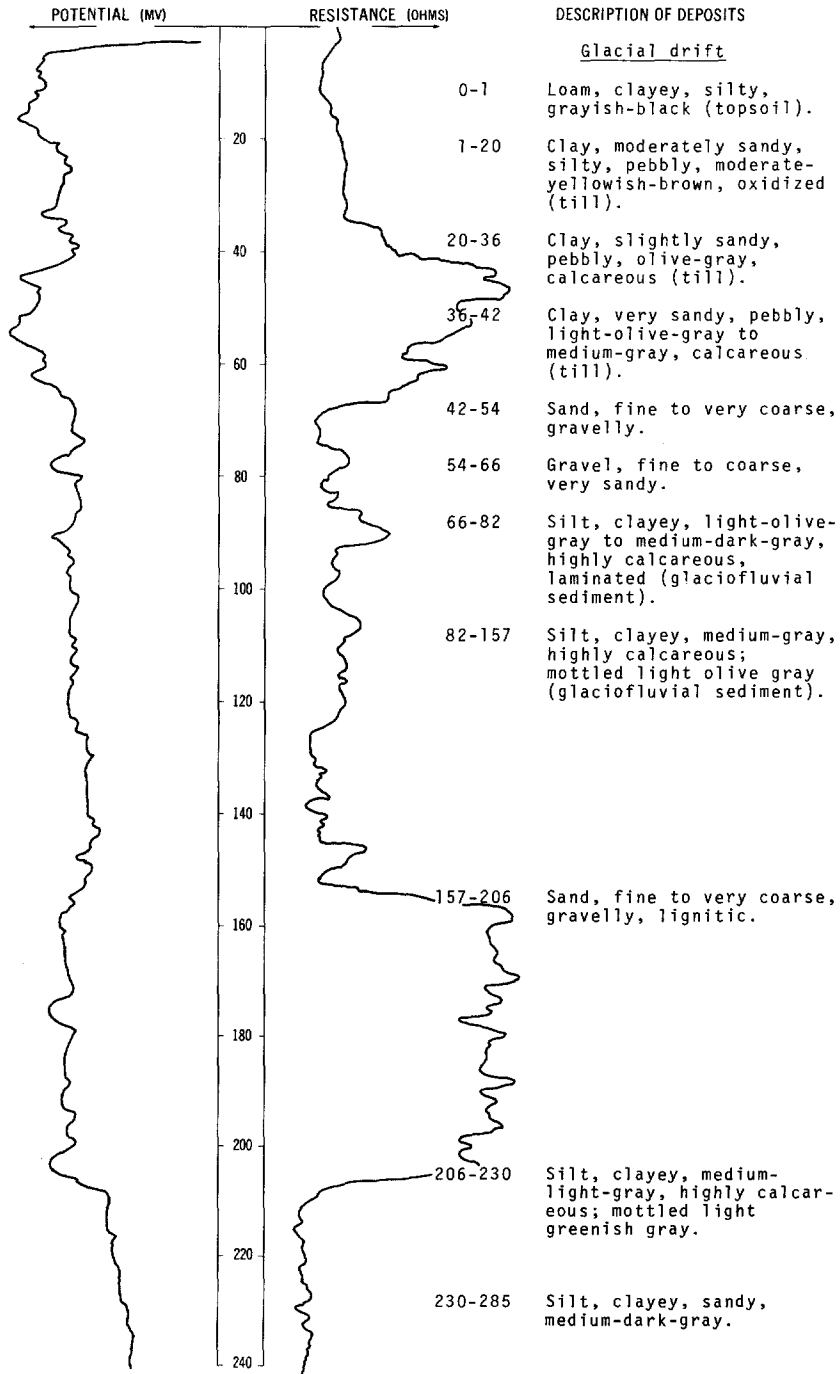
NDSWC 8853

LOCATION: 152-062-07ACA1

DATE DRILLED: August 1973

ALTITUDE: 1494  
(FT, MSL)

DEPTH: 300  
(FT)



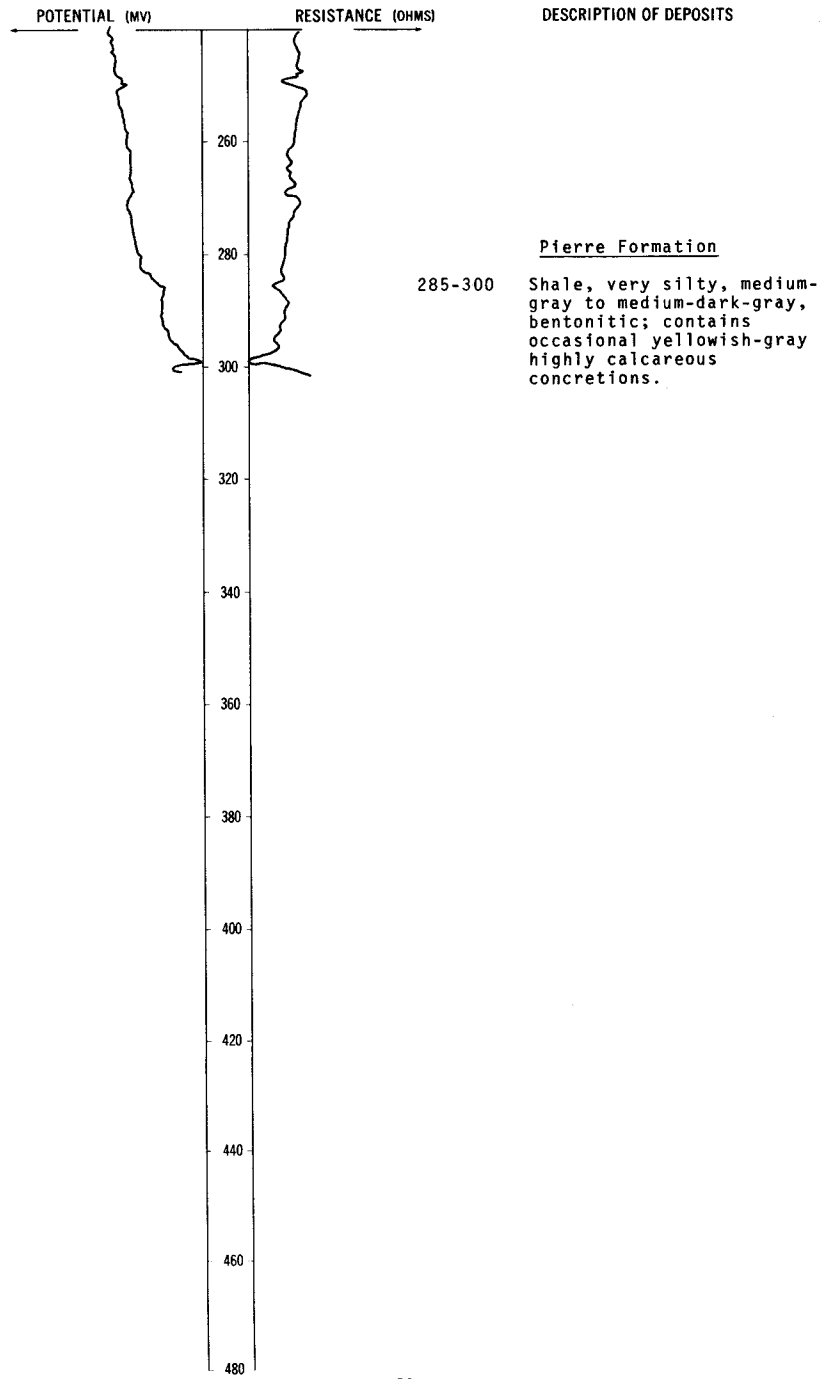
NDSWC 8853, Continued

LOCATION: 152-062-07ACA1

DATE DRILLED: August 1973

ALTITUDE: 1494  
(FT, MSL)

DEPTH: 300  
(FT)



152-062-12DAD  
 USAF 103

Altitude: 1492 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Silt, clayey, black-----	2	2
	Clay, sandy, silty, slightly gravelly, brown-----	12	14
	Clay, sandy, silty, slightly gravelly, gray-----	28	42
	Sand, fine, very silty, clayey, gray-----	7	49
	Silt and shale; angular fragments of dark-gray shale in a matrix of dense, clayey silt-----	9	58
Pierre Formation:			
	Shale, dark-gray, broken, highly fractured; contains crushed zones with clayey matrix-----	44	102
	Shale, dark-gray, partly silty, blocky, massive, highly fractured-----	28	130

152-062-15BAB  
 NDSWC 8810

Altitude: 1480 feet

Glacial drift:			
	Sand, fine to very coarse, very gravelly, slightly clayey, light-brown, oxidized-----	10	10
	Clay, moderately silty, slightly sandy, pebbly, olive-gray, calcareous (till)-----	10	20
	Gravel, fine, very sandy-----	10	30
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured, brittle-----	30	60

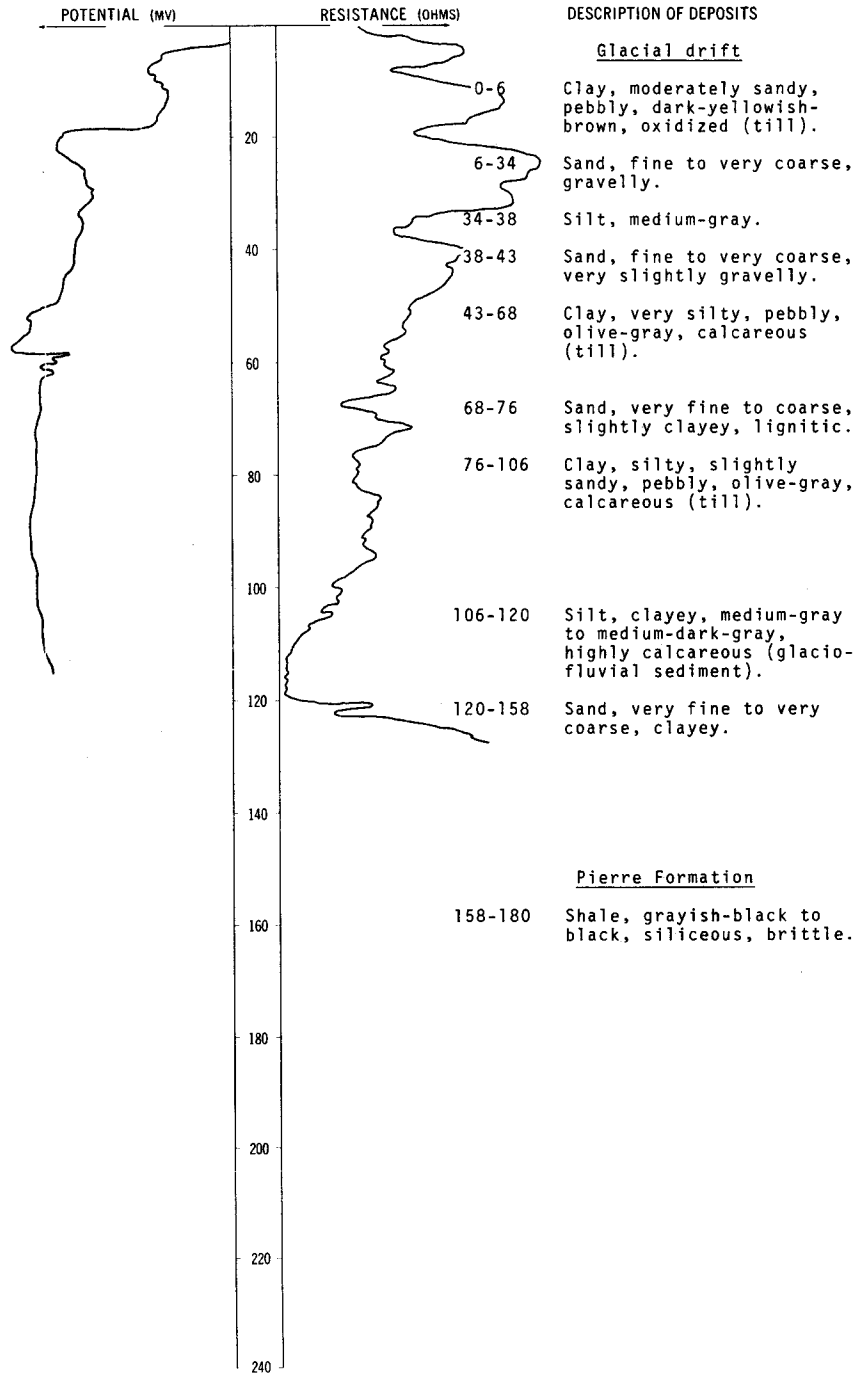
NDSWC 8854

LOCATION: 152-062-21DBD

DATE DRILLED: August 1973

ALTITUDE: 1446  
(FT, MSL)

DEPTH: 180  
(FT)

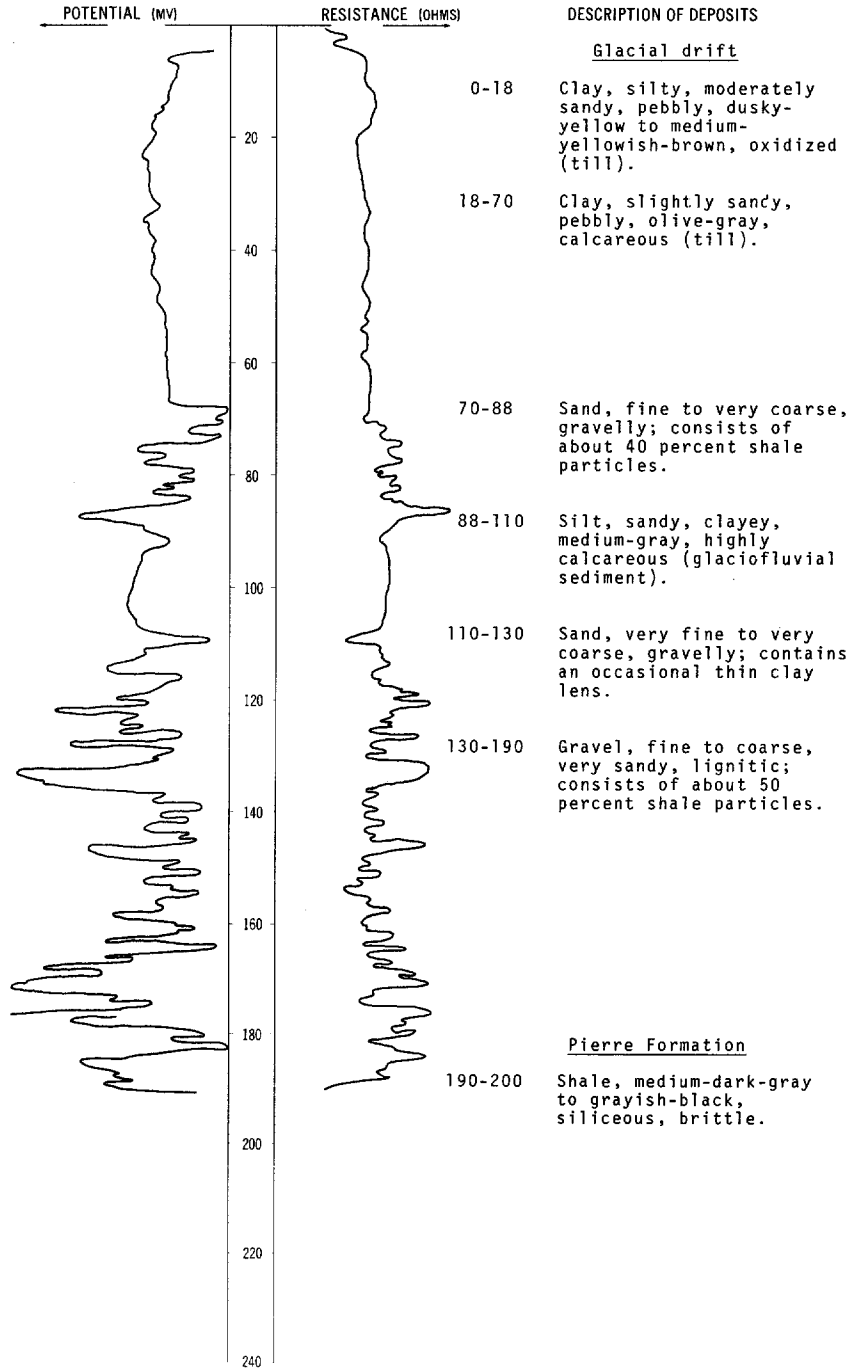


LOCATION: 152-062-27AAA

DATE DRILLED: August 1973

ALTITUDE: 1448  
(FT, MSL)

DEPTH: 200  
(FT)



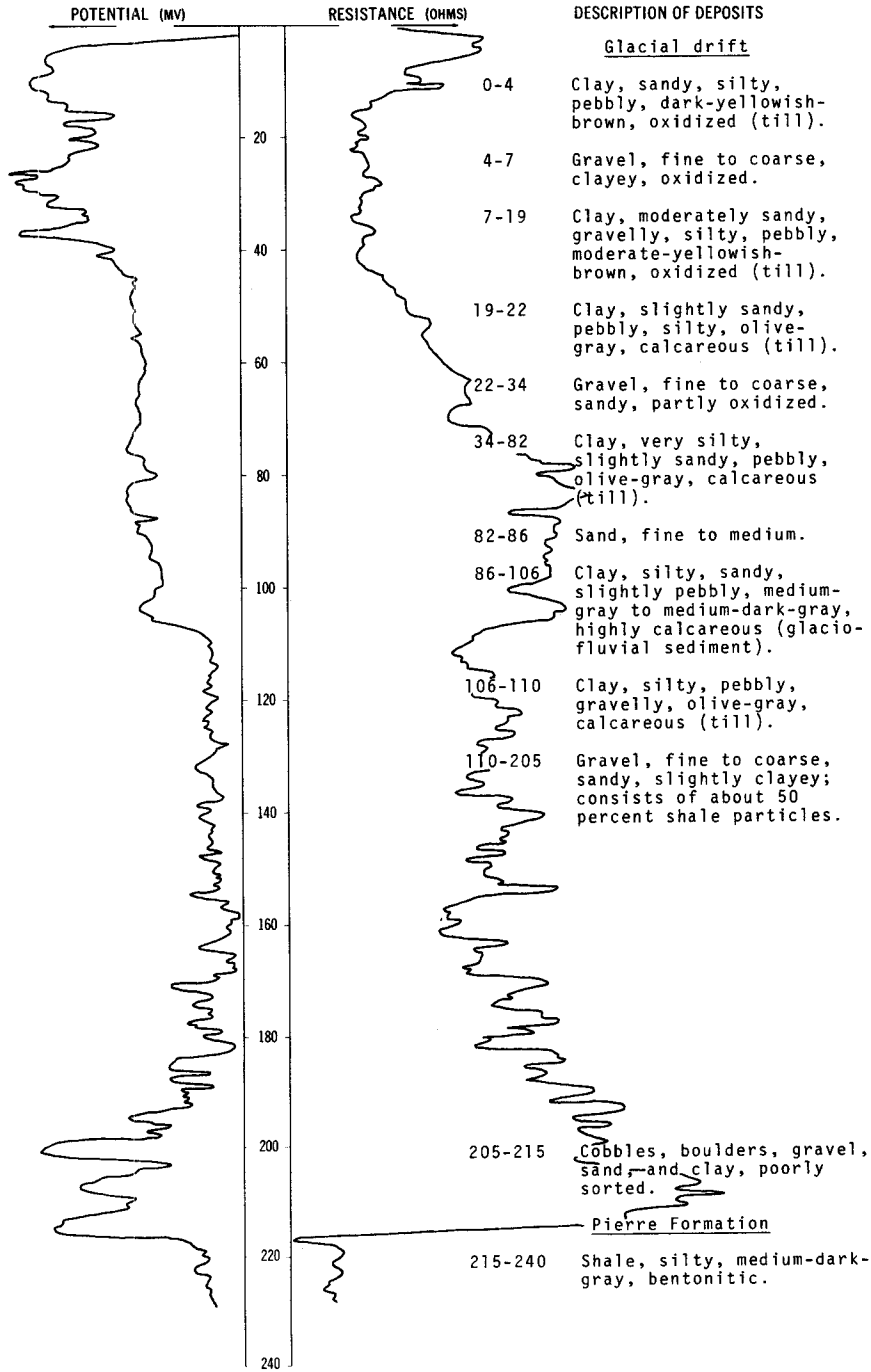


LOCATION: 152-062-28DBD

DATE DRILLED: August 1973

ALTITUDE: 1445  
(FT, MSL)

DEPTH: 240  
(FT)



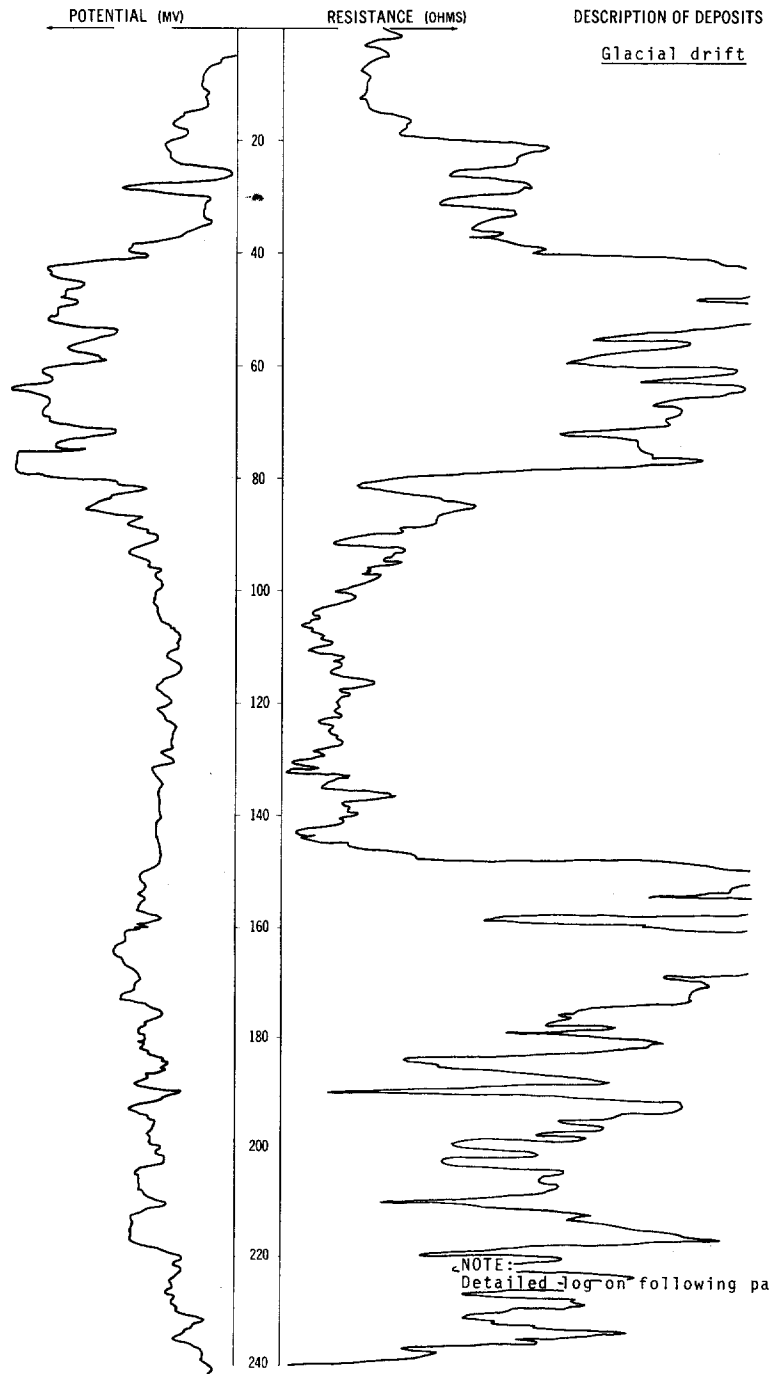
NDSWC 8856

LOCATION: 152-062-33DCB

DATE DRILLED: August 1973

ALTITUDE: 1488  
(FT, MSL)

DEPTH: 380  
(FT)

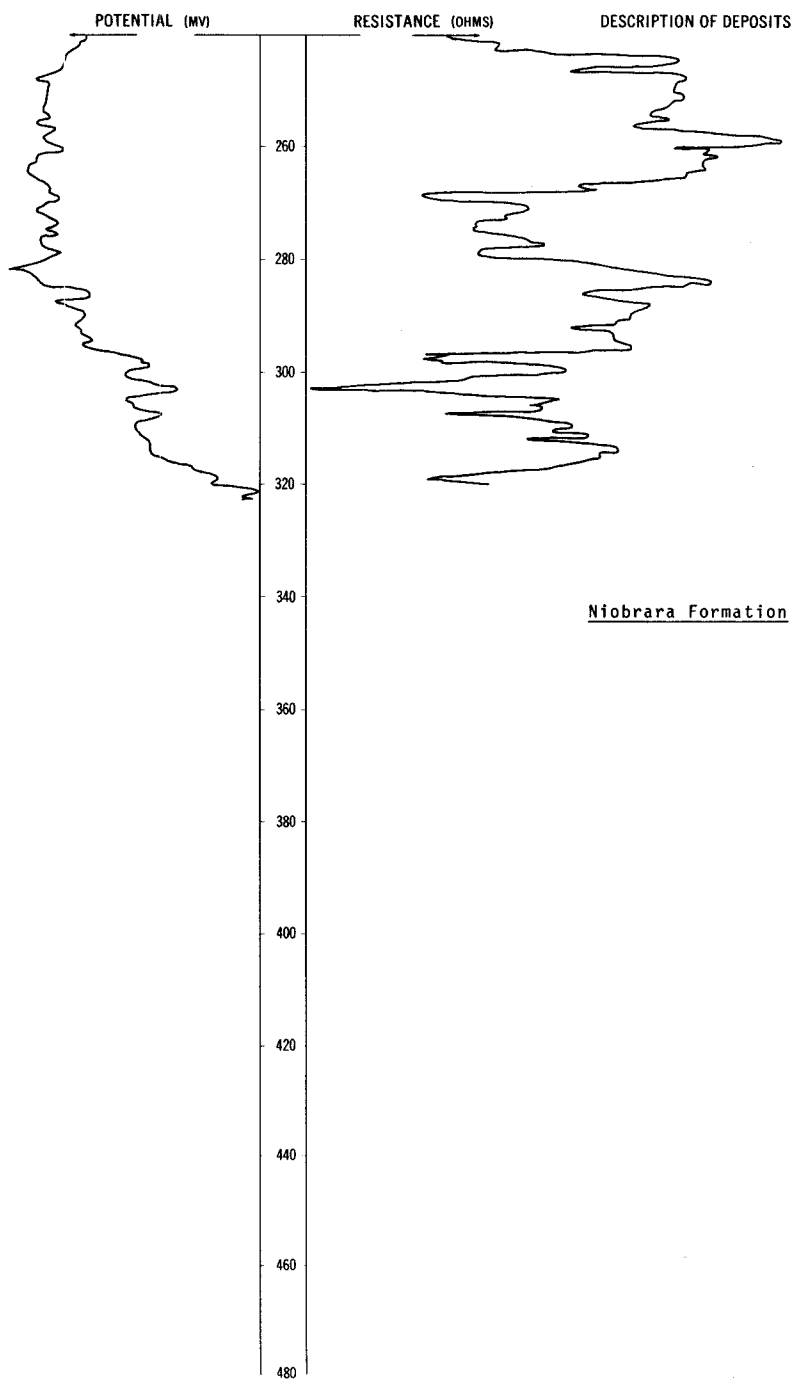


LOCATION: 152-062-33DCB

DATE DRILLED: August 1973

ALTITUDE: 1488  
(FT, MSL)

DEPTH: 380  
(FT)



152-062-33DCB, Continued  
NDSWC 8856

Altitude: 1488 feet

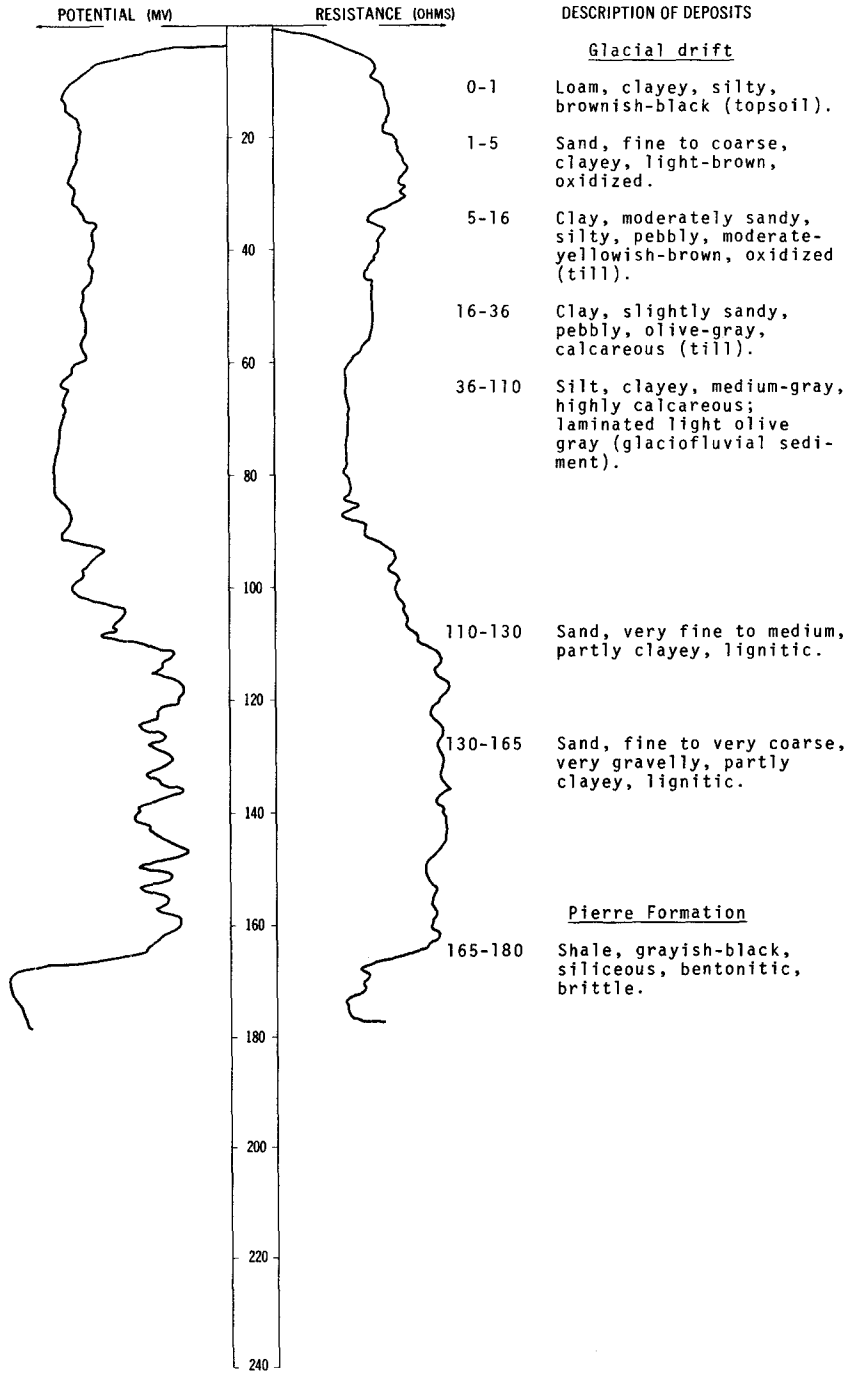
<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Silt, clayey, sandy, moderate-yellowish-brown, oxidized (till)-----	6	6
	Clay, silty, moderately sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	12	18
	Clay, moderately silty, slightly sandy, pebbly, olive-gray, calcareous (till)-----	4	22
	Clay, very sandy, slightly pebbly, dark-yellowish-brown, oxidized (till)-----	5	27
	Clay, very sandy, slightly pebbly, olive-gray, calcareous (till)-----	10	37
	Sand, very fine to coarse, slightly clayey, lignitic-----	43	80
	Silt, clayey, medium-gray, highly calcareous; mottled light olive gray (glaciofluvial sediment)-----	66	146
	Sand, very fine to medium, slightly clayey, lignitic-----	11	157
	Silt, clayey, medium-gray, highly calcareous; mottled light olive gray; contains occasional thin sand layers (glaciofluvial sediment)-----	3	160
	Sand, fine to very coarse, slightly clayey; clay content increases with depth below 266 feet; sand becomes coarser with depth-----	184	344
Niobrara Formation:			
	Shale, medium-gray to brownish-gray, slightly calcareous; white speckled-----	36	380

LOCATION: 152-063-03ABA

DATE DRILLED: August 1973

ALTITUDE: 1461  
(FT, MSL)

DEPTH: 180  
(FT)

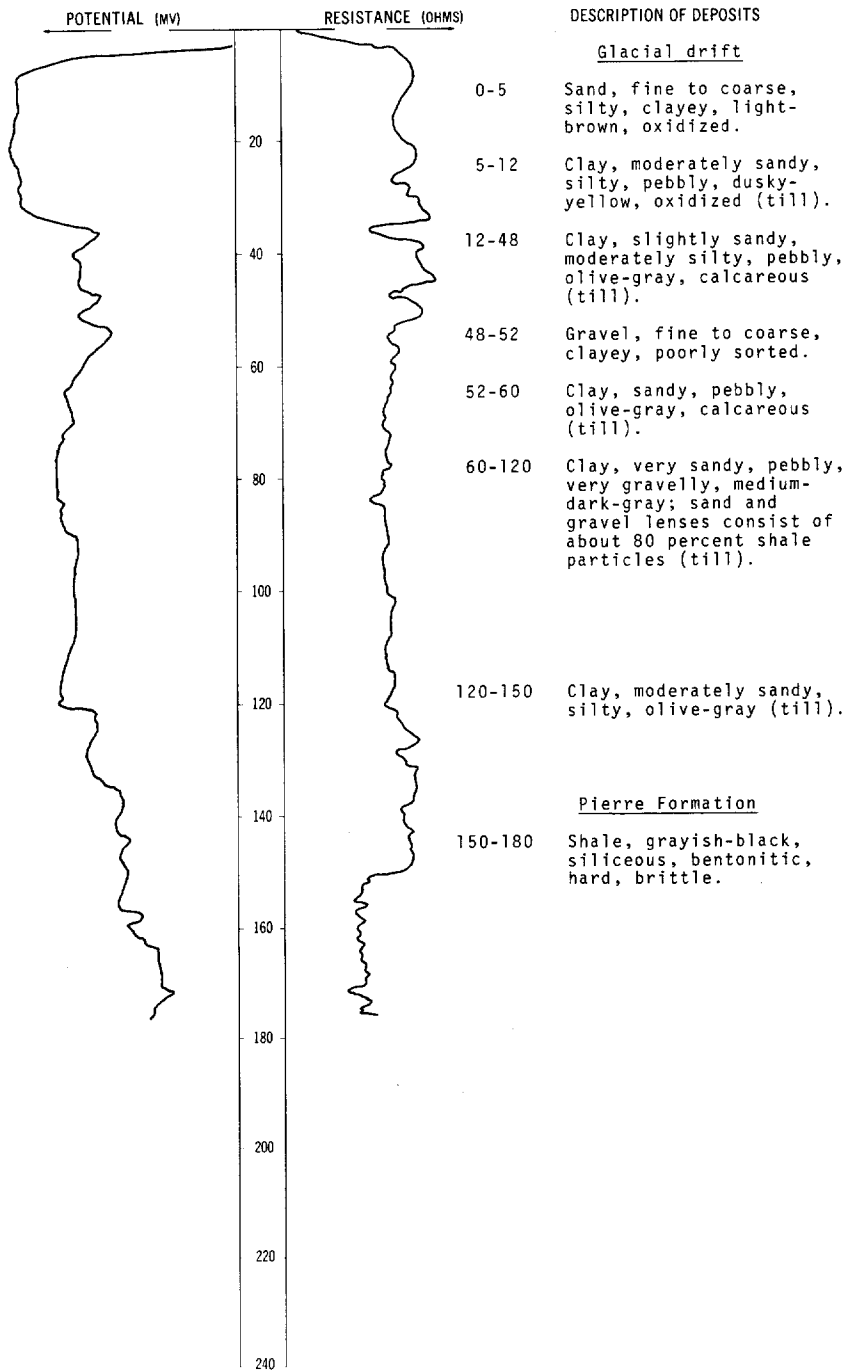


LOCATION: 152-063-12BAB

ALTITUDE: 1442  
(FT, MSL)

DATE DRILLED: August 1973

DEPTH: 180  
(FT)



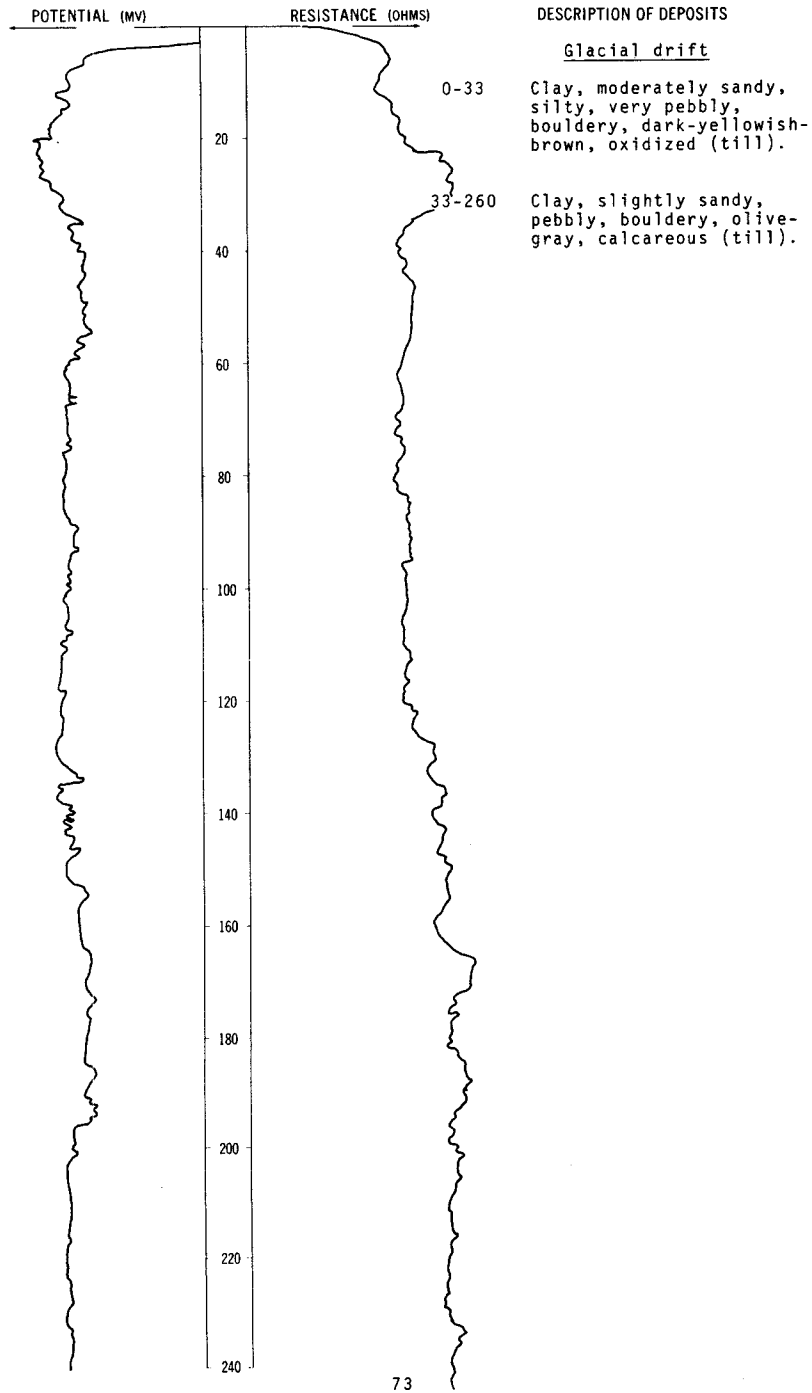
NDSWC 8852

LOCATION: 152-063-13ABD

DATE DRILLED: August 1973

ALTITUDE 1469  
(FT, MSL)

DEPTH: 360  
(FT)



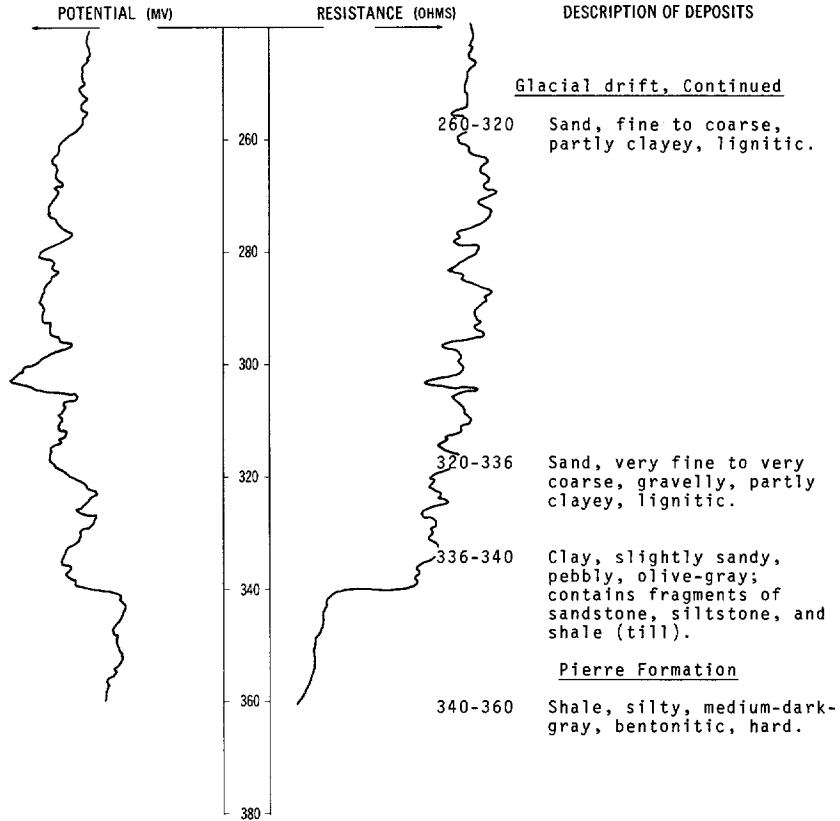
NDSWC 8852, Continued

LOCATION: 152-063-13ABD

DATE DRILLED: August 1973

ALTITUDE: 1469  
(FT, MSL)

DEPTH: 360  
(FT)



153-061-03BBB  
NDSWC 8806

Altitude: 1512 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, clayey, silty, pebbly, black (topsoil)-----	1	1
	Clay, moderately sandy, moderately silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	20	21
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	8	29
	Clay, sandy, pebbly, gravelly, cobbly, olive-gray, calcareous (till)-----	12	41
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle---	19	60



153-061-08CCC  
NDSWC 8807

Altitude: 1500 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, clayey, silty, pebbly, black (topsoil)-----	1	1
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	14	15
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	25	40
	Clay, very sandy, pebbly, gravelly, olive-gray-----	6	46
Pierre Formation:			
	Shale, grayish-black, siliceous, bentonitic, brittle-----	14	60

153-061-14CAC  
USAF 2031

Altitude: 1520 feet

Glacial drift:			
	Sand, clayey, dark-brown-----	3	3
	Clay, silty, sandy, slightly gravelly, brown-----	17	20
Pierre Formation:			
	Shale, dark-gray, highly fractured-----	16	36
	Shale, clayey, gray, moderately soft-----	2	38
	Shale, dark-gray, highly fractured-----	16	54
	Shale and silt, dark-gray; moderately hard to hard shale fragments in a very dense clayey silt and crushed shale matrix-----	23	77
	Shale, dark-gray, highly fractured, partly crushed-----	31	108
	Shale, dark-gray, highly fractured, brittle-----	22	130

153-061-25BBA  
(Log modified from Carl Ringdahl Water Well Drilling Co.)

Altitude: 1536 feet

Glacial drift:			
	Topsoil, clayey, yellow-----	24	24
	Clay, blue-----	13	37
	Shale, gravelly-----	6	43
Pierre Formation:			
	Shale-----	37	80

153-061-25DCB  
USAF 31

Altitude: 1533 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, silty, black-----	2	2
	Clay, sandy, silty, slightly gravelly, brown-----	15	17
	Clay, sandy, silty, slightly gravelly, brownish-gray-----	10	27
	Clay, sandy, silty, slightly gravelly, gray-----	31	58
Pierre Formation:			
	Shale, partly silty, dark-gray-----	72	130

153-061-31DAA  
NDSWC 8809

Altitude: 1509 feet

Glacial drift:			
	Loam, clayey, silty, pebbly, black (topsoil)-----	1	1
	Clay, moderately sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	15	16
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	10	26
	Clay, sandy, pebbly, gravelly, olive-gray, calcareous (till)-----	29	55
Pierre Formation:			
	Shale, grayish-black to black, siliceous, very slightly fractured, brittle-----	5	60

153-061-34AAA  
NDSWC 8808

Altitude: 1510 feet

Glacial drift:			
	Loam, clayey, silty, slightly pebbly, black (topsoil)-----	1	1
	Silt, clayey, moderate-yellowish-brown, oxidized (glaciolacustrine sediment)-----	5	6
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	19	25
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	12	37
	Sand, very fine to coarse, gravelly, clayey, dark-gray-----	3	40
	Clay, very sandy, pebbly, gravelly, olive-gray, calcareous (till)-----	3	43
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured, brittle-----	17	60

153-062-06AAC  
USAF 2039

Altitude: 1495 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Silt, sandy, tan-----	3	3
	Sand, fine, silty, yellowish-brown-----	4	7
	Clay, silty, sandy, slightly gravelly, brown-----	11	18
	Clay, silty, sandy, gravelly, gray-----	9	27
	Silt, clayey, sandy, slightly gravelly, gray-----	2	29
	Sand, fine to coarse, clayey, gravelly, slightly cobbly, gray-----	5	34
	Clay, silty, sandy, slightly gravelly, gray-----	2	36
	Sand, fine, clayey, silty, slightly gravelly, gray-----	2	38
	Clay, sandy, silty, slightly gravelly, gray-----	2	40
	Sand, fine, silty, slightly gravelly, gray-----	2	42
	Clay, silty, sandy, slightly gravelly, gray-----	57	99
Pierre Formation:			
	Shale, dark-gray, highly fractured and crushed; contains a silty matrix in part-----	5	104
	Shale and clay, dark-gray; moderately hard shale fragments in a hard clay matrix-----	4	108
	Shale, dark-gray, highly fractured, partly crushed-----	22	130

153-062-14BBB  
NDSWC 8812

Altitude: 1497 feet

Glacial drift:			
	Loam, clayey, silty, pebbly, black (topsoil)-----	1	1
	Clay, moderately sandy, moderately silty, pebbly, moderate-yellowish- brown, oxidized (till)-----	18	19
	Clay, slightly sandy, pebbly, olive- gray, calcareous (till)-----	10	29
	Clay, sandy, silty, pebbly, olive- gray, calcareous (till)-----	6	35
	Sand, fine to medium, silty-----	3	38
	Clay, sandy, moderately silty, pebbly, olive-gray, calcareous (till)-----	13	51
	Silt, clayey, slightly pebbly, medium- dark-gray, highly calcareous (till)-----	10	61
	Clay, moderately silty, pebbly, gravelly, olive-gray, calcareous (till)-----	6	67
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured, brittle-----	13	80

153-062-15DDC  
(Log from Peterson Well Co.)

Altitude: 1498 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Dirt, black-----	1	1
	Clay, yellow-----	19	20
	Clay, blue-----	20	40
	Clay, sandy-----	5	45
	Clay, blue-----	5	50

153-062-16CBA  
(driller's log)  
(Log modified from Paulson and Akin, 1964, p. 93)

Altitude: 1487 feet

	Topsoil-----	1	1
	Clay, yellow-----	22	23
	Clay, gravelly, blue-----	25	48
	Sand, coarse, dirty (heaves)-----	5	53
	Clay and rocks, gravelly, blue-----	6	59
	Sand, coarse and fine (dirty)-----	5	64
	Clay, gravelly, blue-----	26	90
	Clay, gray-----	10	100
	Clay and rocks, blue-----	20	120
	Sand and gravel, fine-----	5	125
	Clay and rocks, blue-----	17	142
	Broken shale or shale gravel-----	1	143
	Shale, blue-----	7	150
	Shale gravel-----	1	151

153-062-16CBB1  
City of Crary  
(driller's log)  
(Log from Paulson and Akin, 1964, p. 93)

Altitude: 1486 feet

	Clay, gravelly-----	151	151
	Sand, fine and coarse, dirty-----	10	161
	Clay, blue-----	4	165
	Shale-----	10	175
	Sand, fine (water, but sand heaves)-----	23	198
	Shale, sandy-----	34	232
	Gravel, shaly-----	1	233
	No log-----	37	270

153-062-16CBB2  
(Log from Peterson Well Co.)

Altitude: 1482 feet

Glacial drift:			
	Dirt, black-----	1	1
	Clay, yellow-----	17	18
	Clay, blue-----	32	50
	Sand, clayey-----	10	60

153-062-17AAD  
NDSWC 8813

Altitude: 1482 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, moderately sandy, moderately silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	11	11
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	25	36
	Clay, sandy, gravelly, pebbly, olive-gray, calcareous (till)-----	26	62
	Sand, very fine to medium, well-sorted-----	13	75
	Clay, sandy, pebbly, gravelly, olive-gray, calcareous (till)-----	35	110
	Sand, fine to very coarse, gravelly-----	4	114
	Clay, moderately silty, slightly sandy, pebbly, olive-gray, calcareous (till)-----	4	118
	Sand, fine to coarse, gravelly-----	2	120
	Clay, slightly sandy, gravelly, pebbly, olive-gray, calcareous (till)-----	50	170
	Silt, sandy, clayey, medium-dark-gray, highly calcareous (glaciofluvial sediment)-----	13	183
	Clay, sandy, pebbly, cobbly, medium-dark-gray, calcareous (till)-----	8	191
Pierre Formation:			
	Shale, grayish-black, siliceous, hard, brittle-----	9	200

153-062-17ADD1  
(Log from Lako Drilling Co.)

Altitude: 1483 feet

Glacial drift:			
	Topsoil, black-----	0.5	0.5
	Till, yellow-----	15.5	16
	Till, gray-----	3	19
	Till, very gravelly, gray-----	14	33
	Till, gray-----	22	55
	Sand, fine, dirty, gray-----	5	60
	Till, gray-----	3	63
	Sand and gravel, yellow-----	20	83
	Till, gray-----	27	110
	Sand, dirty, black-----	3	113
	Till, gray-----	18	131
	Sand, fine, black-----	5	136
	Till, gray-----	71	207
Pierre Formation:			
	Shale, black-----	11	218

153-062-17ADD2  
(Log from Lako Drilling Co.)

Altitude: 1483 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Clay, yellow-----	15	16
	Till, gray-----	82	98
	Sand, gray-----	2	100
	Clay, silty, gray-----	2.5	102.5
	Sand, gray-----	5.5	108
	Till, gray-----	21	129
	Sand, fine, black; consists mostly of shale particles-----	2	131
	Till, gray-----	32	163
	Sand, black-----	1	164
	Till, gray-----	25	189
Pierre Formation:			
	Shale, black-----	14	203

153-062-17DAA2  
(Log from Lako Drilling Co.)

Altitude: 1482 feet

Glacial drift:			
	Till, yellow-----	20	20
	Till, gray-----	62	82
	Till, blue, dark-----	30	112
	Clay, gray, light-----	53	165
	Sand, gray-----	1	166
	Till, gray-----	29	195
Pierre Formation:			
	Shale, black-----	10	205

153-062-17DBA  
(Log modified from Lako Drilling Co.)

Altitude: 1490 feet

Glacial drift:			
	Topsoil, black-----	2	2
	Till, yellow-----	16	18
	Till, gray-----	20	38
	Clay, grayish-black, hard-----	77	115
	Till, gray-----	13	128
Pierre Formation:			
	Shale, black; contains gravel layers and clayey shale-----	79	207

153-062-17DCA  
(Log from Lako Drilling Co.)

Altitude: 1490 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil, black-----	1	1
	Till, yellow-----	19	20
	Till, gray-----	12	32
	Gravel, coarse, gray-----	10	42
Pierre Formation:			
	Shale, black-----	21	63

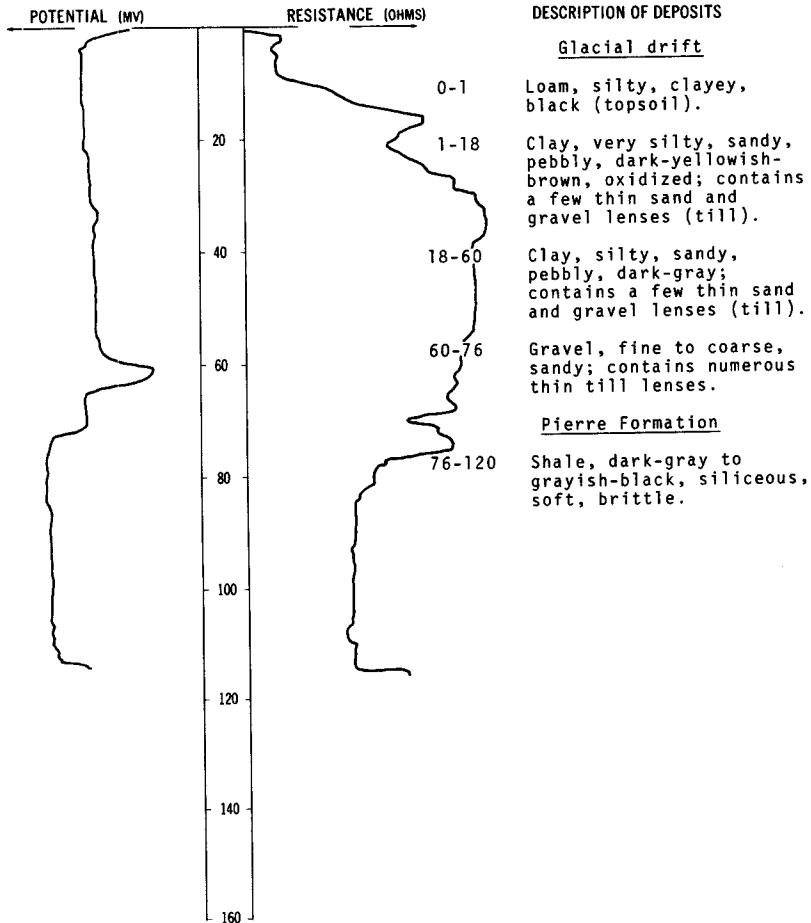
NDSWC 9098

LOCATION: 153-062-18AAB

DATE DRILLED: September 1974

ALTITUDE: 1478  
(FT, MSL)

DEPTH: 120  
(FT)



153-062-20DCD  
(Log from Lako Drilling Co.)

Altitude: 1492 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till, yellow-----	22	23
	Till, gray-----	10	33
	Gravel, black; about 50 percent shale particles-----	3	36
	Till, gray-----	7	43
	Shale and gravel, black-----	30	73
Pierre Formation:			
	Shale, very dark gray-----	10	83

153-062-21BBA  
(driller's log)  
(Log modified from Paulson and Akin, 1964, p. 94)

Altitude: 1481 feet

	Topsoil-----	1	1
	Clay, yellow-----	19	20
	Clay, blue-----	20	40
	Clay, gravelly, hard, blue (with rocks)----	38	78
	Sand and gravel, clayey-----	74	152
	Sand and gravel-----	7	159
	No log-----	5	164

153-062-24AAD  
USAF 38-1

Altitude: 1501 feet

Glacial drift:			
	Silt, sandy, clayey, grayish-brown-----	2	2
	Clay, silty, sandy, slightly gravelly, brown-----	23	25
	Clay, silty, sandy, slightly gravelly, gray-----	5	30
	Sand, fine to medium, clayey, gray-----	2	32
	Clay and silt, slightly sandy, gray-----	2	34
	Silt, clayey, sandy, gray-----	4	38
	Sand, fine, clayey, silty, gray-----	8	46
Pierre Formation:			
	Shale, clayey, silty, dark-gray, moderately soft to moderately hard-----	4	50
	Shale, dark-gray, moderately soft to moderately hard-----	80	130



153-062-26CBA  
USAF 2038

Altitude: 1502 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, silty, sandy, black-----	3	3
	Clay, silty, sandy, slightly gravelly, brown-----	19	22
	Sand, fine to coarse, clayey, slightly gravelly, brown to dark-gray-----	4	26
	Clay, silty, sandy, slightly gravelly, gray-----	22	48
	Sand, fine, clayey, silty, slightly gravelly, gray-----	7	55
Pierre Formation:			
	Shale, dark-gray, highly fractured, brittle; consists of a clayey silt matrix in part-----	75	130

153-062-26CCC  
NDSWC 8811

Altitude: 1488 feet

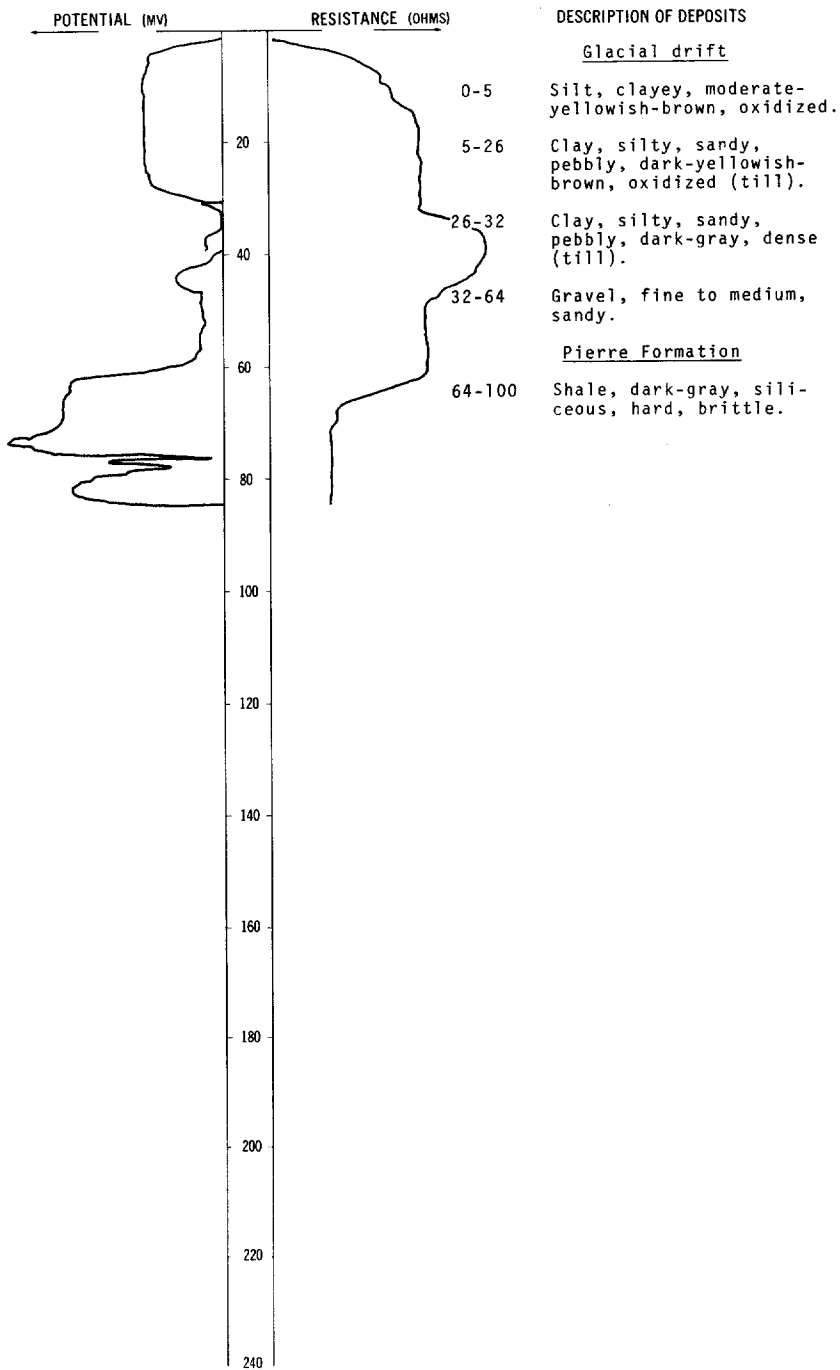
Glacial drift:			
	Loam, clayey, silty, pebbly, black (topsoil)-----	1	1
	Silt, clayey, dusky-yellow, oxidized (glaciolacustrine sediment)-----	7	8
	Clay, moderately silty, slightly sandy, pebbly, moderate-yellowish- brown, oxidized (till)-----	5	13
	Clay, slightly sandy, pebbly, olive- gray, calcareous (till)-----	22	35
	Clay, sandy, gravelly, slightly cobble (till)-----	37	72
	Gravel, fine to coarse, sandy, cobble-----	3	75
Pierre Formation:			
	Shale, grayish-black, siliceous, bentonitic, brittle-----	25	100

LOCATION: 153-062-29CCC

ALTITUDE: 1487  
(FT, MSL)

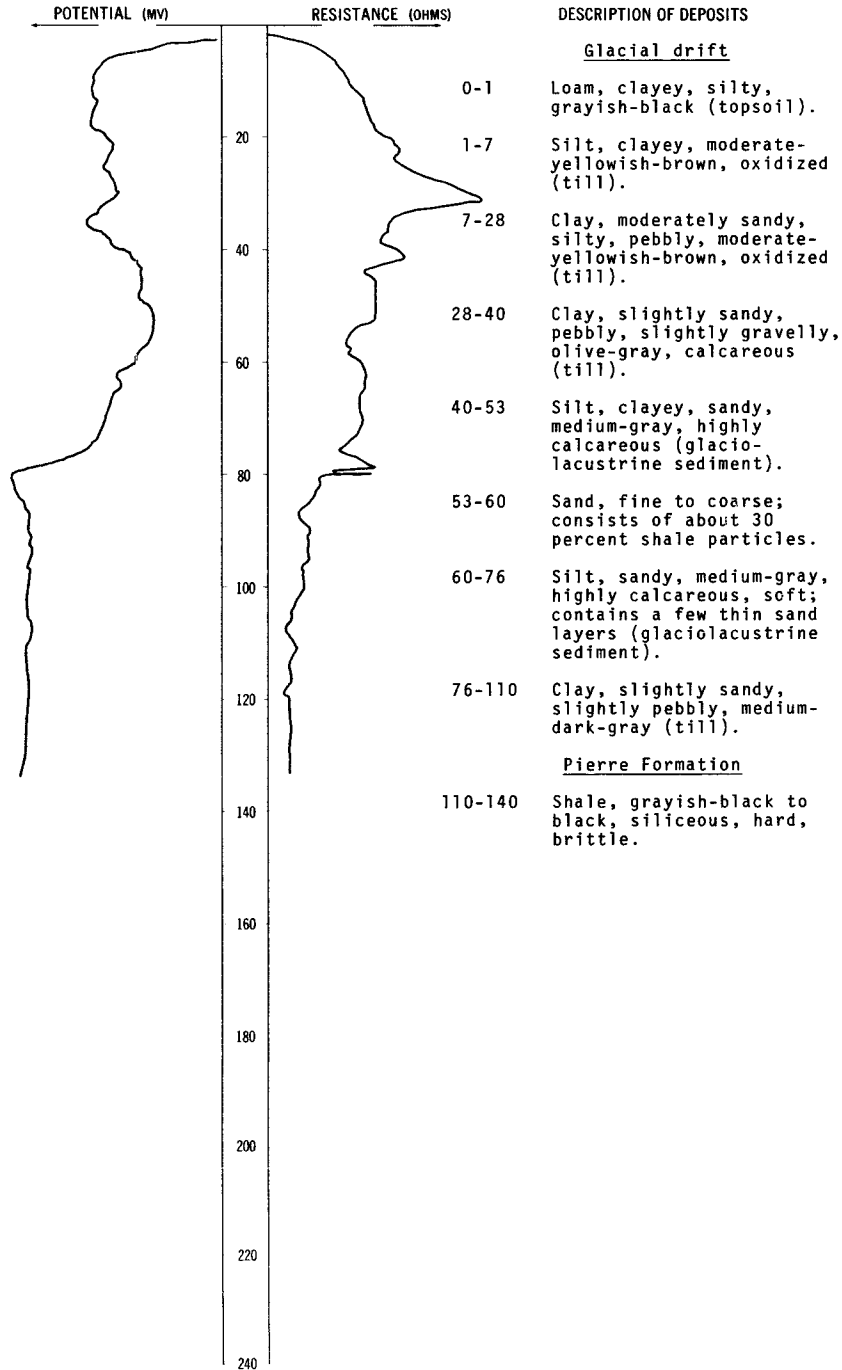
DATE DRILLED: September 1974

DEPTH: 100  
(FT)



LOCATION: 153-063-07CDC  
 ALTITUDE: 1463  
 (FT, MSL)

DATE DRILLED: August 1973  
 DEPTH: 140  
 (FT)

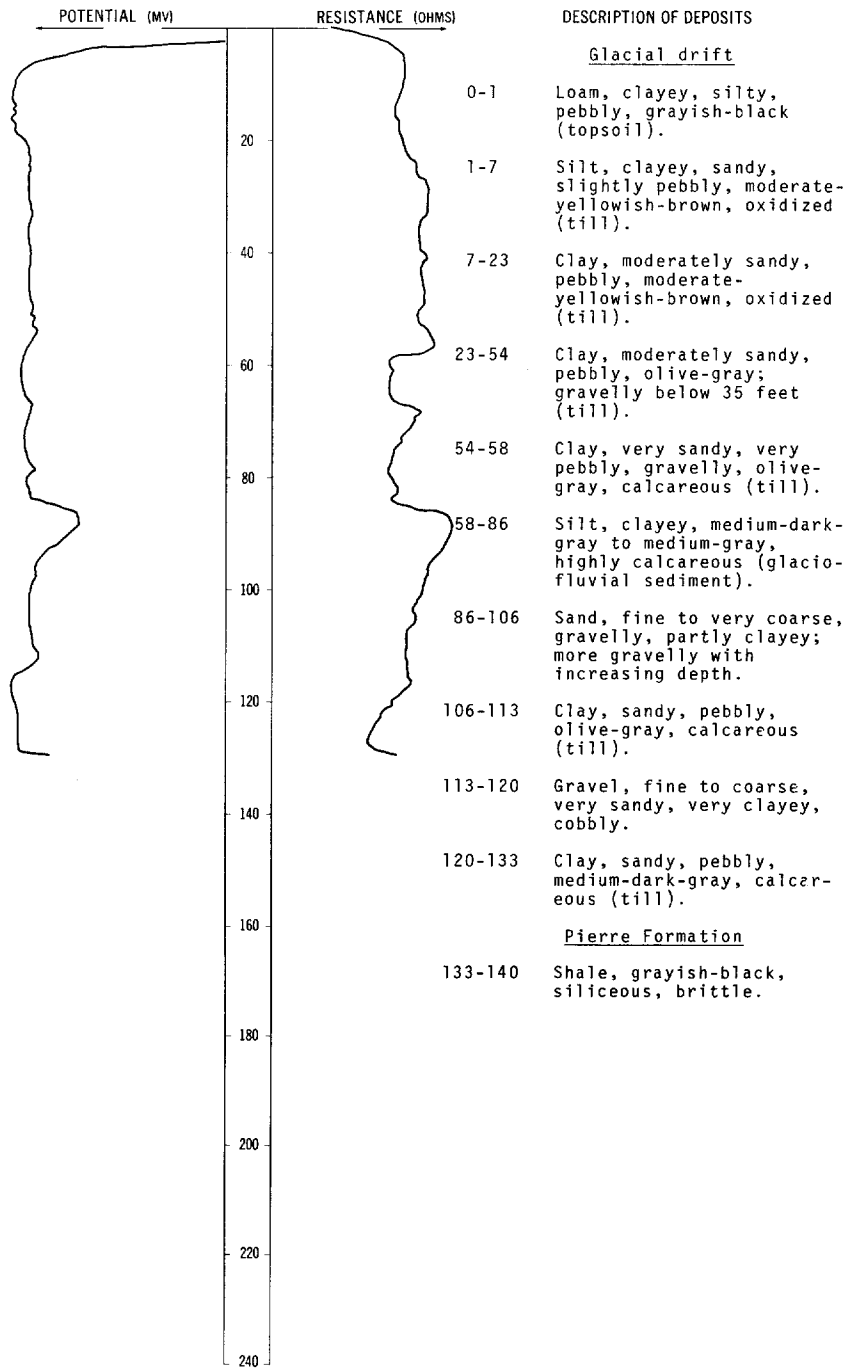


LOCATION: 153-063-09CDD

ALTITUDE: 1472  
(FT, MSL)

DATE DRILLED: August 1973

DEPTH: 140  
(FT)

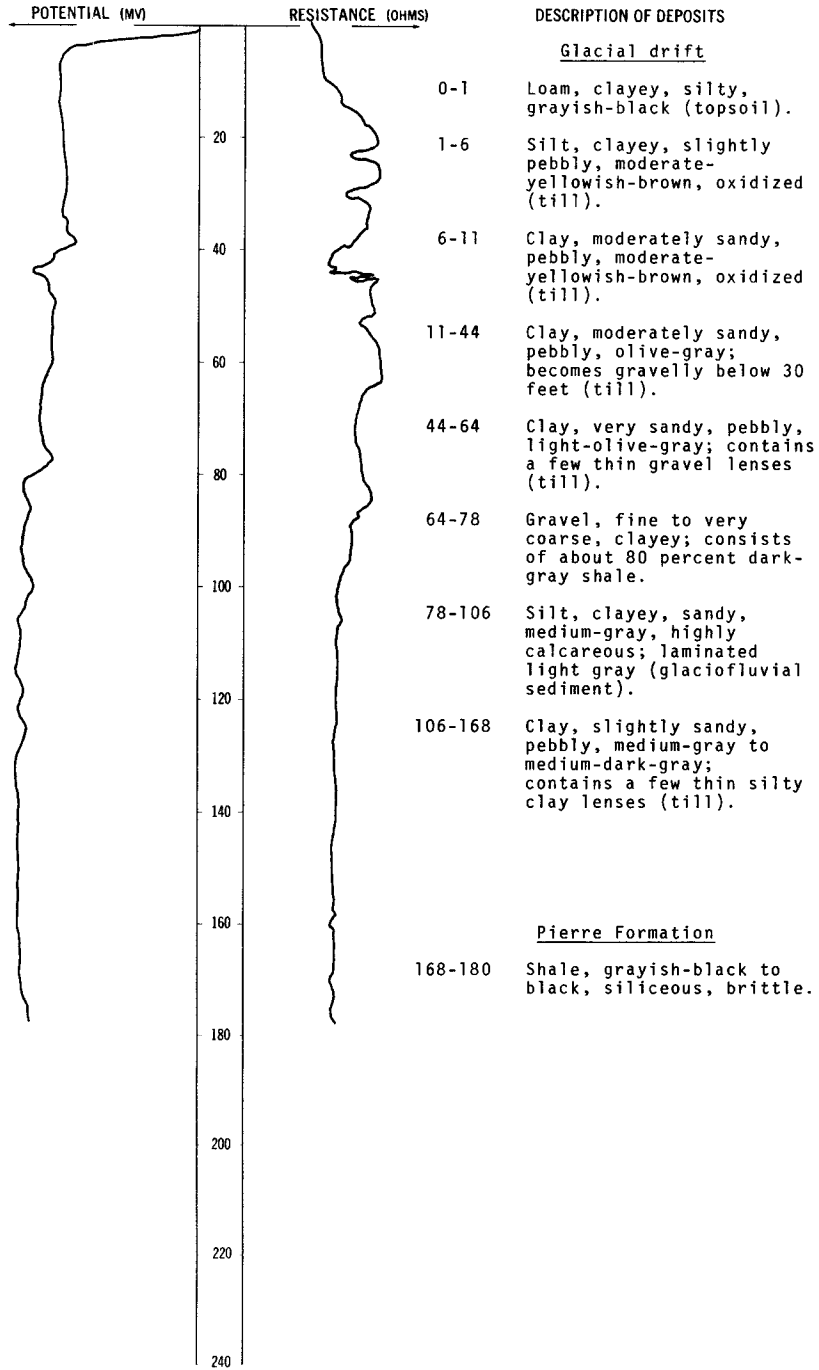


LOCATION: 153-063-11AAA2

DATE DRILLED: August 1973

ALTITUDE: 1478  
(FT, MSL)

DEPTH: 180  
(FT)



153-063-17DDA2  
(Log modified from Holbeck Well Service)

Altitude: 1470 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil-----	1	1
	Gravel-----	2	3
	Clay, gray-----	7	10
	Gravel, rocky; clay, blue-----	25	35
Pierre Formation:			
	Shale-----	55	90
	Slate (shale)-----	3	93

153-063-21DDB  
USAF 105

Altitude: 1463 feet

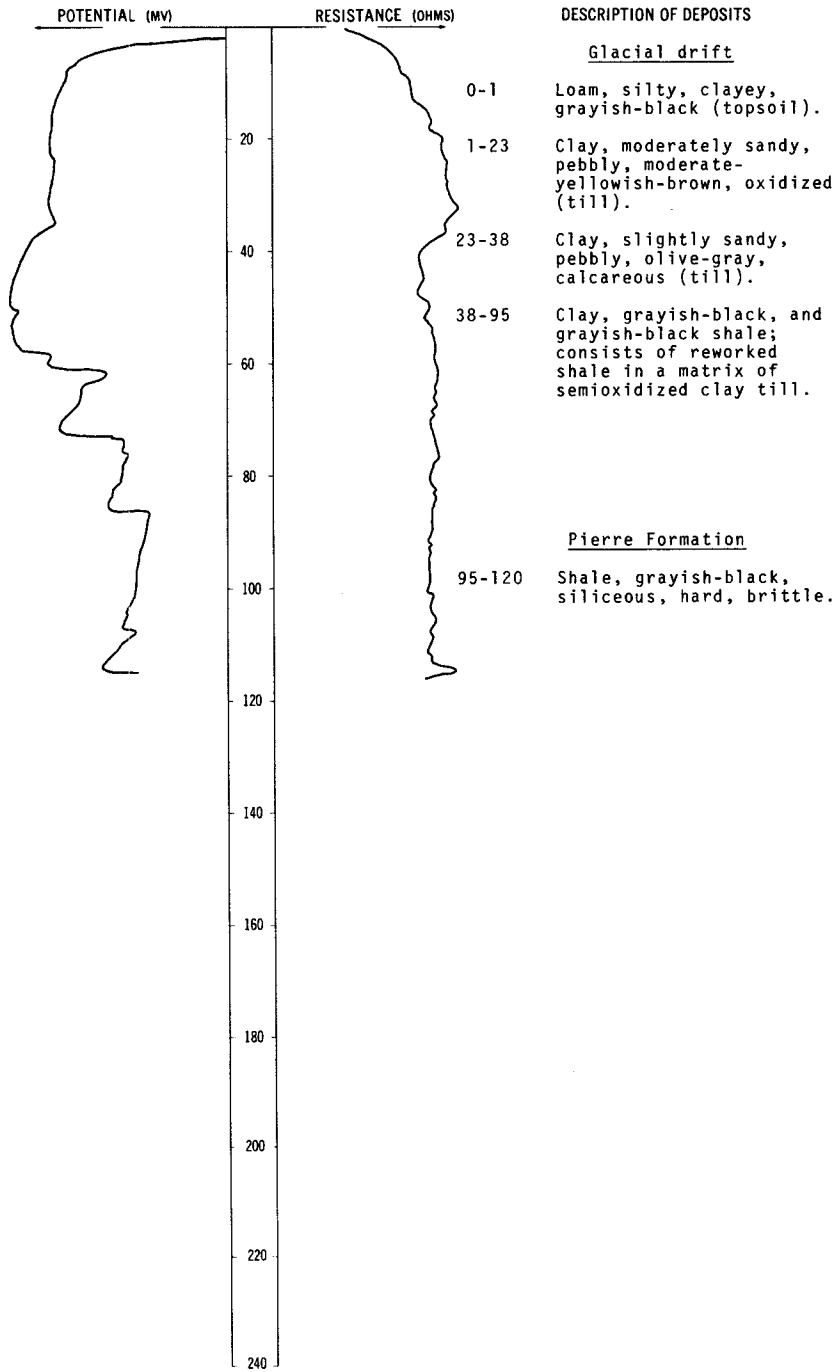
Glacial drift:			
	Silt, sandy, black-----	2	2
	Clay, sandy, silty, slightly gravelly, brownish-gray-----	16	18
	Clay, sandy, silty, slightly gravelly, gray-----	12	30
	Silt, clayey, gray-----	7	37
	Sand, fine to coarse, silty, slightly gravelly, dark-gray-----	7	44
	Shale and clay; consists of dark- gray shale fragments in a matrix of very stiff, silty clay-----	4	48
Pierre Formation:			
	Shale, dark-gray, highly fractured-----	23	71
	Shale and silt; consists of dark- gray shale fragments in a matrix of very dense clayey silt-----	17	88
	Shale, dark-gray, highly fractured-----	42	130

LOCATION: 153-063-22DDD

DATE DRILLED: August 1973

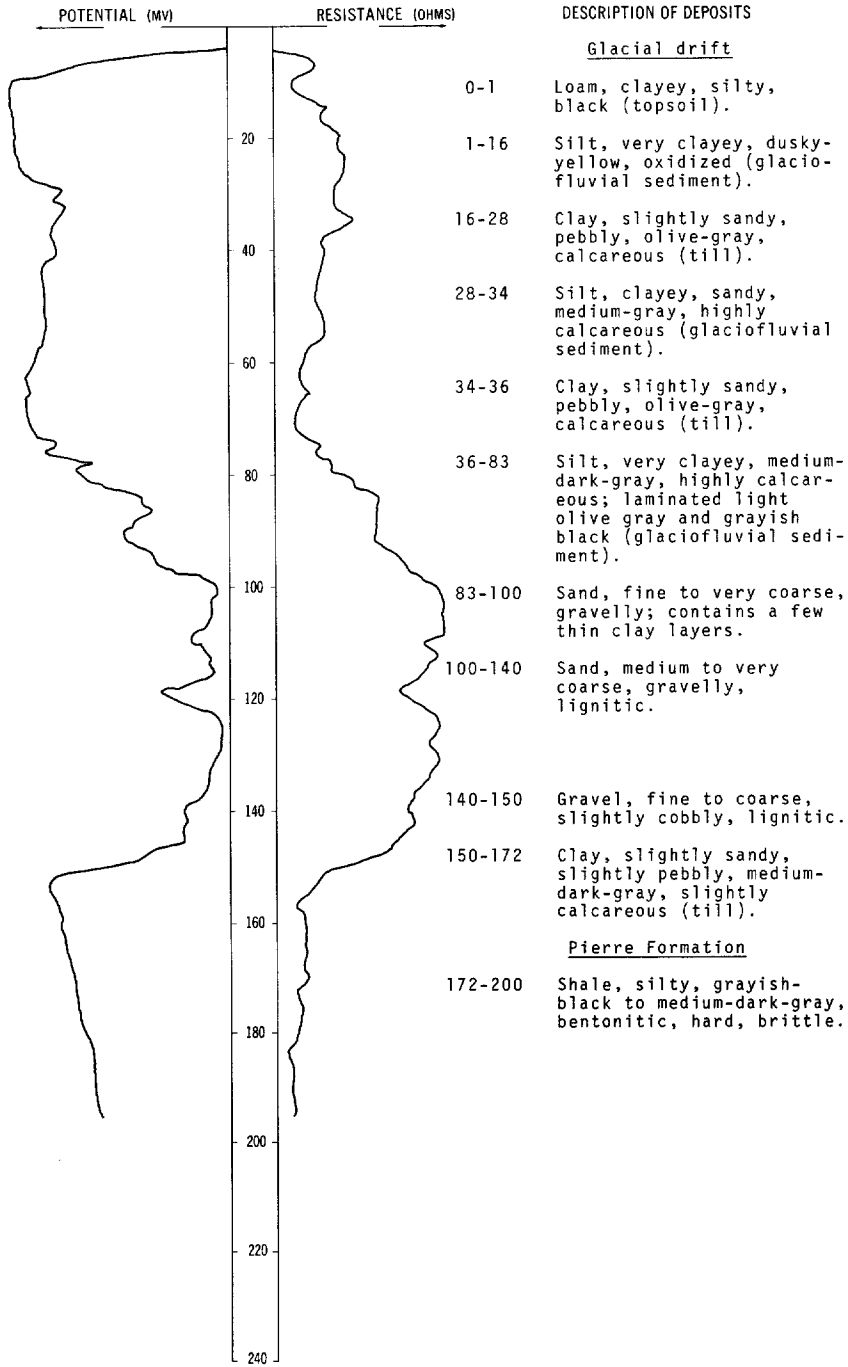
ALTITUDE: 1492  
(FT, MSL)

DEPTH: 120  
(FT)



LOCATION: 153-063-29ADD  
 ALTITUDE: 1449  
 (FT, MSL)

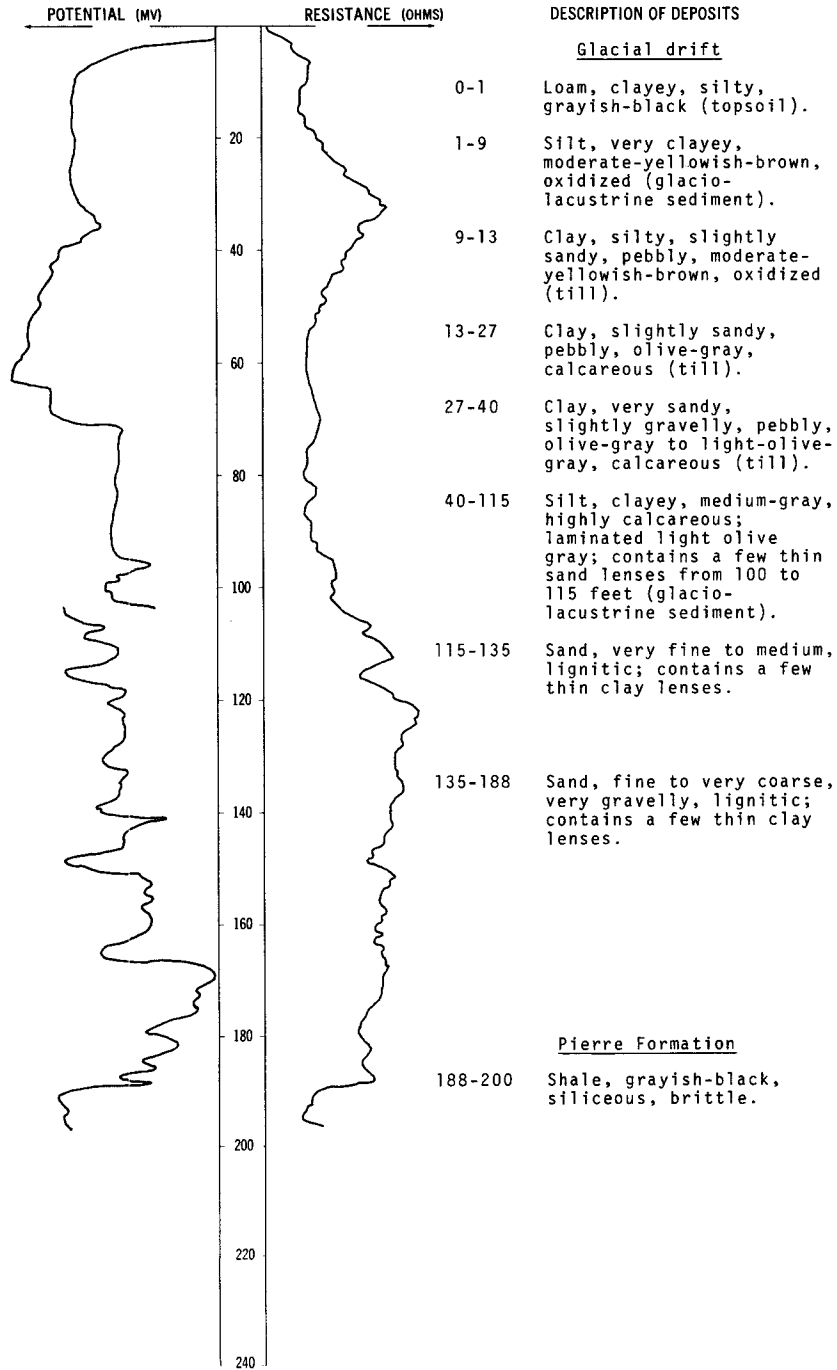
DATE DRILLED: August 1973  
 DEPTH: 200  
 (FT)





LOCATION: 153-063-34BBC  
 ALTITUDE: 1463  
 (FT, MSL)

DATE DRILLED: August 1973  
 DEPTH: 200  
 (FT)



153-064-03BDD  
 Bureau of Reclamation substation well  
 (driller's log)  
 (Log modified from Paulson and Akin, 1964, p. 94)

Altitude: 1435 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
	Clay and sand, brown; gravel, medium-----	4.2	4.2
	Sand and gravel, silty, brown-----	.6	4.8
	Clay and sand, brown; gravel, medium-----	7.7	12.5
	Gravel, silty, brown-----	2.1	14.6
	Till, sandy, gray-----	10.4	25
	Till, silty, gray-----	13	38
	Shale, gray-----	10	48

153-064-04DBA  
 (Log modified from Holbeck Well Service)

Altitude: 1452 feet

Glacial drift:			
	Soil, black-----	2	2
	Sand-----	5	7
	Clay, blue-----	63	70
Pierre Formation:			
	Shale-----	52	122

153-064-05BAA  
 (Log modified from Nick Erck Well Drilling Co.)

Altitude: 1455 feet

Glacial drift:			
	Topsoil, black-----	1.5	1.5
	Clay, yellow-----	17.5	19
	Clay, blue-----	24	43
	Gravel; sand, muddy-----	1	44
	Clay, blue-----	14	58
Pierre Formation:			
	Shale-----	43	101

153-064-07BBB  
 Test hole 194  
 (Log modified from Paulson and Akin, 1964, p. 94)

Altitude: 1476 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-gray-----	3	4
	Till, light-brown-----	25	29
	Till, gray-----	87	116
	Sand, coarse, very clayey, gray-----	14	130
	Sand, coarse; gravel, fine, very clayey, gray-----	18	148
Pierre Formation:			
	Shale, gray-----	7	155

153-064-07CDD  
(Log from Holbeck Well Service)

Altitude: 1457 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Soil, black-----	1	1
	Clay, yellow-----	17	18
	Clay, soft, yellow-----	12	30
	Clay, blue; sand-----	60	90
	Sand, quick-----	19	109
	Sand, medium and coarse-----	5	114

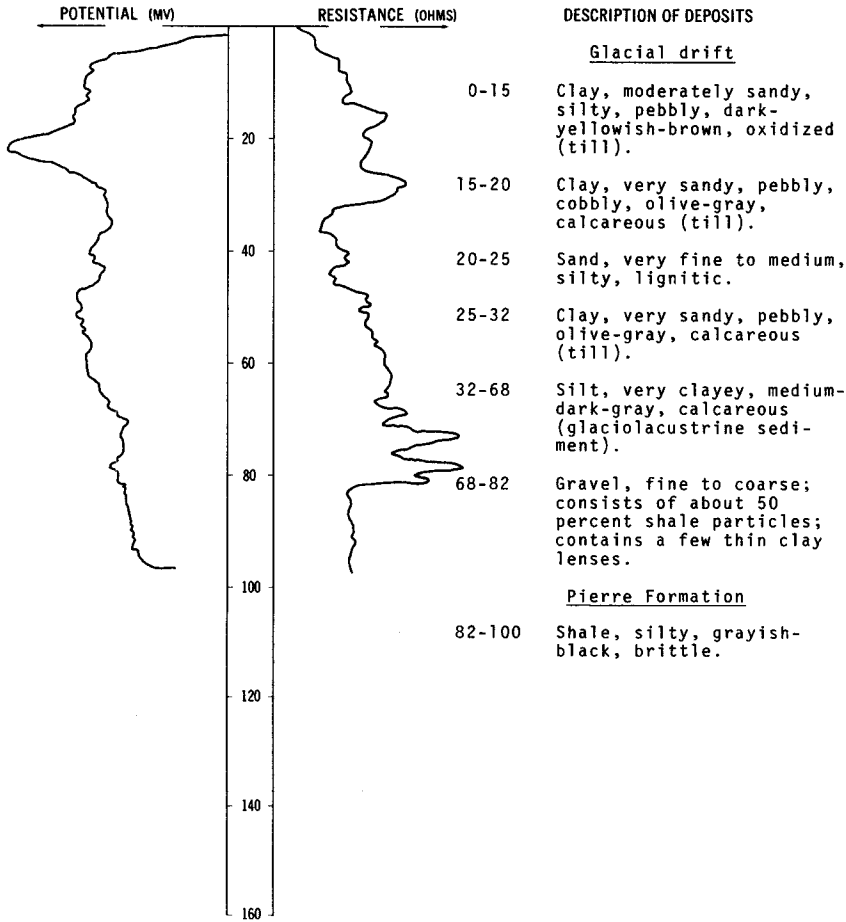
NDSWC 8868

LOCATION: 153-064-08ADA

DATE DRILLED: August 1973

ALTITUDE: 1438  
(FT, MSL)

DEPTH: 100  
(FT)



153-064-09ACC  
(Log modified from Holbeck Well Service)

Altitude: 1475 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Clay, sandy, fine, yellow-----	12	12
	Clay, gravelly, yellow-----	20	32
	Hard pan, gravelly-----	26	58
	Clay and gravel, blue-----	34	92
Pierre Formation:			
	Shale, blue-----	50	142
	Slate (shale)-----	20	162

153-064-09ADA  
(Log modified from Holbeck Well Service)

Altitude: 1442 feet

Glacial drift:			
	Soil, black-----	1	1
	Clay, yellow, soft-----	20	21
	Clay, sandy, blue-----	47	68
	Sand and clay-----	3	71
	Clay, gray-----	21	92
	Clay, blue-----	11	103
	Gravel-----	1	104

153-064-09DBB  
(Log modified from Holbeck Well Service)

Altitude: 1470 feet

Glacial drift:			
	Soil, black-----	2	2
	Clay and gravel, yellow-----	20	22
	Hard pan and gravel-----	12	34
	Clay, sandy, yellow-----	10	44
Pierre Formation:			
	Shale, gray, soft-----	40	84
	Shale-----	46	130

153-064-10DDD2  
NDSWC 8860

Altitude: 1442 feet

Glacial drift:			
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	18	18
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	10	28
	Clay, very sandy, gravelly, olive-gray to medium-dark-gray, calcareous (till)-----	14	42
	Sand, fine to very coarse, clayey-----	4	46
Pierre Formation:			
	Shale, siliceous, very slightly fractured, brittle-----	34	80

153-064-12DBD  
(Log modified from Holbeck Well Service)

Altitude: 1460 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil-----	1.5	1.5
	Clay and sand, yellow-----	93.5	95
	Clay, muddy, gray-----	33	128
	Gravel and clay-----	4	132
	Clay, gray, soft-----	4	136
	Sand and gravel, muddy-----	6	142

153-064-16AAB  
Great Northern test 3  
(driller's log)  
(Log modified from Paulson and Akin, 1964, p. 95)

Altitude: 1430 feet

	Clay, hard; sand-----	30	30
	Clay, blue-----	40	70
	Clay and sand-----	6	76
	Dark shale (a little water at 82 feet)-----	15	91
	Shale, blue-----	4	95
	Sand, hard (water)-----	2	97
	Shale, blue-----	8	105
	Shale-----	15	120

153-064-16AAC1  
Great Northern test 2  
(driller's log)  
(Log modified from Paulson and Akin, 1964, p. 95)

Altitude: 1430 feet

	Clay, blue-----	45	45
	Clay, gray-----	22	67
	Quicksand-----	12	79
	Sand, hard (water)-----	1	80
	Quicksand-----	4	84
	Sand, gravelly-----	9	93

153-064-16AAC2  
Great Northern test 1  
(driller's log)  
(Log modified from Paulson and Akin, 1964, p. 95)

Altitude: 1430 feet

	Clay, blue-----	15	15
	Dark clay and sand-----	8	23
	Sand and gravel (some water)-----	1	24
	Clay, gray-----	51	75
	Sand and water; unable to bail water down; water stands 35 feet from surface-----	3	78
	Clay, blue-----	4	82
	Quicksand-----	12	94
	Gravel (water)-----	8	102
	Clay, blue-----	1	103

153-064-16AAC3  
 Great Northern test 4  
 (driller's log)  
 (Log modified from Paulson and Akin, 1964, p. 96)

Altitude: 1430 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
	Clay and sand-----	20	20
	Clay, blue-----	60	80
	Clay and sand-----	10	90
	Quicksand-----	7	97
	Gravel-----	4	101

153-064-16CCB  
 Great Northern test 6  
 (driller's log)  
 (Log modified from Paulson and Akin, 1964, p. 96)

Altitude: 1445 feet

	Clay and sand-----	13	13
	Boulders-----	22	35
	Clay and sand-----	25	60
	Gravel and clay-----	20	80
	Clay, blue-----	10	90
	Shale-----	5	95

153-064-16CCC  
 Great Northern test 5  
 (driller's log)  
 (Log modified from Paulson and Akin, 1964, p. 96)

Altitude: 1440 feet

Glacial drift:			
	Clay and sand-----	20	20
	Clay-----	33	53
	Sand and a little water-----	14	67
	Quicksand-----	23	90
	Sand-----	7	97
	Clay, blue-----	3	100
	Sand and clay-----	4	104
Pierre Formation:			
	Shale-----	2	106

153-064-16CDD  
(Log from Holbeck Well Service)

Altitude: 1445 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Fill-----	2	2
	Topsoil-----	1	3
	Clay, yellow-----	24	27
	Clay, sandy, blue-----	71	98
	Sand, quick-----	18	116
	Sand, coarse-----	5	121

153-064-18CDB  
(Log from Holbeck Well Service)

Altitude: 1430 feet

Glacial drift:			
	Gravel-----	8	8
	Clay, yellow-----	22	30
	Clay, sandy-----	40	70
	Sand-----	5	75

153-064-18CDC  
(Log from Holbeck Well Service)

Altitude: 1457 feet

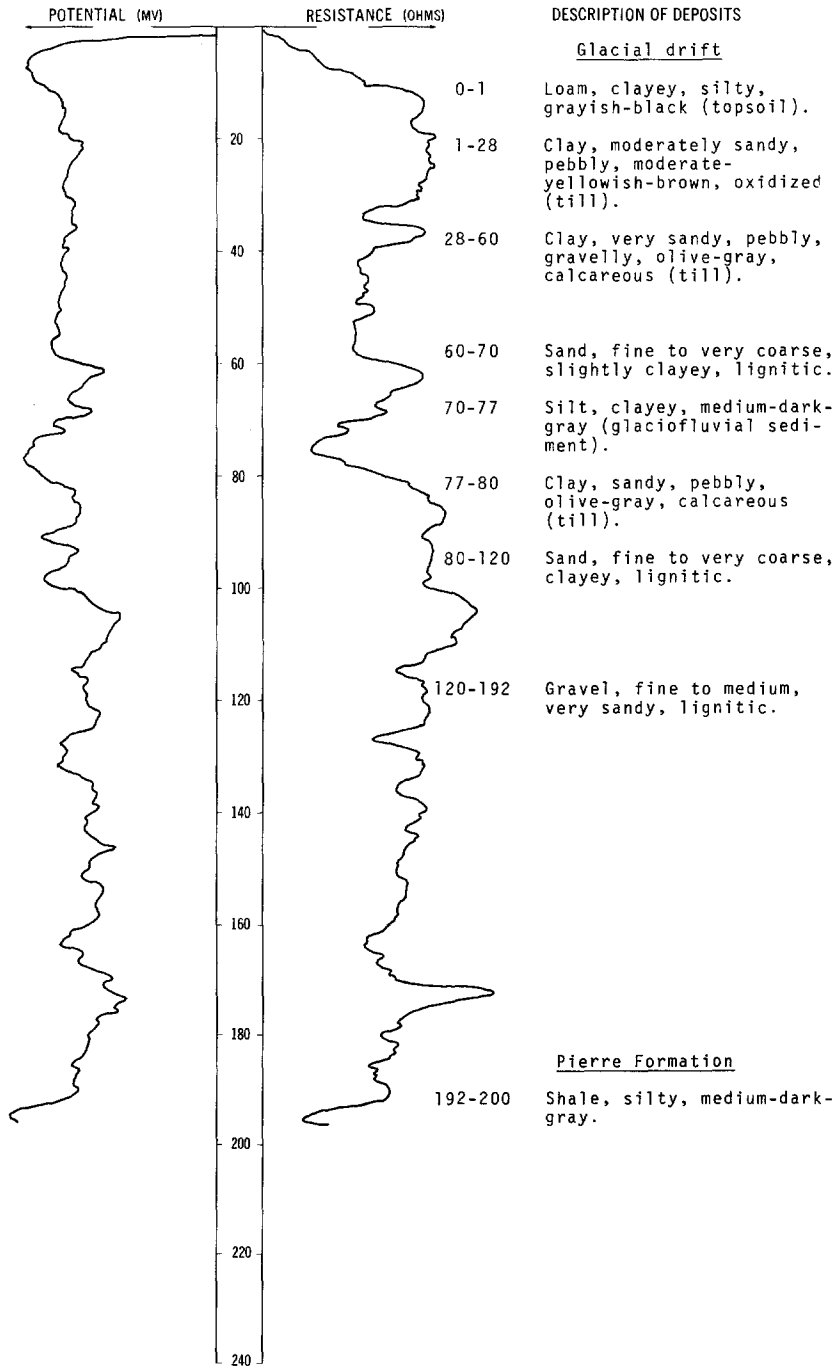
Glacial drift:			
	Fill-----	2	2
	Clay, yellow-----	24	26
	Clay and sand, gray-----	52	78
	Clay, soapy, gray-----	18	96
	Sand-----	15	111
	Sand, coarse-----	7	118

LOCATION: 153-064-19AAB2

ALTITUDE: 1465  
(FT, MSL)

DATE DRILLED: August 1973

DEPTH: 200  
(FT)





153-064-1988C  
Great Northern test 8  
(driller's log)

(Log modified from Paulson and Akin, 1964, p. 98)

Altitude: 1470 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
	Clay and boulders-----	20	20
	Clay and gravel-----	20	40
	Clay-----	10	50
	Sand and a little water-----	15	65
	Clay, blue-----	35	100
	Clay and gravel-----	15	115
	Sand and clay; a little water-----	25	140
	Clay, sandy, gravelly; some water-----	8	148
	Shale-----	4	152
	Clay and sand-----	30	182
	Shale-----	3	185

153-064-19DDA1  
Camp Grafton Military Reservation  
(driller's log)

(Log modified from Paulson and Akin, 1964, p. 97)

Altitude: 1467 feet

	Topsoil-----	1	1
	Clay, gravelly, bouldery, yellow-----	49	50
	Clay, sandy, gravelly, iron-stained-----	9	59
	Sand; some water-----	3	62
	Clay, sandy, iron-stained-----	6	68
	Clay, sandy, soft, brown to dark-brown-----	20	88
	Shale, blue; getting harder with depth. (Note: This may be drift composed principally of shale fragments.)-----	50	138
	Gravel-----	6	144
	Sand-----	6	150

153-064-19DDA2  
Camp Grafton Military Reservation  
(driller's log)

(Log modified from Paulson and Akin, 1964, p. 97)

Altitude: 1467 feet

	Topsoil-----	1	1
	Clay, gravelly, yellow-----	61	62
	Shale, blue-----	75	137
	Sand, gravelly; sand getting coarser with depth-----	32	169

153-064-19DDA3  
 Camp Grafton Military Reservation  
 (driller's log)  
 (Log modified from Paulson and Akin, 1964, p. 97)

Altitude: 1467 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Hard gumbo-----	15	15
	Sand and clay-----	5	20
	Boulders-----	10	30
	Gravel and clay-----	35	65
	Clay, blue-----	30	95
	Shale-----	35	130
	Shale, blue-----	5	135
	Sand-----	2	137
	Sand and gravel-----	7	144
	Gravel-----	11	155

153-064-21BAB  
 Test hole 402  
 (Log modified from Paulson and Akin, 1964, p. 98)

Altitude: 1445 feet

Glacial drift:			
	Topsoil, stony, brown-----	1	1
	Till, sandy, gravelly, gray-----	4	5
	Till, sandy, gravelly, brown-----	3	8
	Sand, fine to medium, clayey, gravelly, brown-----	6	14
	Till, brown-----	3	17
	Sand and gravel, brown-----	2	19
	Till, brown-----	2	21
	Till, gray-----	7	28
	Sand, gray; some detrital lignite-----	4	32
	Till, gray-----	4	36
	Clay and silt, gray-----	38	74
	Sand, very fine to fine, silty, clayey, gray-----	6	80
	Sand, medium to coarse, gravelly, gray-----	20	100
	Sand, medium to very coarse; gravel, gray; mainly detrital shale, fine to medium-----	10	110
	Sand, medium to very coarse, gray; gravel, gray; about one-half detrital shale; more gravel toward bottom-----	35	145
Pierre Formation:			
	Shale, gray-----	5	150

153-064-21BCA  
Test hole 401  
(Log modified from Paulson and Akin, 1964, p. 99)

Altitude: 1435 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Sand and gravel, brown-----	6	6
	Gravel, fine, very clayey, brown-----	4	10
	Sand, very coarse; gravel, fine, brown; about one-half detrital shale, clayey-----	15	25
	Till, sandy, gravelly, brown-----	18	43
	Till, sandy, gray-----	33	76
	Sand and gravel, gray; about two- thirds detrital shale; some detrital lignite, clayey-----	66	142
Pierre Formation:			
	Shale, gray-----	8	150

153-064-21CBD  
Devils Lake city test 1  
(Log modified from Paulson and Akin, 1964, p. 99)

Altitude: 1440 feet

Glacial drift:			
	Sand, very fine; silt, light- brown-----	15	15
	Till, gray-----	10	25
	Clay, gravelly, gray-----	43	68
	Sand, very fine, silty, clayey, gray-----	12	80
	Sand, very fine to fine, silty, clayey, gray-----	5	85
	Sand, medium to very coarse; gravel, fine to medium-----	20	105
	Sand, medium to very coarse; gravel, fine to medium, slightly clayey and silty, gray; material is coarser toward bottom-----	47	152
Pierre Formation:			
	Shale, gray-----	3	155

153-064-21CDC  
 Devils Lake city test 4  
 (driller's log)  
 (Log modified from Paulson and Akin, 1964, p. 100)

Altitude: 1440 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
	Clay-----	1	1
	Sand-----	2	3
	Clay-----	4	7
	Clay, sandy-----	10	17
	Clay, sandy, brown-----	18	35
	Clay, sandy, gray-----	5	40
	Clay, sticky-----	6	46
	Sand, clayey-----	12	58
	Clay, sticky-----	7	65
	Clay, sandy-----	7	72
	Clay-----	6	78
	Sand, fine-----	24	102
	Sand, coarse-----	4	106
	Sand, mushy, brown-----	11	117
	Sand, water-bearing-----	26	143
	Sand; somewhat finer and mixed, not so good to screen for water-----	12	155
	Sand, good-----	22	177
	Sand, fine-----	15	192
	Sand (coarser)-----	2	194
	Sand, coarse-----	4	198
	Sand, fine-----	12	210
	Sand, water-bearing-----	10	220
	Sand (finer)-----	28	248
	Shale-----	1	249

153-064-28BCA  
 Test hole 403  
 (Log modified from Paulson and Akin, 1964, p. 101)

Altitude: 1435 feet

Glacial drift:			
	Topsoil, sandy, gray-----	2	2
	Clay and silt, brown-----	7	9
	Sand, very coarse; gravel, fine, clayey, brown-----	4	13
	Till, gray-----	16	29
	Sand and gravel, gray-----	7	36
	Till, gray-----	29	65
	Sand and gravel, gray-----	3	68
	Till, gray-----	35	103
	Clay and silt, gray-----	10	113
	Till, gray; sandy and gravelly toward bottom-----	53	166
	Sand, very coarse; gravel, fine to medium, gray; well sorted-----	13	179
	Sand, very coarse; gravel, fine, gray; about two-thirds detrital shale, clayey toward bottom-----	16	195
Pierre Formation:			
	Shale, gray-----	15	210

153-064-28BCD  
 Great Northern well at Fort Totten station  
 (driller's log)  
 (Log modified from Paulson and Akin, 1964, p. 101)

Altitude: 1440 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Cinders (backfill)-----	5½	5½
	Clay, yellow-----	17½	23
	Clay, soft, blue-----	54	77
	Quicksand-----	31	108
	Clay, blue-----	6	114
	Quicksand-----	12	126
	Clay and flour sand-----	51	177
	Clay, blue-----	8	185
	Quicksand-----	9	194
	Clay, hard, blue-----	40	234
Pierre Formation:			
	Shale, hard, water-bearing-----	24	258

153-064-28CDC  
 Devils Lake city test 2  
 (Log modified from Paulson and Akin, 1964, p. 102)

Altitude: 1430 feet

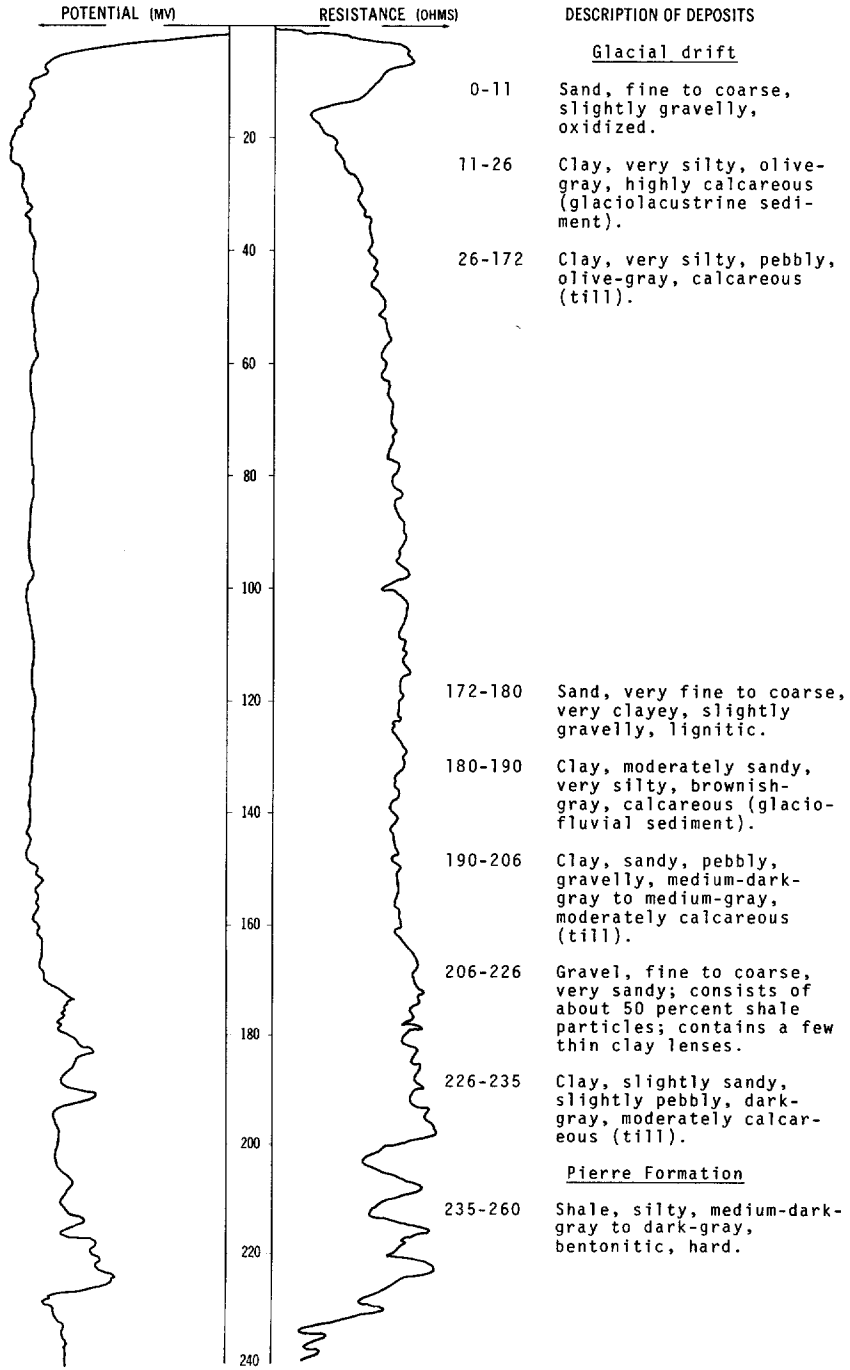
Glacial drift:			
	Sand and gravel, silty, clayey, light-brown-----	18	18
	Silt, clay and fine sand, gravelly-----	17	35
	Till or silty clay and fine sand, gravelly, gray-----	40	75
	Till, gray-----	40	115
	Gravel, fine to medium, and sand-----	5	120
	Till, gray-----	75	195
Pierre Formation:			
	Shale, gray-----	5	200

LOCATION: 153-064-33BAB

DATE DRILLED: August 1973

ALTITUDE: 1425  
(FT, MSL)

DEPTH: 260  
(FT)



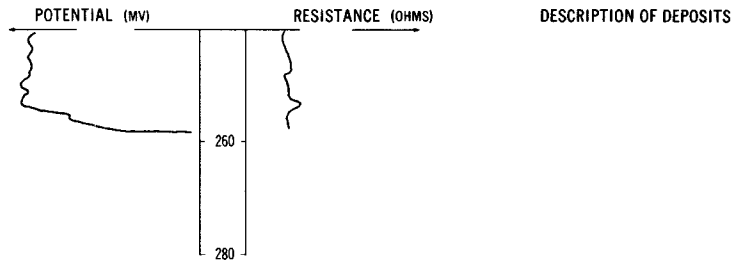
NDSWC 8870, Continued

LOCATION: 153-064-33BAB

DATE DRILLED: August 1973

ALTITUDE: 1425  
(FT, MSL)

DEPTH: 260  
(FT)



153-065-01BBA  
Test hole 182  
(Log modified from Paulson and Akin, 1964, p. 102)

Altitude: 1485 feet

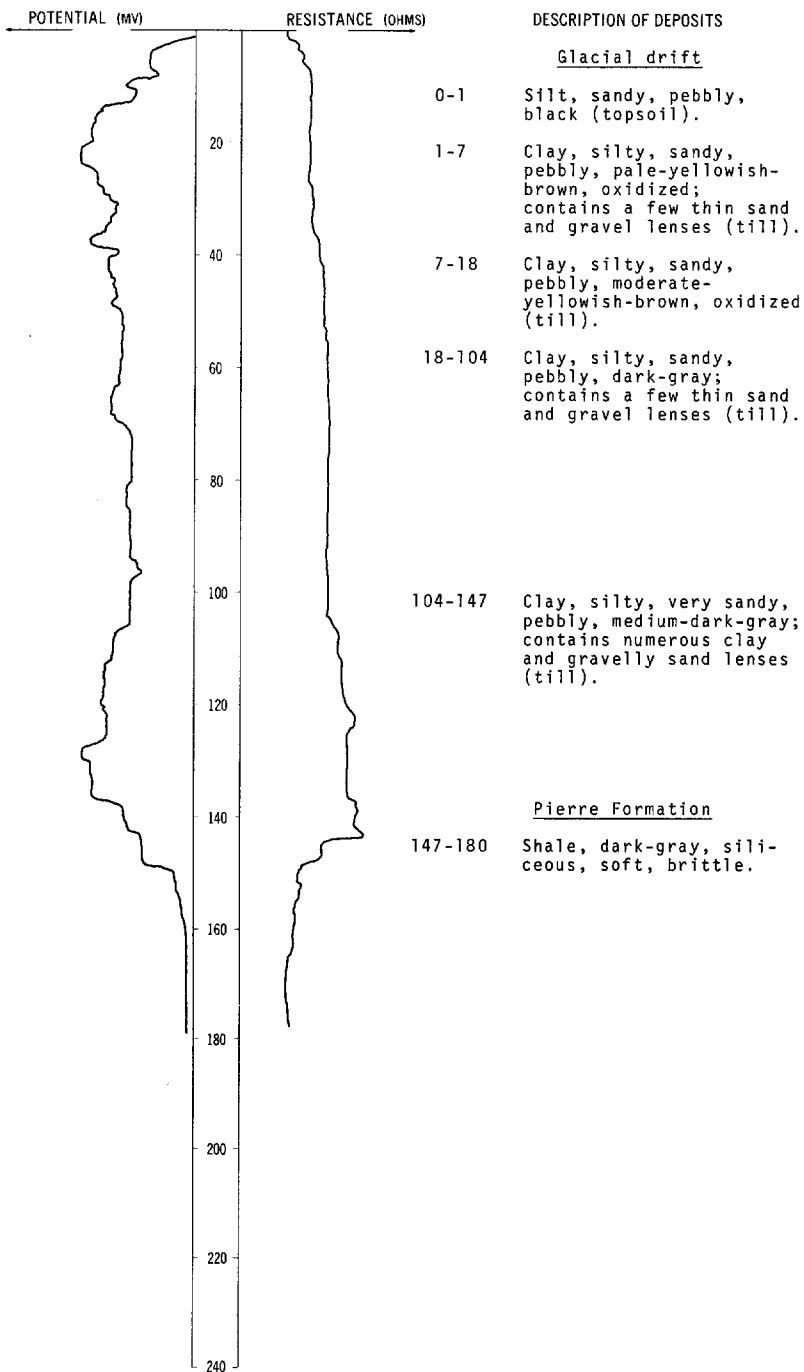
<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Sand, medium, gravelly, light-brown, well-sorted-----	4	5
	Gravel, coarse; sand, fine to coarse; about one-half detrital shale-----	10	15
	Gravel, fine; sand, gray; about one- half detrital shale-----	12	27
	Till, gray-----	105	132
	Sand, coarse; gravel, fine, gray; about one-quarter detrital shale-----	13	145
Pierre Formation:			
	Shale, gray-----	5	150

LOCATION: 153-065-01CDD

DATE DRILLED: August 1974

ALTITUDE: 1446  
(FT, MSL)

DEPTH: 180  
(FT)





153-065-02CCC1

Test hole 188

(Log modified from Paulson and Akin, 1964, p. 103)

Altitude: 1481 feet

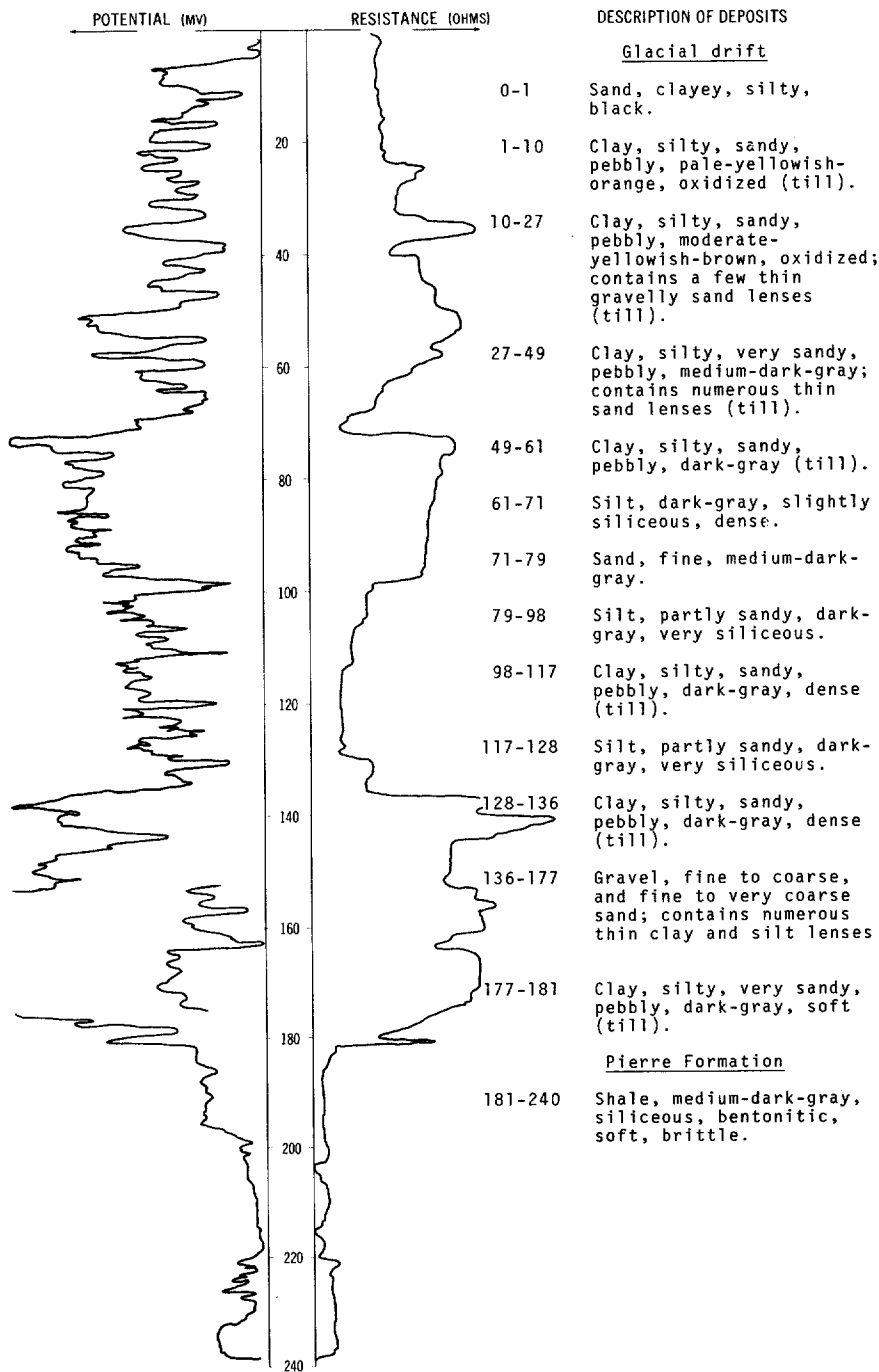
<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till or clay, gray-----	1	2
	Till, light-brown-----	25	27
	Till, gray-----	25	52
	Sand and gravel, very clayey, gray-----	3	55
	Till, gray-----	11	66
	Sand and gravel, gray-----	3	69
	Till, gray-----	68	137
	Sand, coarse; gravel, fine, gray; about one-half detrital shale, clayey-----	8	145
	Gravel, coarse; sand, coarse, gray; about one-fourth detrital shale, well sorted-----	5	150
	Till, gray-----	26	176
Pierre Formation:			
	Shale, gray-----	12	188

LOCATION: 153-065-02CCC2

ALTITUDE: 1480  
(FT, MSL)

DATE DRILLED: August 1974

DEPTH: 240  
(FT)

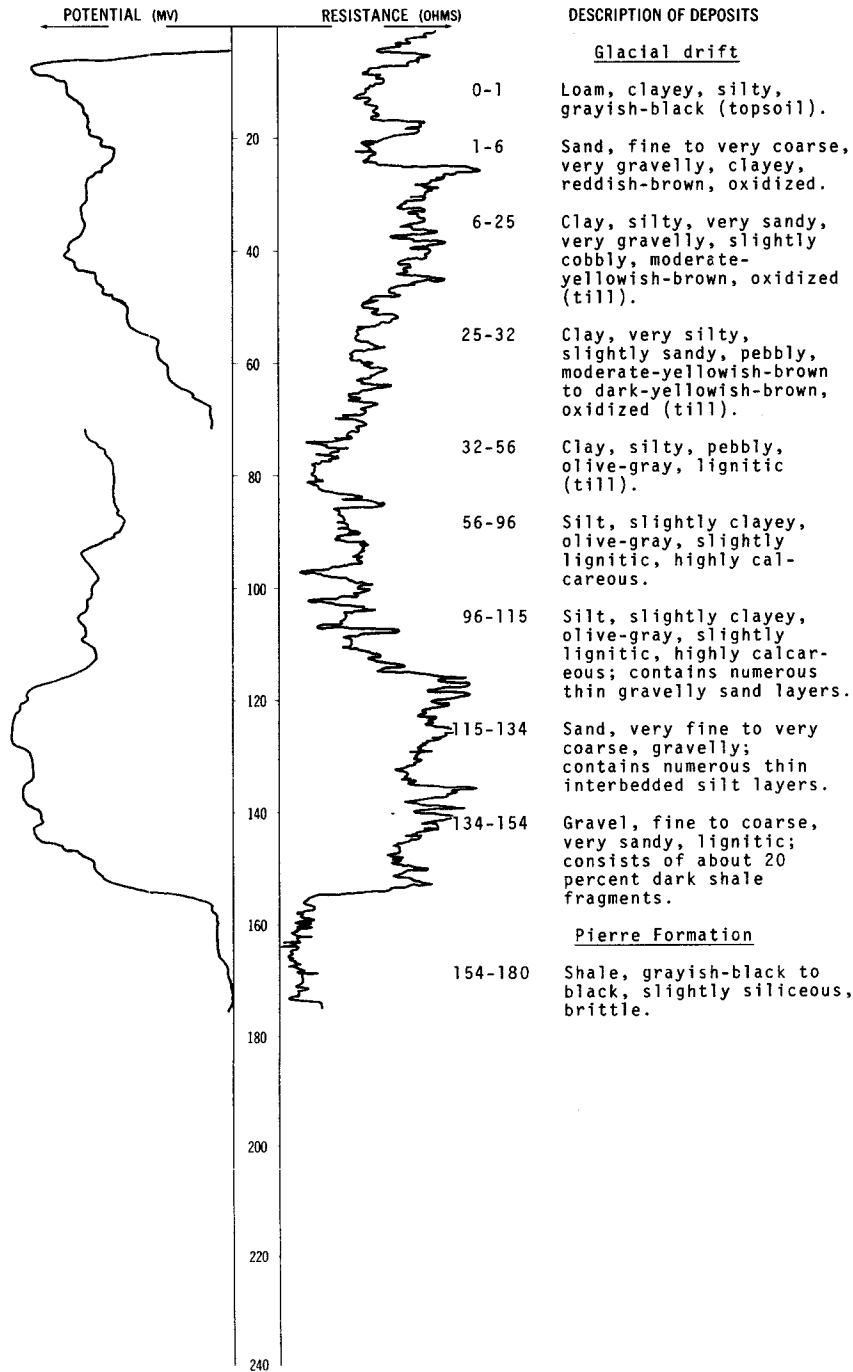


LOCATION: 153-065-03ABB

ALTITUDE: 1457  
(FT. MSL)

DATE DRILLED: October 1974

DEPTH: 180  
(FT)

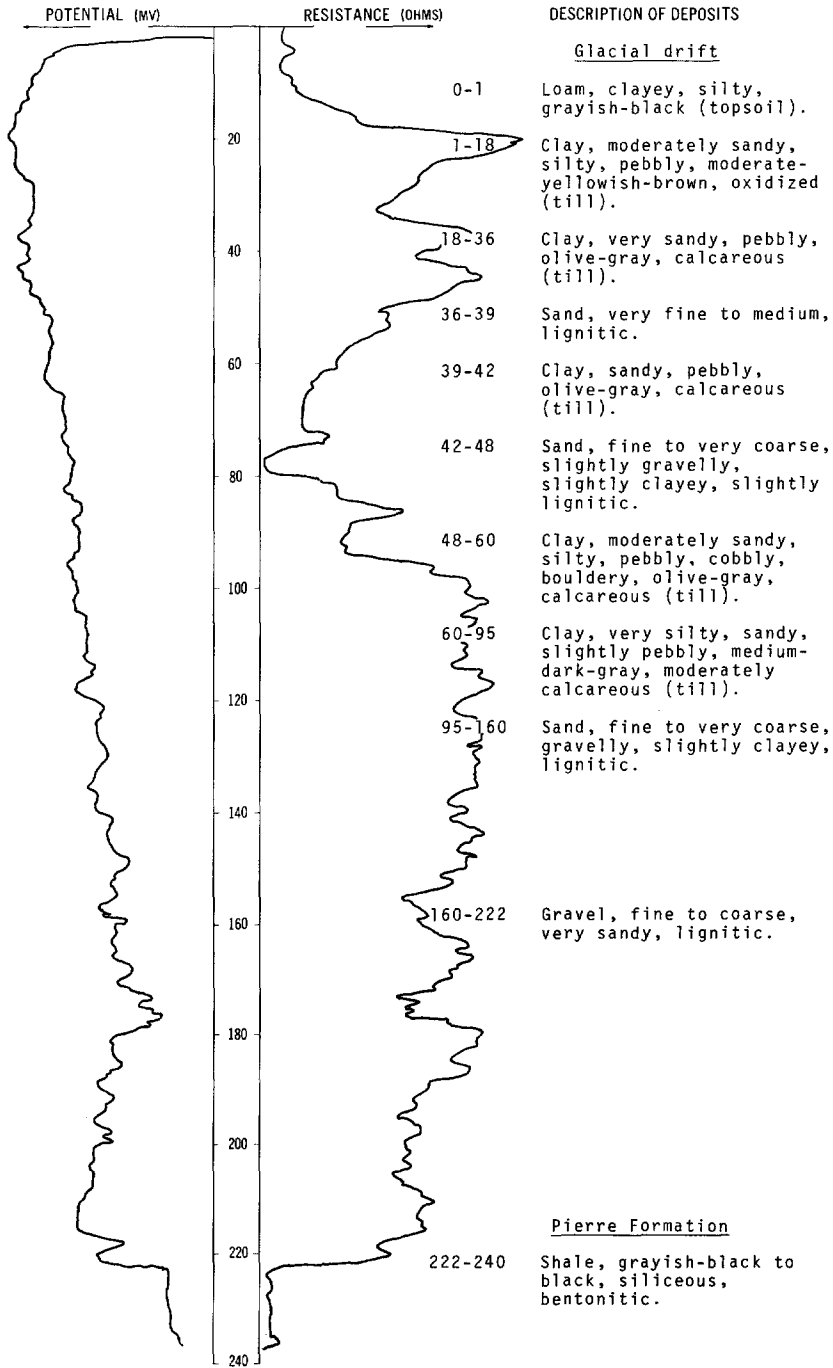


LOCATION: 153-065-03BBB

DATE DRILLED: August 1973

ALTITUDE: 1457  
(FT, MSL)

DEPTH: 240  
(FT)

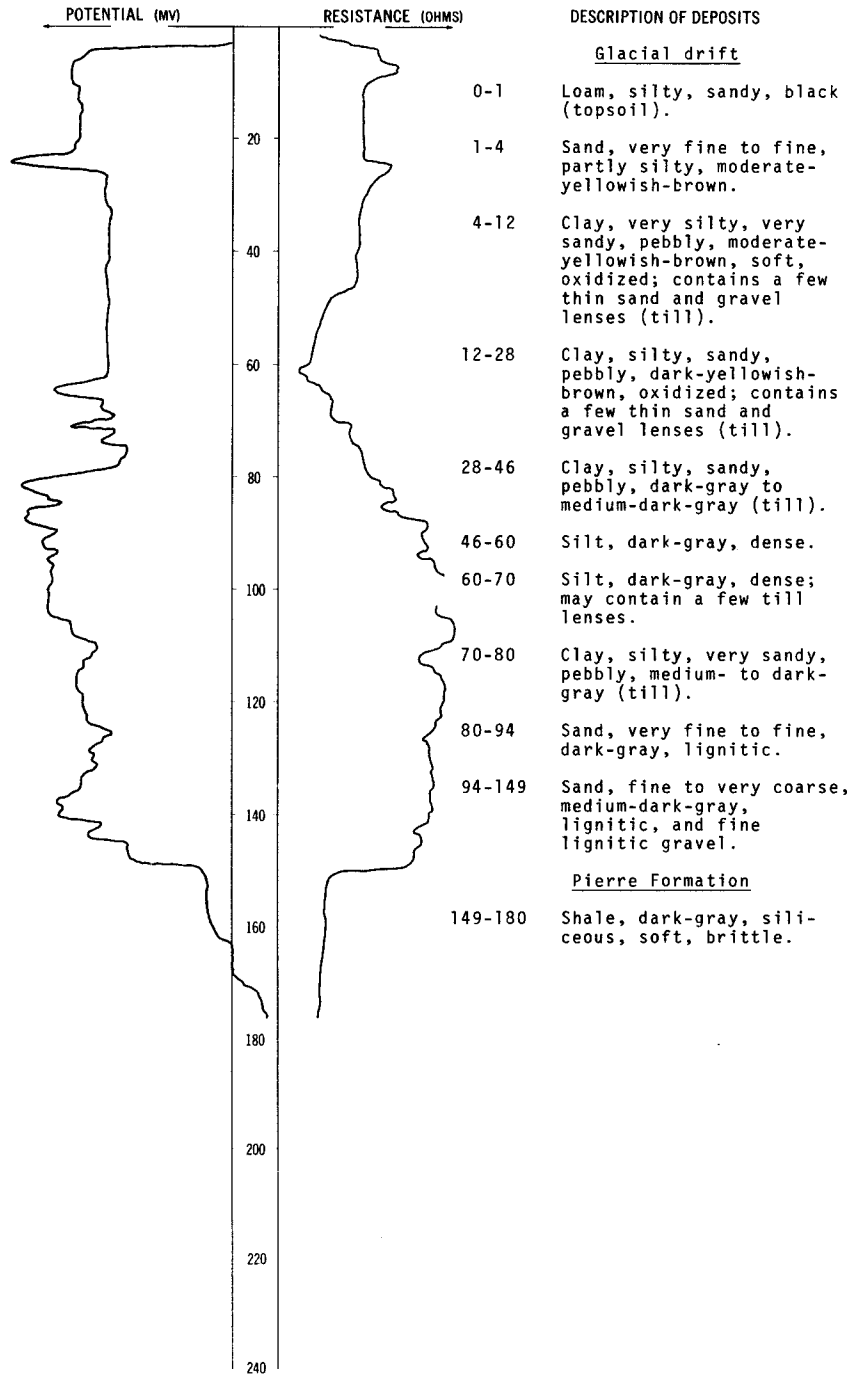


LOCATION: 153-065-04CCD

ALTITUDE: 1448  
(FT, MSL)

DATE DRILLED: August 1974

DEPTH: 180  
(FT)

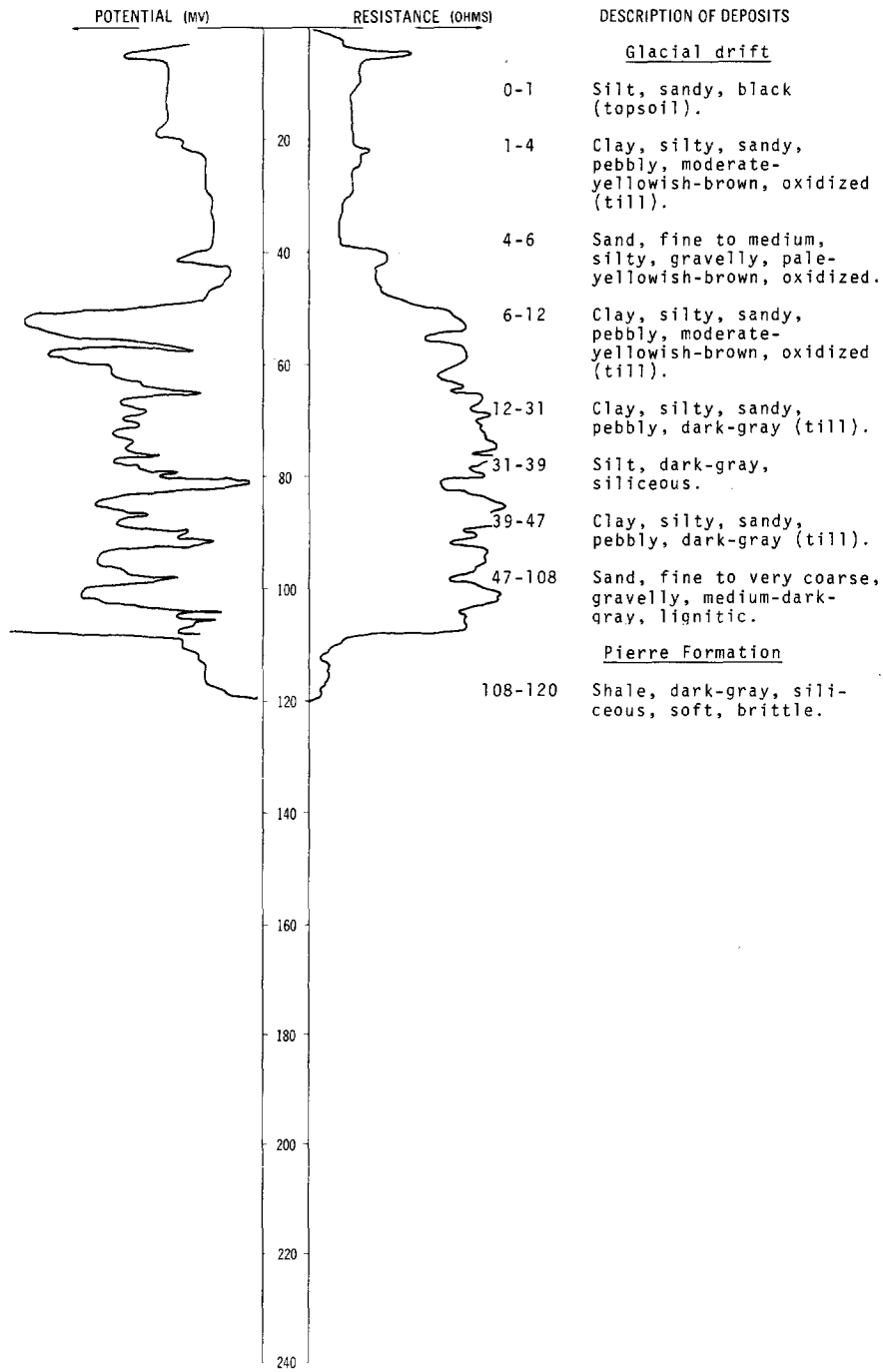


LOCATION: 153-065-09BBA1

ALTITUDE: 1430  
(FT, MSL)

DATE DRILLED: August 1974

DEPTH: 120  
(FT)

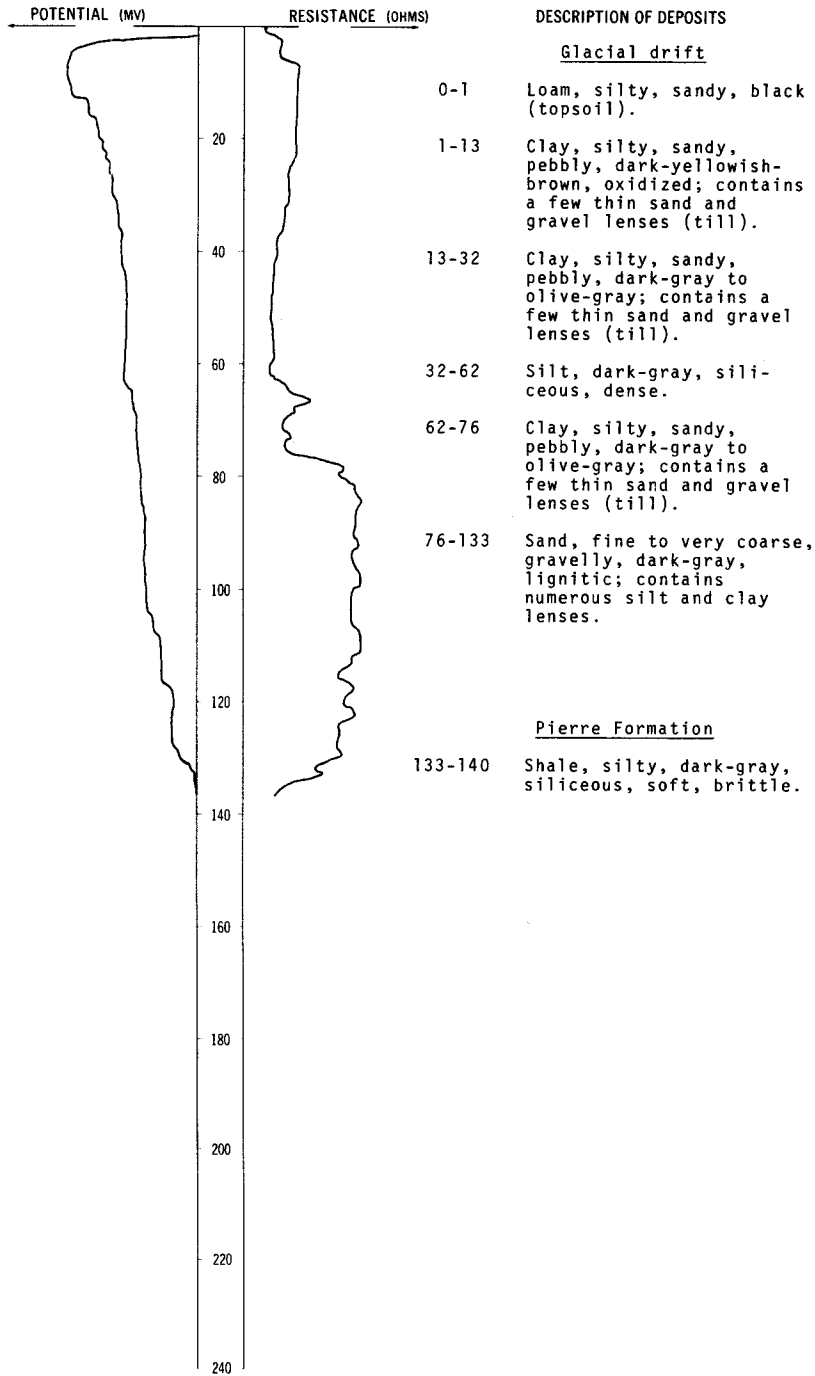


LOCATION: 153-065-09BBA2

ALTITUDE: 1433  
(FT, MSL)

DATE DRILLED: August 1974

DEPTH: 140  
(FT)



153-065-098BA3  
NDSWC PW

Altitude: 1443 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, silty, sandy, yellowish-brown, oxidized (till)-----	19	19
	Clay, silty, sandy, gravelly, olive-gray (till)-----	9	28
	Gravel-----	2	30
	Clay, silty, sandy, gravelly, olive-gray (till)-----	4	34
	Gravel-----	2	36
	Clay, silty, sandy, gravelly, olive-gray (till)-----	30	66
	Sand, medium to coarse, gravelly, lignitic; contains wood fragments at base-----	60	126
Pierre Formation:	Shale, dark-gray, solid-----	4	130

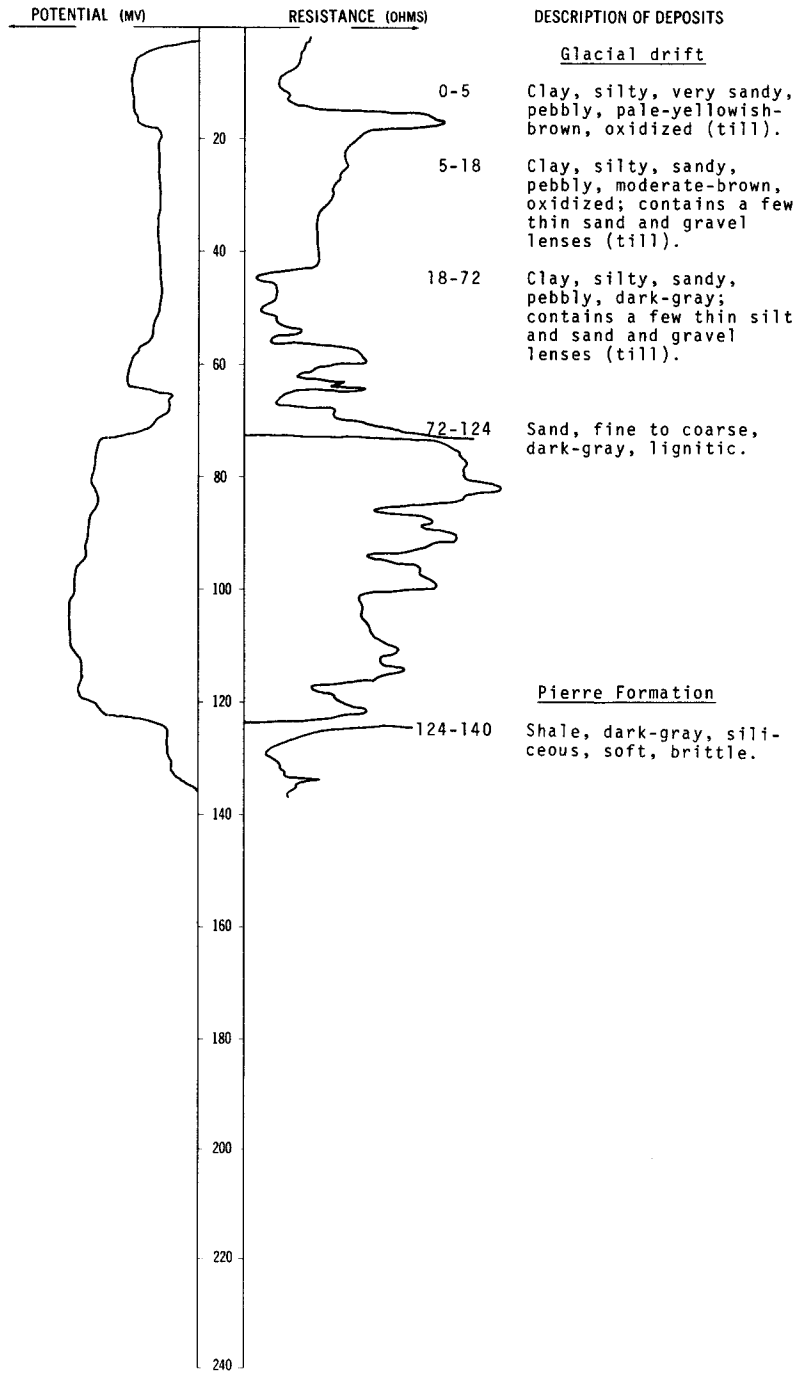


LOCATION: 153-065-09BBD

DATE DRILLED: August 1974

ALTITUDE: 1441  
(FT, MSL)

DEPTH: 140  
(FT)

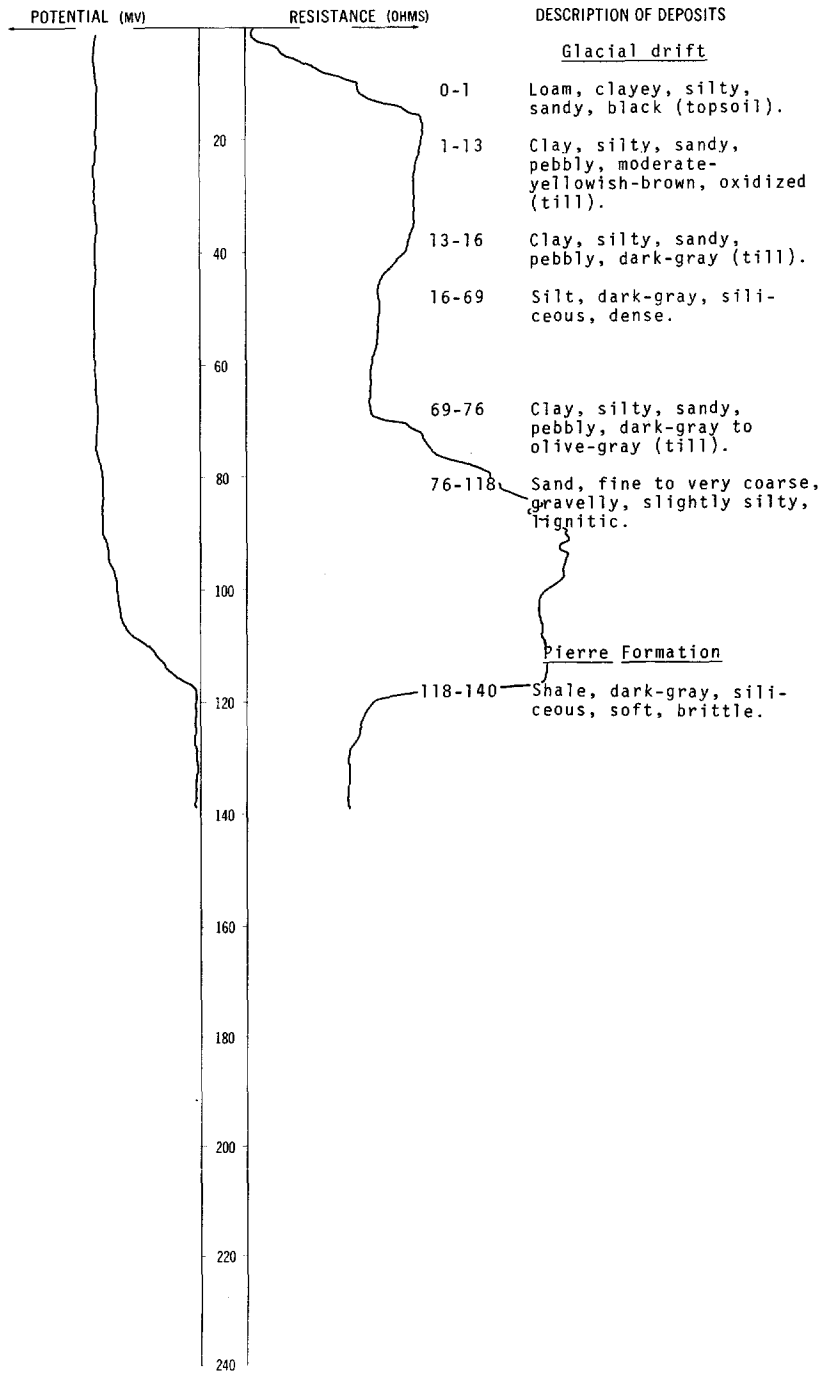


LOCATION: 153-065-09BCD

DATE DRILLED: August 1974

ALTITUDE: 1440  
(FT. MSL)

DEPTH: 140  
(FT)

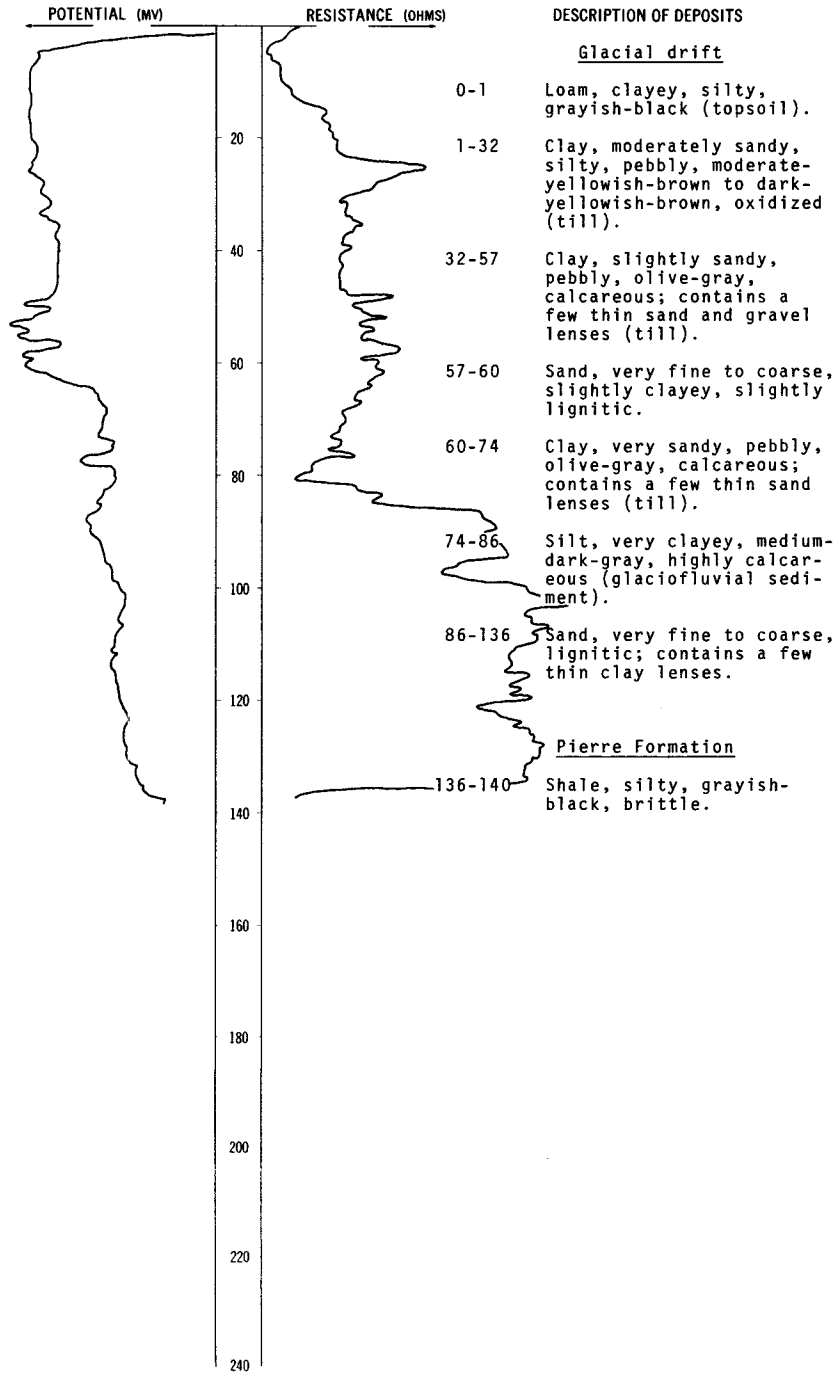


LOCATION: 153-065-09DDD2

DATE DRILLED: August 1973

ALTITUDE: 1458  
(FT, MSL)

DEPTH: 140  
(FT)

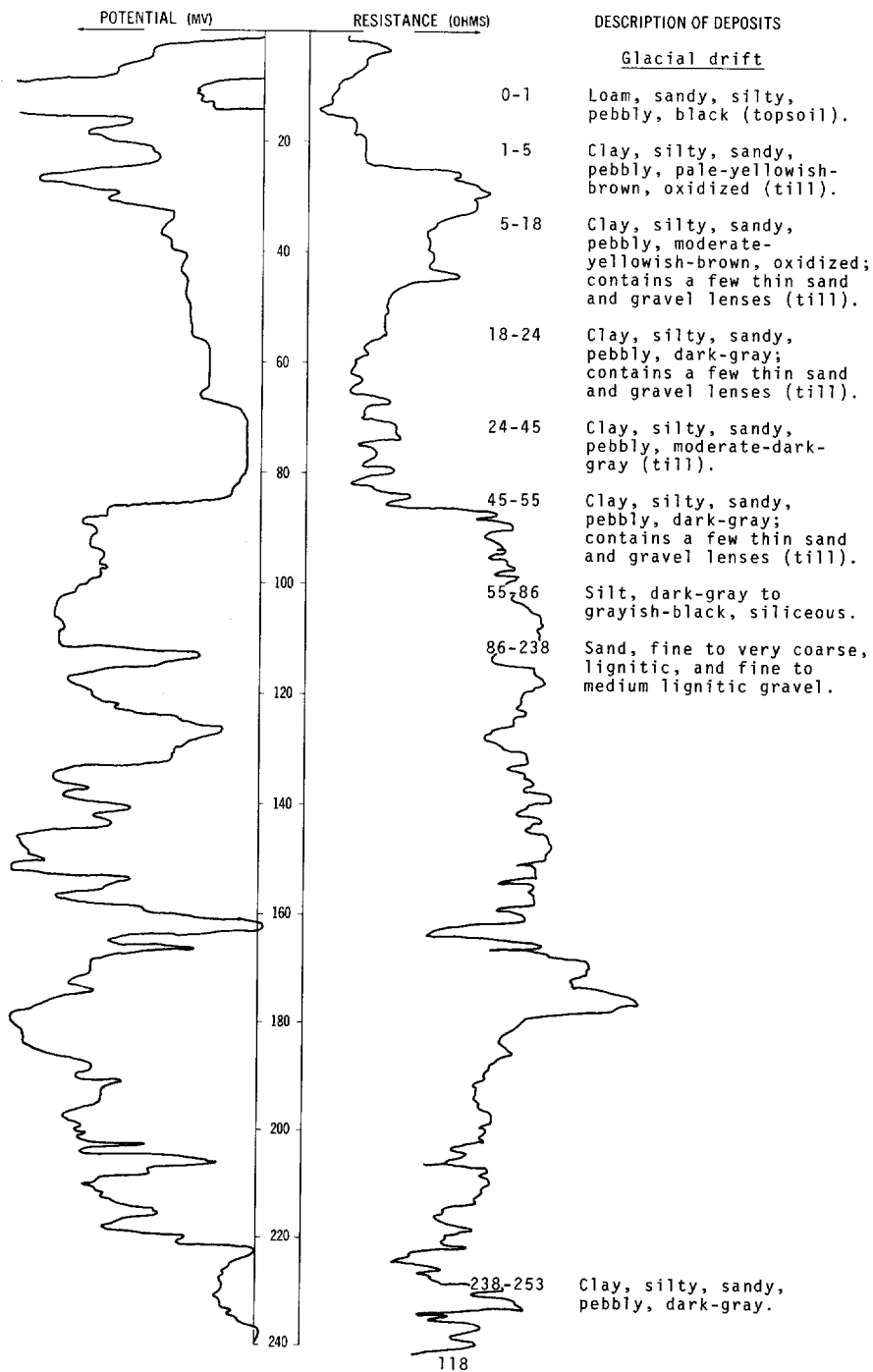


LOCATION: 153-065-10888

DATE DRILLED: August 1974

ALTITUDE: 1460  
(FT, MSL)

DEPTH: 280  
(FT)

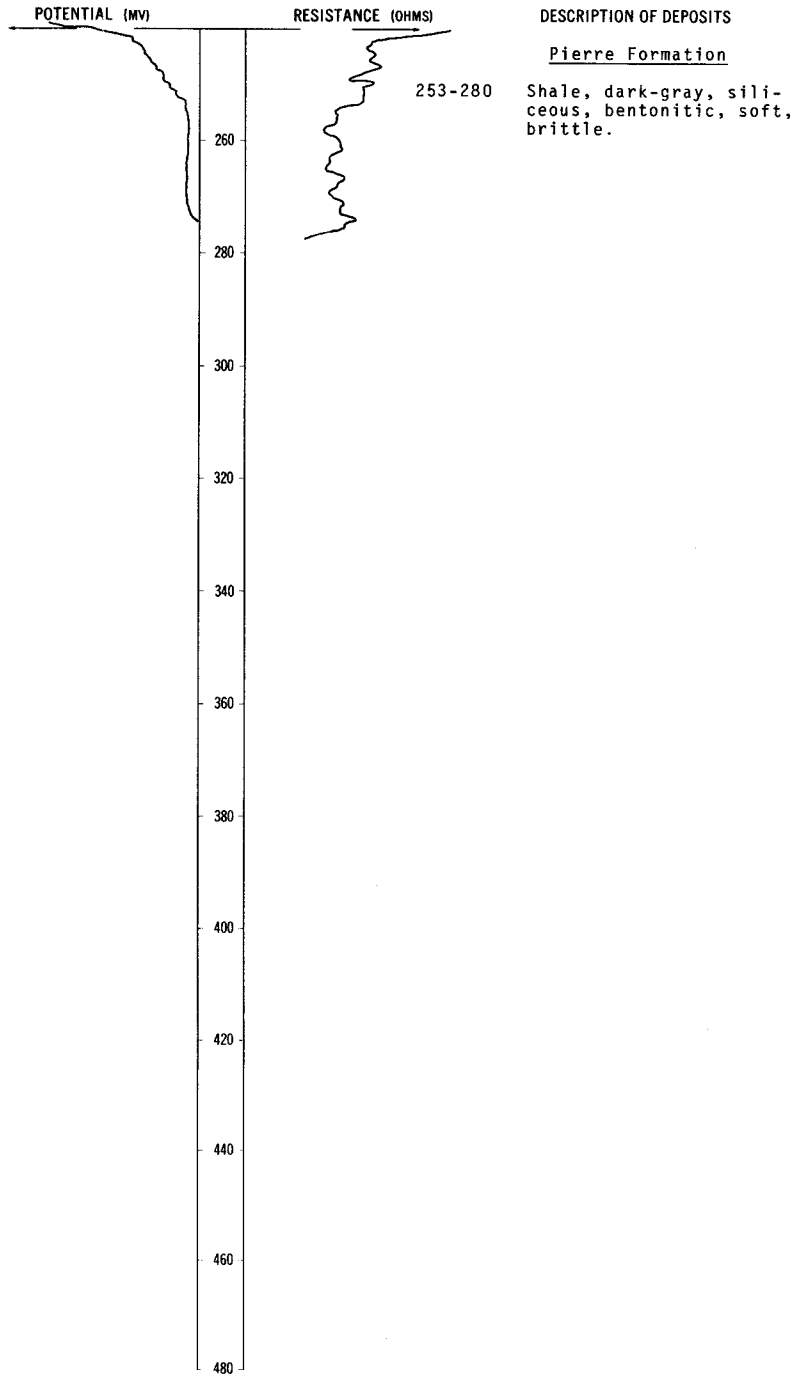


LOCATION: 153-065-10BBB

DATE DRILLED: August 1974

ALTITUDE: 1460  
(FT, MSL)

DEPTH: 280  
(FT)

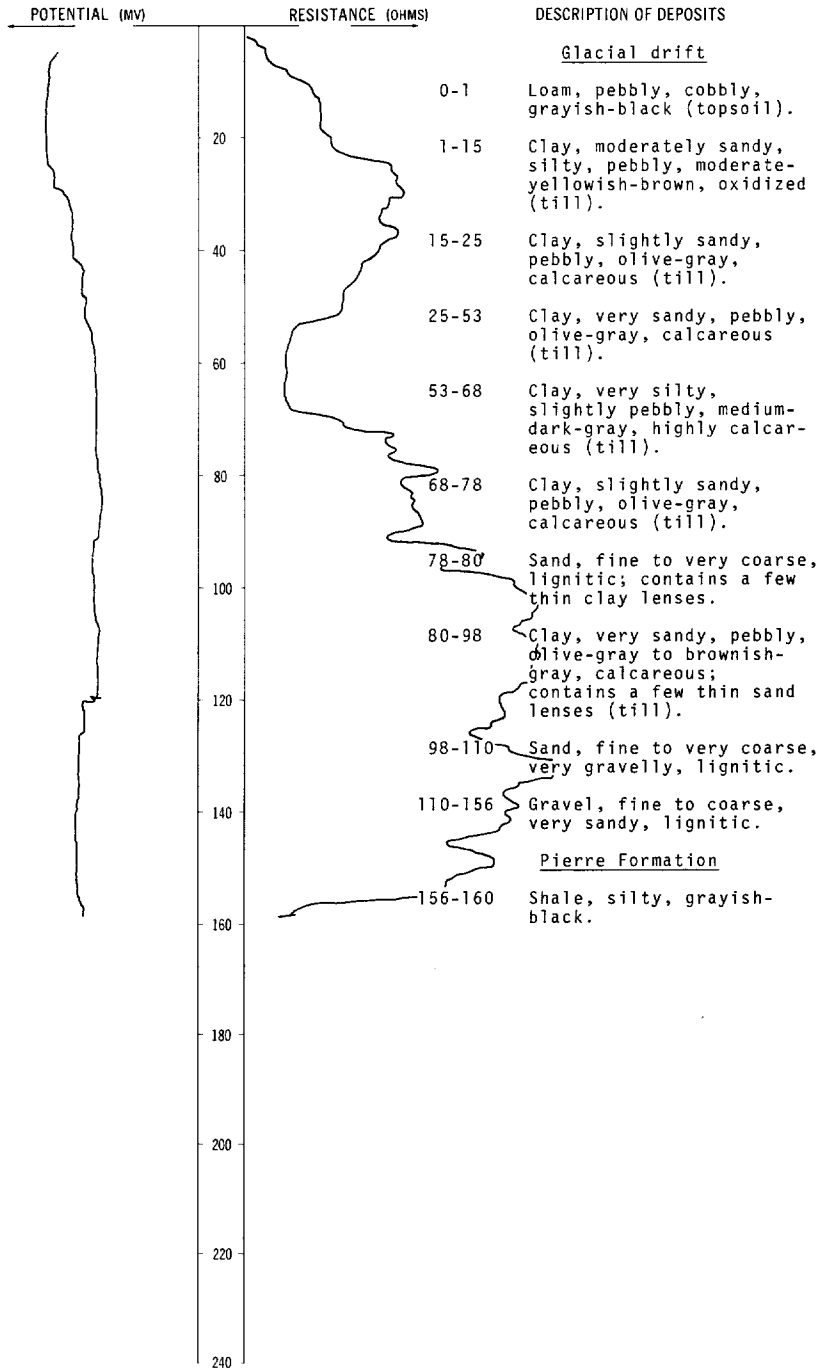


LOCATION: 153-065-11ADD

DATE DRILLED: August 1973

ALTITUDE: 1464  
(FT, MSL)

DEPTH: 160  
(FT)



153-065-12BBB  
 Test hole 193  
 (Log modified from Paulson and Akin, 1964, p. 103)

Altitude: 1482 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till, gray-----	3	4
	Till, light-brown-----	24	28
	Till, gray-----	3	31
	Sand, coarse, very clayey, gray-----	4	35
	Till, sandy, gray-----	35	70
	Till, gray-----	58	128
	Sand, coarse; gravel, fine, very clayey, gray-----	28	156
	Till, sandy, gravelly, gray-----	21	177
Pierre Formation:			
	Shale, gray-----	8	185

153-065-12CCD  
 Test hole 191  
 (Log modified from Paulson and Akin, 1964, p. 103)

Altitude: 1443 feet

Glacial drift:			
	Topsoil, black-----	2	2
	Till or clay, light-gray-----	2	4
	Till, light-brown-----	15	19
	Till, gray-----	149	168
Pierre Formation:			
	Shale, gray-----	7	175

153-065-12DDD  
 Test hole 195  
 (Log modified from Paulson and Akin, 1964, p. 104)

Altitude: 1440 feet

Glacial drift:			
	Clay, sand, and gravel-----	1	1
	Gravel, coarse, well-sorted-----	4	5
	Gravel, coarse; sand, fine to medium-----	7	12
	Gravel, fine to coarse; sand, fine to coarse, light-brown-----	12	24
	Gravel, sand, and clay, light-brown-----	7	31
	Clay, gray-----	17	48
	Till, gray-----	39	87
	Sand, coarse; gravel, fine, gray; about one-half detrital shale, well sorted toward bottom-----	56	143
Pierre Formation:			
	Shale, gray-----	7	150

153-065-13CAB  
 Test hole 196  
 (Log modified from Paulson and Akin, 1964, p. 104)

Altitude: 1442 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, sandy, black-----	1	1
	Clay, sandy, light-gray-----	4	5
	Clay and sand, light-gray-----	4	9
	Clay and sand, light-brown-----	7	16
	Till, light-brown-----	26	42
	Till, gray-----	7	49
	Sand, coarse; gravel, fine, clayey, gray-----	9	58
	Gravel, fine to coarse; very little detrital shale, well sorted-----	14	72
	Till, gray-----	3	75
	Gravel, fine to coarse; very little detrital shale, well sorted-----	3	78
	Till, gray-----	29	107
	Sand and gravel, clayey, gray-----	8	115
	Sand, coarse; gravel, fine, gray; about one-third detrital shale, well sorted-----	20	135
	Sand, coarse; gravel, fine, clayey, gray-----	10	145
	Sand, coarse; gravel, fine, gray, well-sorted-----	15	160
	Sand, fine to coarse; gravel, fine to medium, clayey, gray, poorly sorted-----	78	238
Pierre Formation:			
	Shale, gray-----	12	250



153-065-14888  
 Test hole 189

(Log modified from Paulson and Akin, 1964, p. 105)

Altitude: 1470 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-gray-----	1	2
	Till, light-brown-----	22	24
	Till, gray-----	3	27
	Sand and gravel, gray-----	3	30
	Till, gray-----	13	43
	Sand, gray-----	2	45
	Till, gray-----	12	57
	Sand, gray-----	2	59
	Till, gray-----	64	123
	Sand, very coarse; gravel, fine, clayey, gray-----	7	130
	Till, gray-----	17	147
	Sand, very coarse; gravel, fine, clayey, gray-----	23	170
	Sand, very coarse; gravel, fine, well-sorted, gray-----	22	192
	Till, gray-----	45	237
Pierre Formation:			
	Shale, gray-----	13	250

153-065-14CAA

(Log modified from Holbeck Well Service)

Altitude: 1490 feet

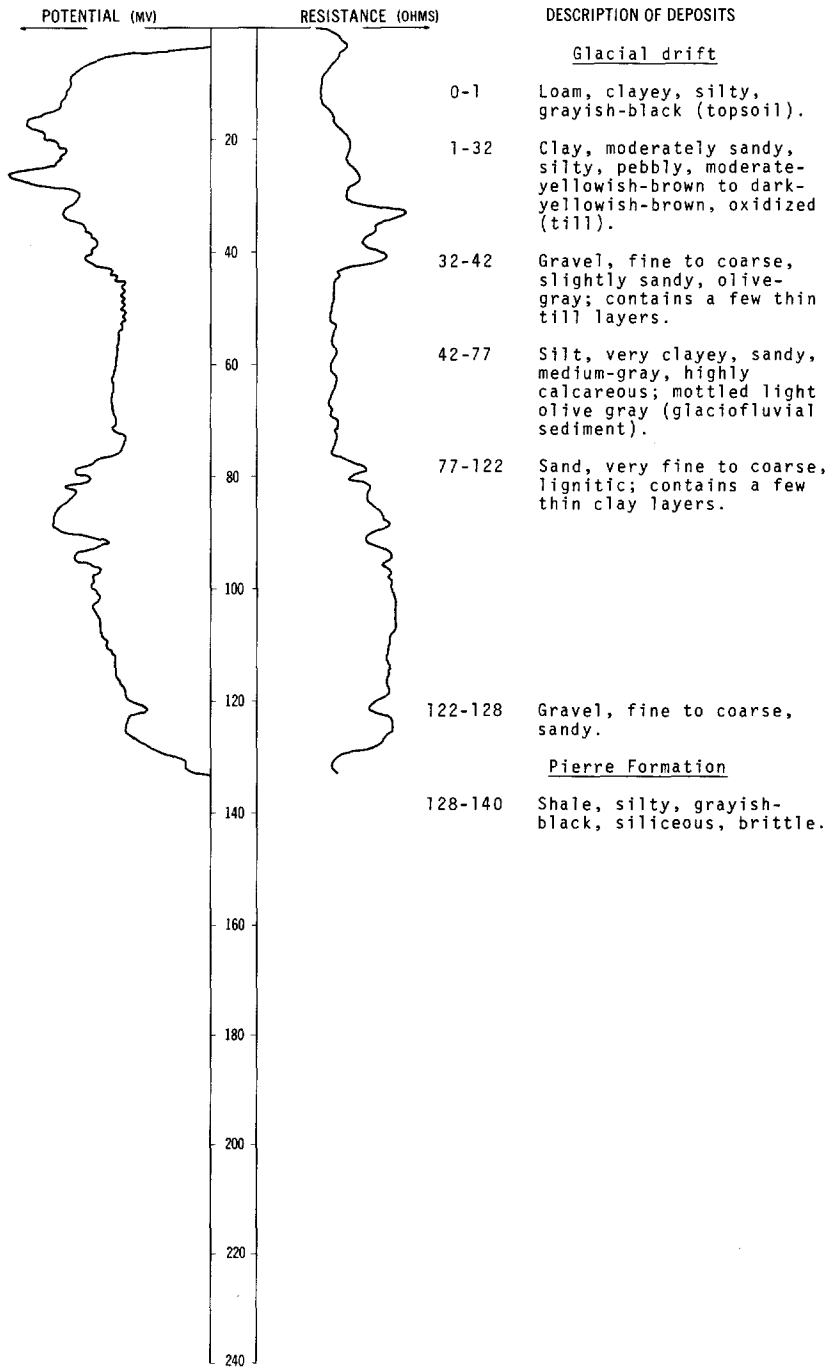
Glacial drift:			
	Topsoil-----	1.5	1.5
	Gravel, clayey-----	10.5	12
	Clay, yellow-----	44	56
	Clay, sandy, gray-----	46	102
	Sand, gray-----	14	116
Pierre Formation:			
	Shale-----	6	122

LOCATION: 153-065-14CCB

ALTITUDE: 1449  
(FT, MSL)

DATE DRILLED: August 1973

DEPTH: 140  
(FT)



153-065-14CCC  
 Test hole 190  
 (Log modified from Paulson and Akin, 1964, p. 105)

Altitude: 1443 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil-----	1	1
	Till, light-brown-----	24	25
	Sand and gravel, clayey, brown-----	5	30
	Sand, coarse; gravel, fine, well-sorted----	6	36
	Till, gray-----	50	86
	Sand, medium, very clayey, gray-----	4	90
	Till, gray-----	10	100
	Sand and gravel, gray; mainly detrital shale, very clayey-----	10	110
Pierre Formation:			
	Shale, gray-----	5	115

153-065-22BBB  
 Test hole 197  
 (Log modified from Paulson and Akin, 1964, p. 106)

Altitude: 1439 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil, sandy, gravelly, black-----	1	1
	Sand and gravel, very light brown, well-sorted-----	3	4
	Till, light-gray-----	2	6
	Till, light-brown-----	13	19
	Till, light-gray to brown-----	7	26
	Till, gray-----	62	88
	Sand and gravel, gray-----	2	90
	Till, gray-----	22	112
	Sand and gravel, gray-----	5	117
	Till, gray-----	7	124
	Sand, coarse; gravel, fine, gray; about one-half detrital shale, well sorted-----	16	140
	Gravel, medium and coarse; sand, coarse, gray, well-sorted-----	16	156
	Till, gray-----	7	163
	Sand, coarse; gravel, fine, gray; mainly detrital shale, very clayey-----	31	194
	Till, sandy, gravelly, gray-----	31	225
	Sand, fine; gravel, coarse, very clayey, gray-----	32	257
Pierre Formation:			
	Shale, gray-----	8	265

153-065-24BAA  
 Test hole 192  
 (Log modified from Paulson and Akin, 1964, p. 106)

Altitude: 1421 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Till, brown-----	4	4
	Gravel and sand-----	10	14
	Till, gray-----	45	59
	Till, sandy, gravelly, gray-----	6	65
	Sand and gravel, clayey, gray-----	47	112
Pierre Formation:			
	Shale, gray-----	68	180

153-065-30ABD  
 NDSWC 8880

Altitude: 1575 feet

Glacial drift:			
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	19	19
	Clay, slightly sandy, silty, pebbly, olive-gray, calcareous (till)-----	11	30
	Silt, medium-dark-gray to dark-gray, and medium-dark-gray to dark-gray shale; highly fractured shale fragments in a pebbly silt matrix-----	20	50
Pierre Formation:			
	Shale, grayish-black to black, siliceous, hard, brittle-----	10	60

153-065-31BBC  
 (Log modified from Carl Ringdahl Water Well Drilling Co.)

Altitude: 1438 feet

Glacial drift:			
	Sand, lake-----	6	6
	Clay, blue-----	18	24
	Gravel-----	2	26
	Silt, sandy-----	22	48
Pierre Formation:			
	Shale-----	32	80

154-061-09DAA  
NDSWC 8802

Altitude: 1502 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:	Loam, silty, clayey, grayish-black-----	1	1
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	11	12
	Clay, sandy, pebbly, gravelly, cobbly, bouldery, olive-gray (till)-----	33	45
Pierre Formation:	Shale, grayish-black, siliceous, brittle-----	15	60

154-061-14DDC  
USAF 32

Altitude: 1502 feet

Glacial drift:	Clay, silty, black-----	2	2
	Clay, sandy, silty, gravelly, brown-----	10	12
	Sand, fine, clayey, silty, gravelly, gray-----	4	16
	Clay, sandy, slightly gravelly, gray-----	38	54
	Shale and silt; dark-gray shale in a matrix of dense, dark-gray, clayey silt-----	17	71
Pierre Formation:	Shale, partly silty, dark-gray-----	59	130

154-061-22AAA  
NDSWC 8803

Altitude: 1505 feet

Glacial drift:	Clay, moderately sandy and silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	14	14
	Clay, sandy, gravelly, pebbly, olive-gray (till)-----	35	49
Pierre Formation:	Shale, grayish-black, siliceous, brittle-----	11	60

154-061-30AAA  
NOSWC 8804

Altitude: 1489 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Sand, fine to medium, light-brown, oxidized-----	7	7
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	5	12
	Clay, slightly sandy, pebbly, olive-gray (till)-----	10	22
Pierre Formation:			
	Shale, grayish-black, siliceous, slightly fractured-----	38	60

154-062-05BAC  
(Log from C. A. Simpson and Son)

Altitude: 1492 feet

Glacial drift:			
	Topsoil-----	1	1
	Clay, yellow-----	17	18
	Clay, blue-----	27	45
Pierre Formation:			
	Shale-----	85	130

154-062-05BBB  
(Log from C. A. Simpson and Son)

Altitude: 1492 feet

Glacial drift:			
	Topsoil-----	1	1
	Clay, yellow-----	17	18
	Clay, blue-----	22	40
Pierre Formation:			
	Shale-----	89	129

154-062-05CCA  
 USAF 2040

Altitude: 1482 feet

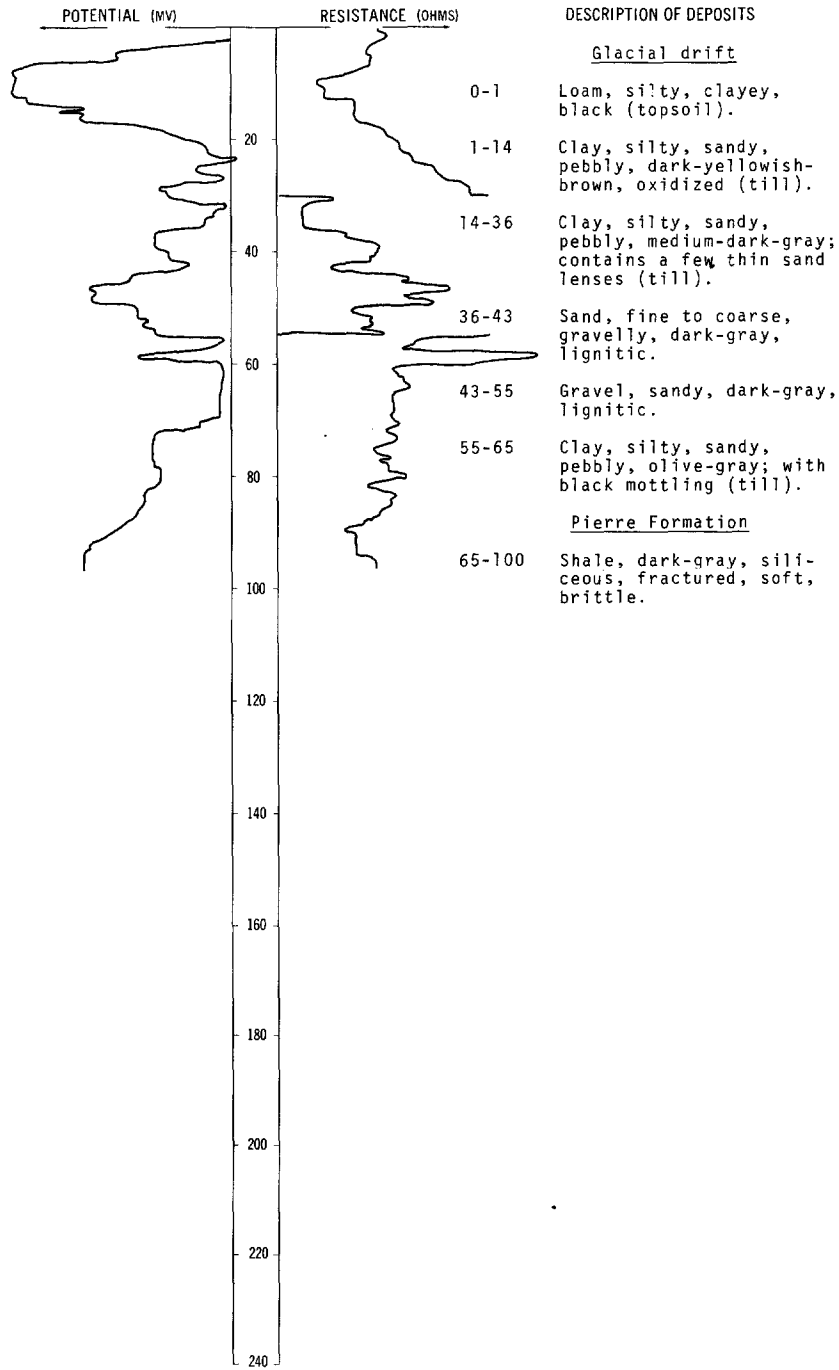
<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, silty, sandy, black-----	3	3
	Sand and clay; alternating seams of medium dense, clayey, fine sand and stiff, silty clay; yellowish-brown-----	7	10
	Clay, silty, sandy, slightly gravelly, gray-----	11	21
	Sand, fine, silty, light- and dark-gray-----	3	24
	Sand, fine to medium, silty, slightly clayey, dark-brownish- gray-----	3	27
	Clay, silty, sandy, slightly gravelly, gray-----	7	34
Pierre Formation:			
	Shale, gray to dark-gray, highly fractured-----	23	57
	Shale, light to dark-gray, partly bentonitic, highly fractured-----	27	84
	Shale, dark-gray, highly to slightly fractured-----	46	130

LOCATION: 154-062-06DDD

DATE DRILLED: September 1974

ALTITUDE: 1484  
(FT, MSL)

DEPTH: 100  
(FT)

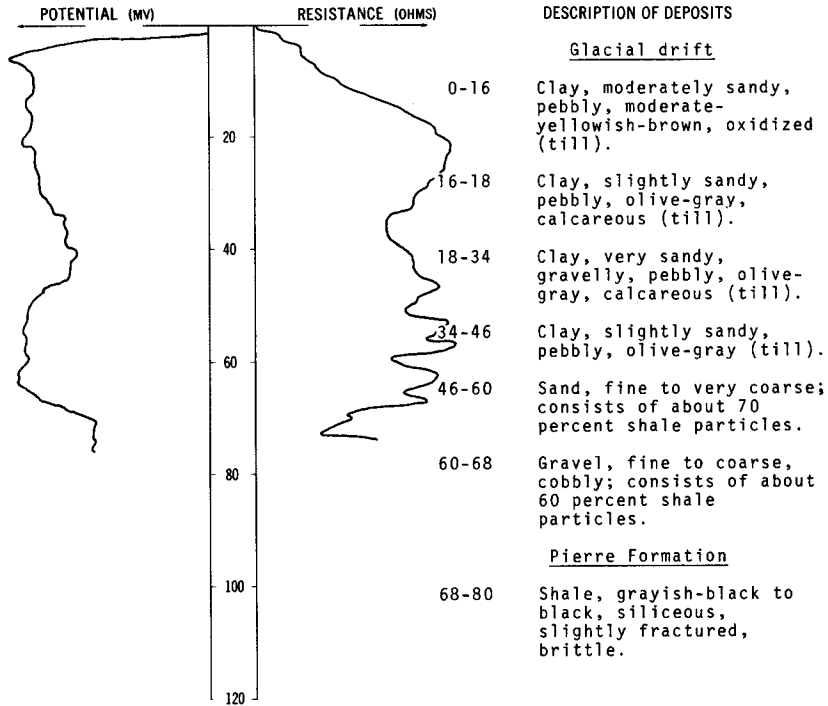




NDSWC 8843

LOCATION: 154-062-07DDD  
 ALTITUDE: 1485  
 (FT, MSL)

DATE DRILLED: August 1973  
 DEPTH: 80  
 (FT)



154-062-13ADD  
 NDSWC 8805

Altitude: 1505 feet

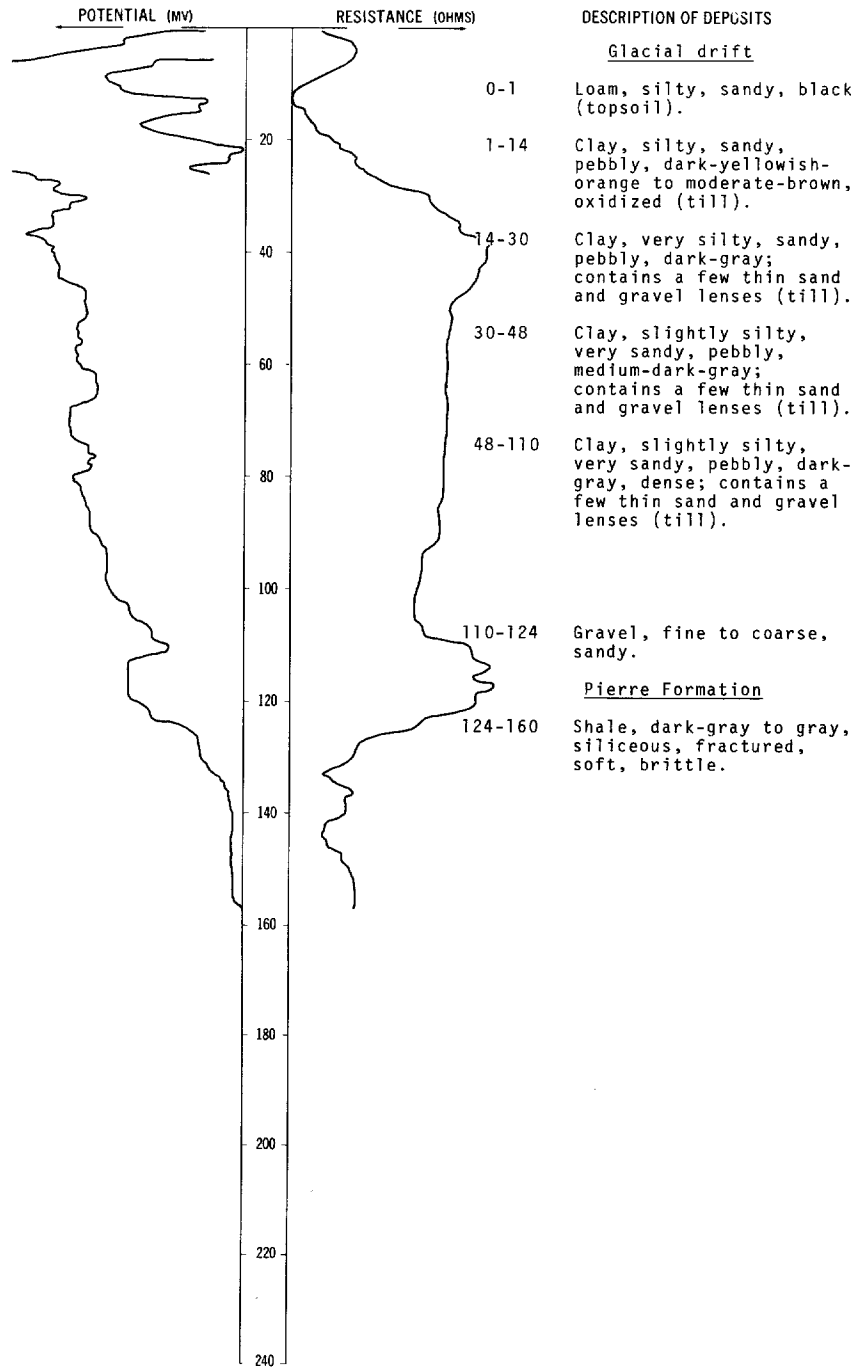
<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, clayey, silty, black (topsoil)-----	1	1
	Silt, clayey, sandy, dusky-yellow to moderate-yellowish-brown, oxidized (glaciofluvial sediment)-----	5	6
	Clay, moderately sandy, silty, moderate-yellowish-brown, oxidized (till)-----	5	11
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	16	27
	Clay, sandy, gravelly, pebbly, cobbly, olive-gray (till)-----	7	34
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured, brittle-----	26	60

LOCATION: 154-062-19AAA

ALTITUDE: 1487  
(FT, MSL)

DATE DRILLED: September 1974

DEPTH: 160  
(FT)



154-062-25AAD  
USAF 37

Altitude: 1498 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, silty, black-----	2	2
	Clay, silty, sandy, slightly gravelly, brown-----	6	8
	Sand, fine to coarse, clayey, silty, slightly gravelly, brown-----	5	13
	Clay, sandy; silty, slightly gravelly, grayish-brown-----	5	18
	Clay, sandy, silty, slightly gravelly, gray-----	14	32
	Shale and clay; angular fragments of hard dark-gray shale in a matrix of silty clay-----	8	40
Pierre Formation:			
	Shale, dark-gray, slightly to moderately fractured-----	90	130

154-062-25DAD  
USAF 2037

Altitude: 1506 feet

Glacial drift:			
	Sand, clayey, slightly gravelly, dark-brown-----	3	3
	Clay, silty, sandy, slightly gravelly, brown-----	5	8
	Clay, silty, sandy, slightly gravelly, brown-----	16	24
	Clay, silty, sandy, slightly gravelly, gray-----	17	41
	Sand, fine, clayey, dark- grayish-brown-----	4	45
	Shale and clay, dark-gray; hard shale fragments in a silty clay and crushed shale matrix-----	5	50
Pierre Formation:			
	Shale, dark-gray, highly fractured, brittle-----	13	63
	Shale, dark-gray, highly to moderately fractured, brittle; contains an occasional bentonite seam-----	69	132

154-062-29AAA  
NDSWC 8814

Altitude: 1485 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, silty, pebbly, grayish-black (topsoil)-----	1	1
	Clay, moderately silty, moderately sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	11	12
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	8	20
	Sand, fine to medium, dark-gray-----	5	25
	Clay, sandy, silty, gravelly, olive-gray, calcareous (till)-----	6	31
	Gravel, fine to coarse, sandy, clayey-----	3	34
	Clay, sandy, gravelly, pebbly, olive-gray, calcareous (till)-----	4	38
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured, brittle-----	22	60

154-062-31DDA  
USAF 39-1

Altitude: 1482 feet

Glacial drift:			
	Clay, silty, black-----	2	2
	Sand, fine to coarse, clayey, slightly gravelly, brown-----	6	8
	Clay, sandy, silty, slightly gravelly, brown-----	3	11
	Clay, sandy, silty, slightly gravelly, brown to gray-----	6	17
	Clay, sandy, silty, slightly gravelly, gray-----	10	27
	Sand, fine, clayey, silty, gray-----	3	30
	Silt and clay, gray-----	27	57
	Clay, sandy, silty, slightly gravelly, gray-----	34	91
	Silt, clayey, gray-----	4	95
	Clay, sandy, silty, slightly gravelly, gray-----	14	109
	Clay, silty, gray, bentonitic-----	5	114
	Silt, clayey, slightly sandy, slightly gravelly, gray-----	5	119
	Silt, sandy, clayey, slightly gravelly, gray-----	11	130

154-062-35ABB  
NDSWC 8815

Altitude: 1506 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, clayey, silty, grayish-black (topsoil)-----	1	1
	Clay, moderately sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	13	14
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	24	38
	Clay, very sandy, pebbly, gravelly, olive-gray, calcareous (till)-----	13	51
	Silt, clayey, sandy, medium-dark-gray, highly calcareous (till)-----	22	73
	Clay, moderately silty, very slightly sandy, slightly pebbly, slightly cobbly, olive-gray, calcareous (till)-----	17	90
	Silt, clayey, sandy, medium-dark-gray, highly calcareous, hard, brittle (till)-----	16	106
	Clay, sandy, silty, pebbly, olive-gray, calcareous (till)-----	9	115
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured, brittle-----	5	120

154-063-05CCC  
Test hole 127  
(Log from Paulson and Akin, 1964, p. 115)

Altitude: 1487 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-brown-----	18	19
	Till, gray-----	7	26
	Sand and gravel, gray-----	1	27
	Till, gray-----	11	38
Pierre Formation:			
	Shale, gray-----	12	50

154-063-06AAA1  
 Test hole 126  
 (Log from Paulson and Akin, 1964, p. 115)

Altitude: 1471 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Sand, medium to coarse, gravelly, gray-brown, well-sorted-----	4	5
	Till, light-brown-----	2	7
	Till, gray-----	17	24
	Sand, medium; gravel, fine to coarse, clayey, gray, poorly sorted-----	3	27
	Gravel, coarse, gray; mainly detrital shale, well sorted-----	9	36
Pierre Formation:			
	Shale, gray-----	4	40

154-063-06AAA2  
 NDSWC 9081

Altitude: 1476 feet

Glacial drift:			
	Sand, fine to coarse, silty, moderate-yellowish-brown, oxidized-----	8	8
	Clay, silty, sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	7	15
Pierre Formation:			
	Shale, grayish-black, siliceous, fractured, soft, brittle-----	25	40

154-063-07ABB  
 Test hole 128  
 (Log modified from Paulson and Akin, 1964, p. 116)

Altitude: 1485 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil and clay, black-----	1	1
	Till, light-brown-----	21	22
	Sand and gravel, light-brown-----	3	25
	Till, gray-----	31	56
Pierre Formation:			
	Shale, gray-----	14	70

154-063-10CCC  
 NDSWC 9096

Altitude: 1483 feet

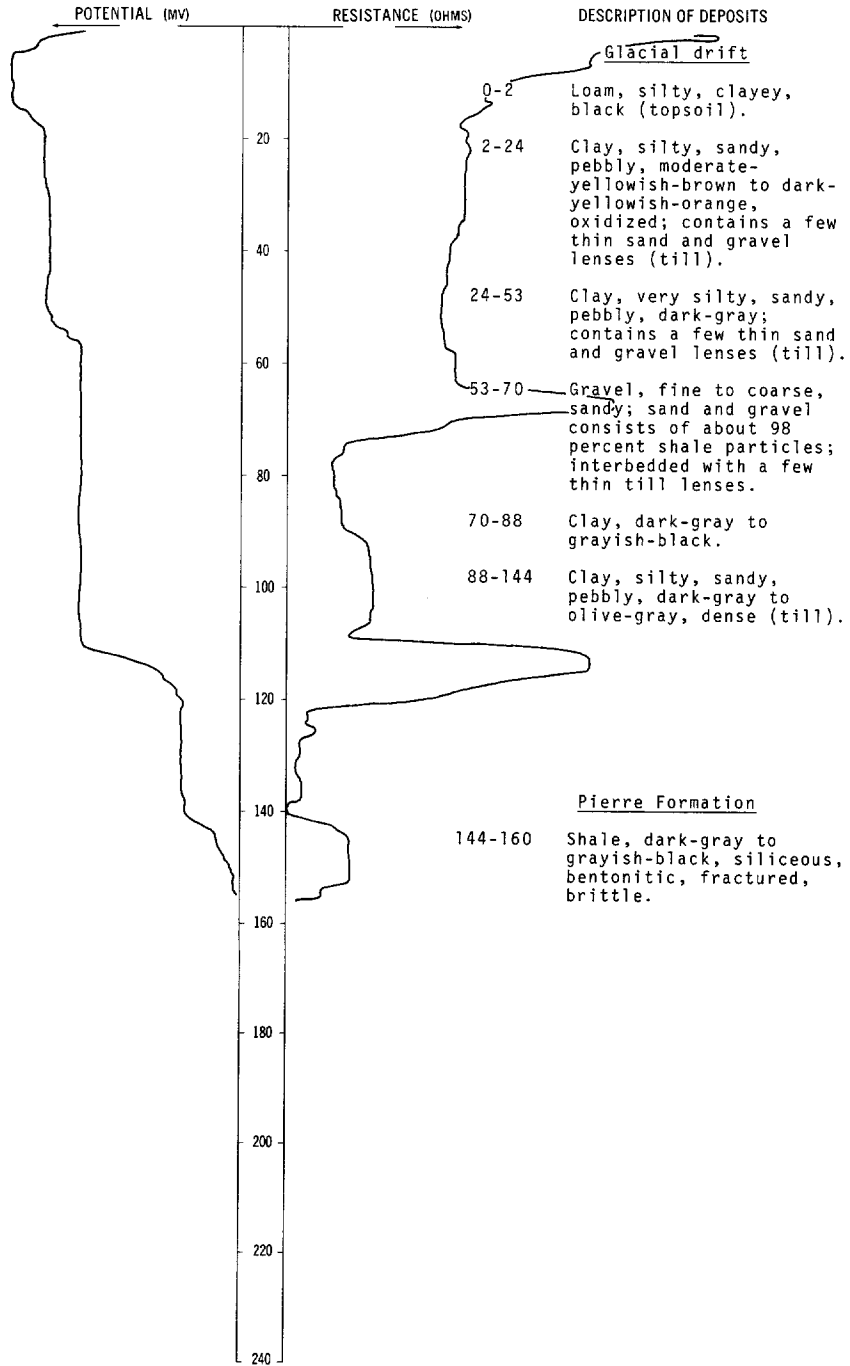
Glacial drift:			
	Clay, very sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	16	16
Pierre Formation:			
	Shale, dark-gray, siliceous, moderately soft to soft at top and more brittle and fractured with depth-----	14	30

LOCATION: 154-063-10DDD

DATE DRILLED: September 1974

ALTITUDE: 1475  
(FT, MSL)

DEPTH: 160  
(FT)





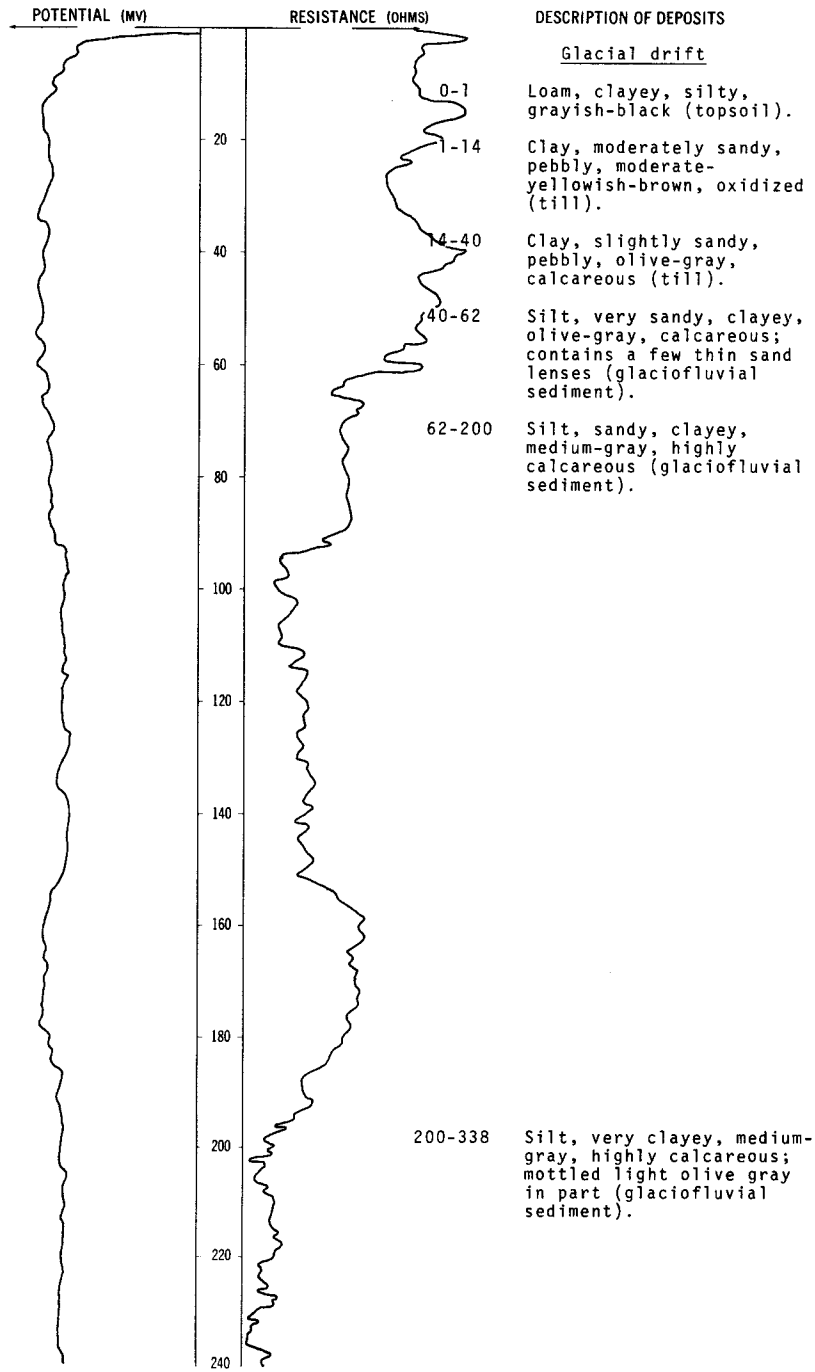
NDSWC 8842

LOCATION: 154-063-12BBB

ALTITUDE: 1485  
(FT, MSL)

DATE DRILLED: August 1973

DEPTH: 630  
(FT)



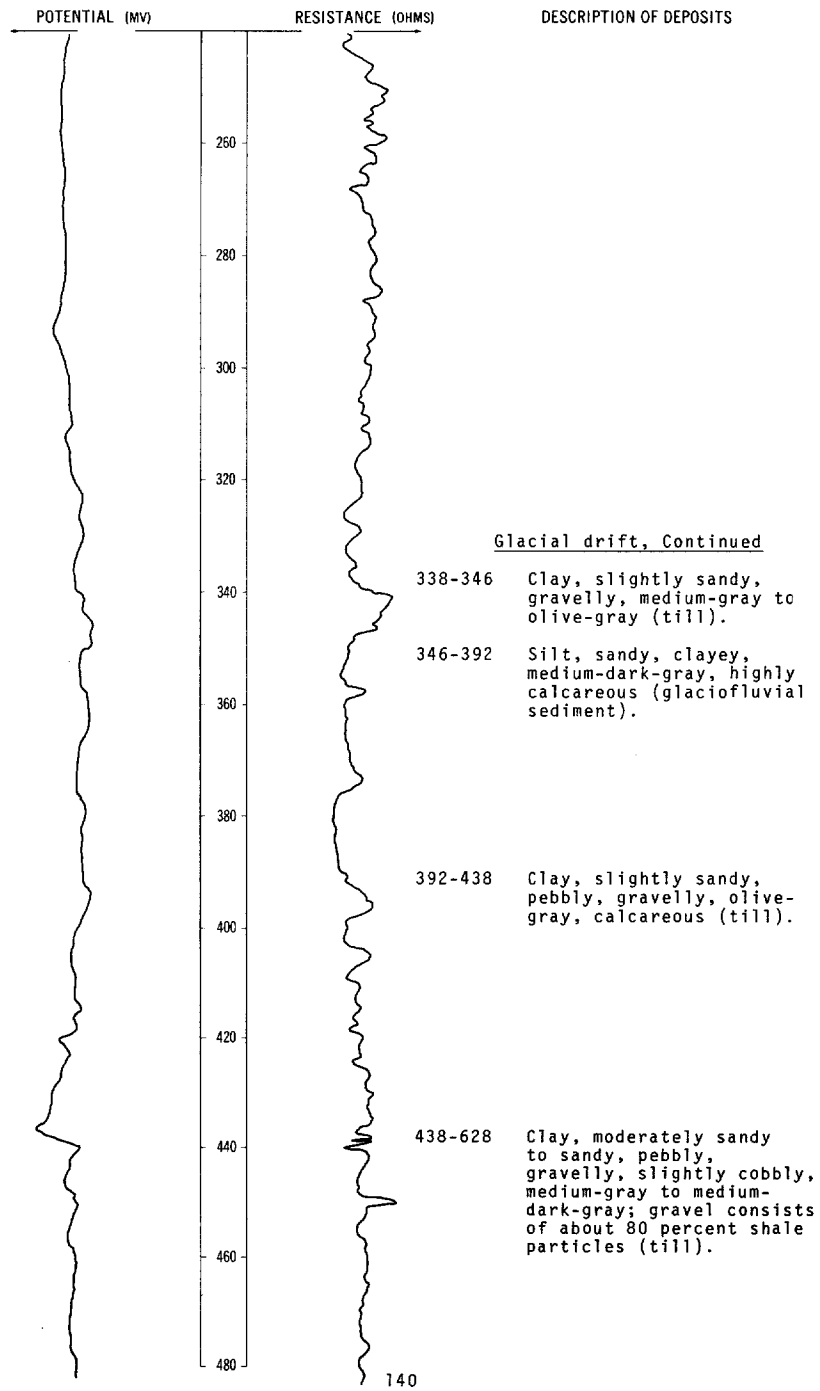
NDSWC 8842, Continued

LOCATION: 154-063-12BBB

DATE DRILLED: August 1973

ALTITUDE: 1485  
(FT, MSL)

DEPTH: 630  
(FT)

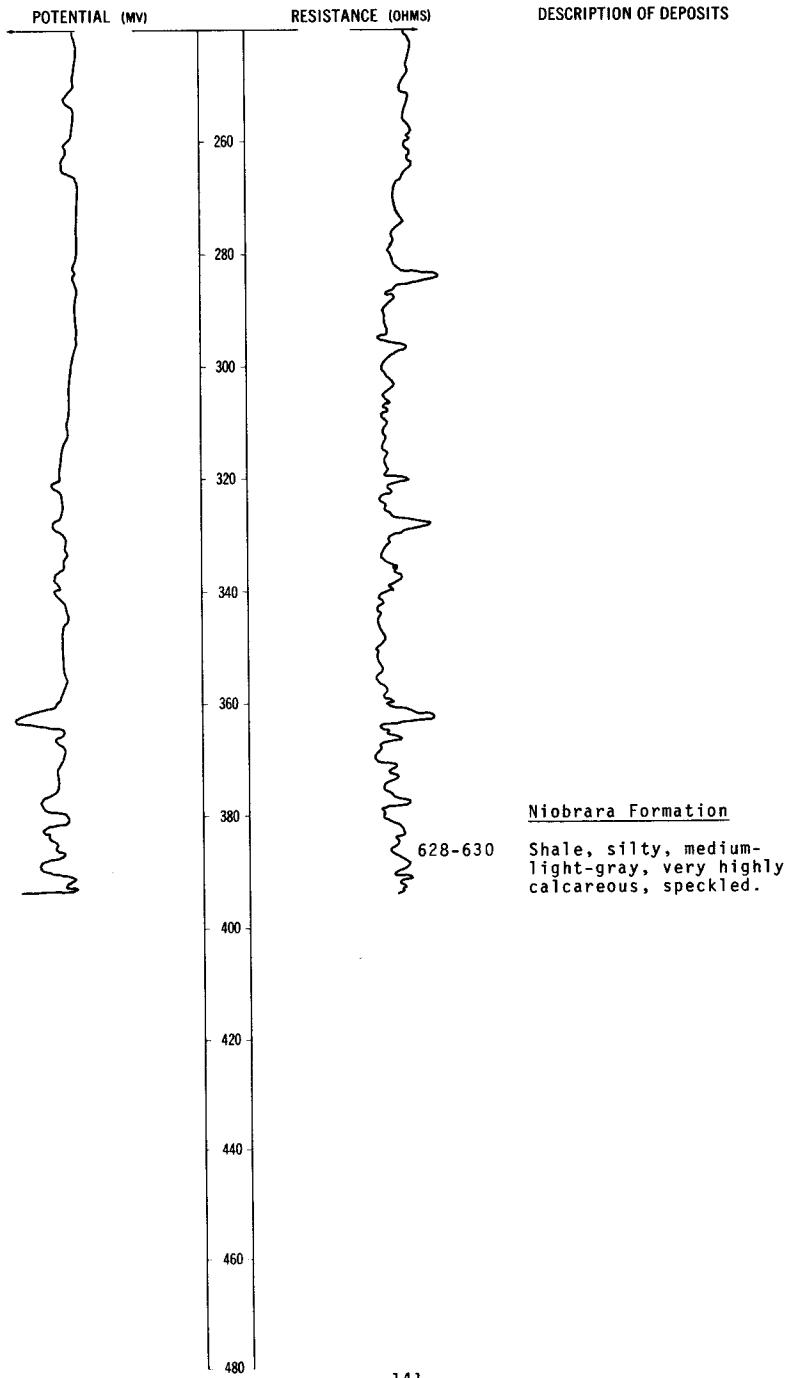


LOCATION: 154-063-12BBB

ALTITUDE: 1485  
(FT, MSL)

DATE DRILLED: August 1973

DEPTH: 630  
(FT)



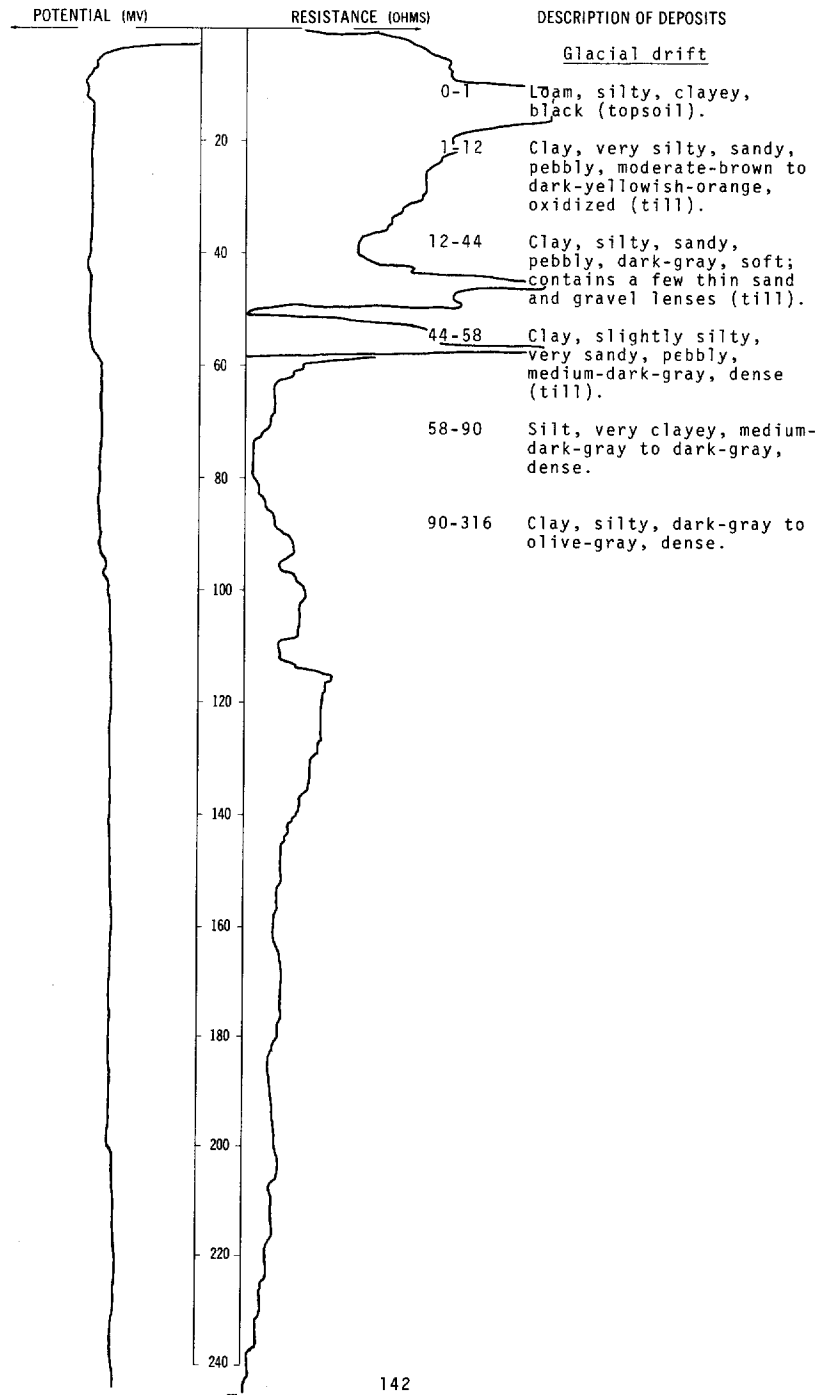
NDSWC 9094

LOCATION: 154-063-12CCC

DATE DRILLED: September 1974

ALTITUDE: 1484  
(FT, MSL)

DEPTH: 580  
(FT)



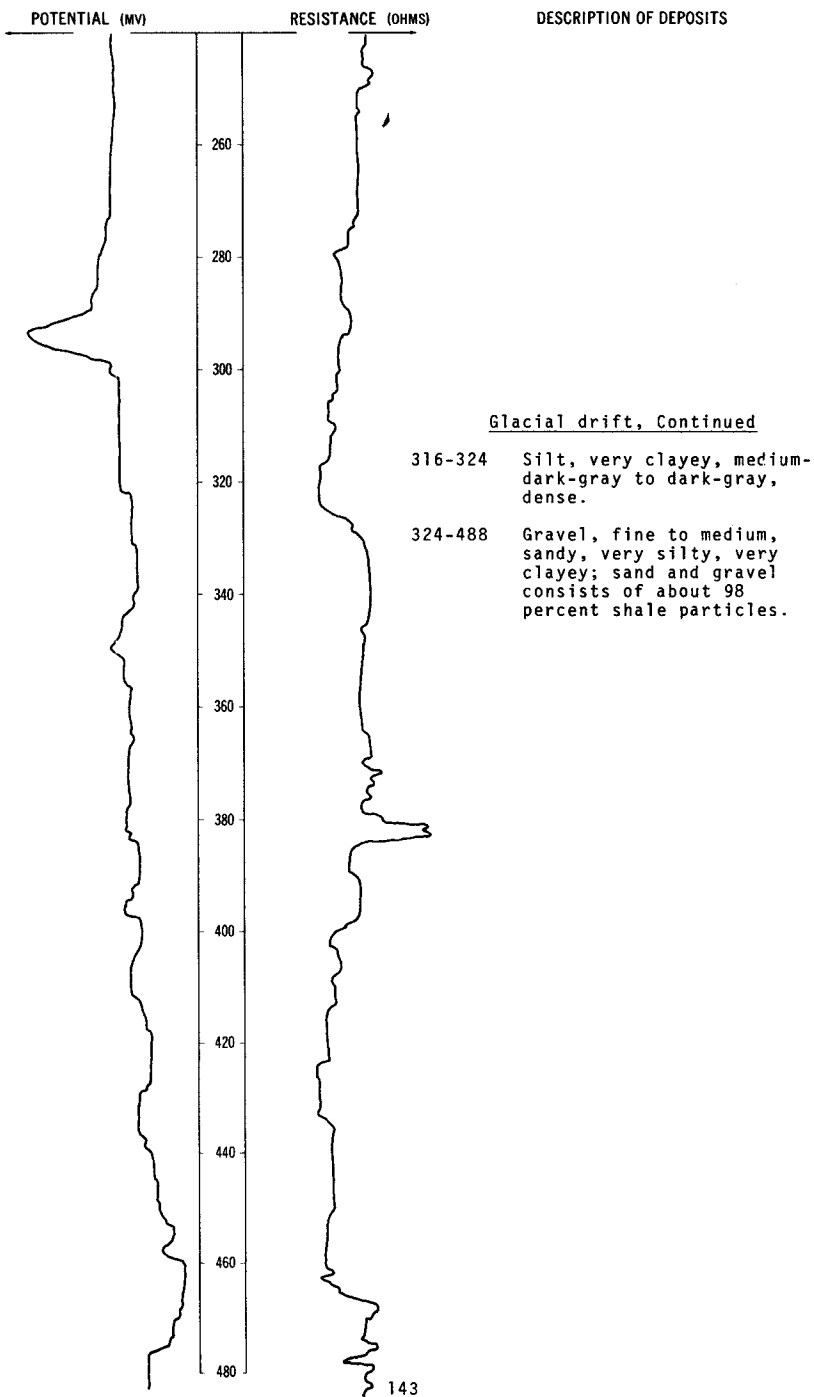
NDSWC 9094, Continued

LOCATION: 154-063-12CCC

DATE DRILLED: September 1974

ALTITUDE: 1484  
(FT, MSL)

DEPTH: 580  
(FT)



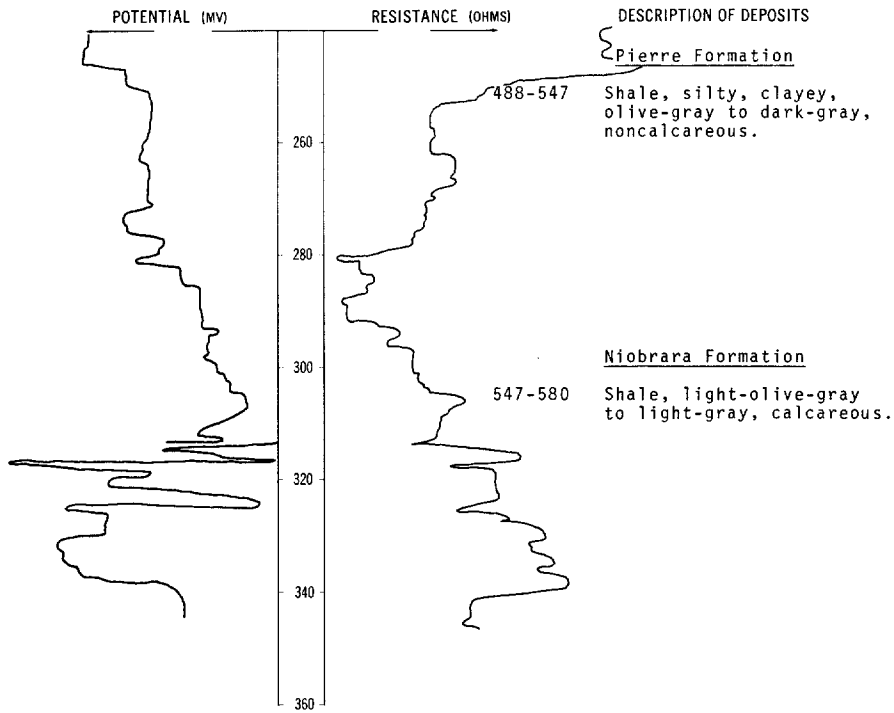
NDSWC 9094, Continued

LOCATION: 154-063-12CCC

DATE DRILLED: September 1974

ALTITUDE: 1484  
(FT, MSL)

DEPTH: 580  
(FT)



154-063-12DDD  
NDSWC 9093

Altitude: 1482 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
<b>Glacial drift:</b>			
	Loam, silty, clayey, black-----	1	1
	Clay, very sandy, silty, pebbly, moderate-brown to dark- yellowish-orange, oxidized (till)-----	13	14
	Clay, very sandy, silty, pebbly, dark-gray (till)-----	11	25
	Clay, very sandy, silty, pebbly, medium-dark-gray; numerous sand and gravel lenses-----	10	35
<b>Pierre Formation:</b>			
	Shale, dark-gray, siliceous, bentonitic, hard, brittle-----	25	60

154-063-18AAA  
NDSWC 8818

Altitude: 1491 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, clayey, silty, grayish-black (topsoil)-----	1	1
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown to dark-yellowish-brown, oxidized (till)-----	24	25
	Clay, slightly sandy, pebbly, olive-gray (till)-----	35	60
	Clay, very sandy, pebbly, olive-gray (till)-----	18	78
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle-----	22	100

154-063-19DAA  
Test hole 588

(Log modified from Paulson and Akin, 1964, p. 116)

Altitude: 1556 feet

Glacial drift:			
	Topsoil, brown-----	1	1
	Till, very sandy and gravelly, light-brown-----	3	4
	Sand and gravel, light-brown; mainly detrital shale, very clayey-----	14	18
	Sand, very fine to medium, clayey and gravelly, light-brown-----	24	42
	Till, silty, light-brown-----	13	55
	Sand, medium to very coarse; gravel, fine, light-brown; coarse material mainly detrital shale, very clayey-----	10	65
	Sand, very coarse; gravel, fine, clayey, gray; coarser material detrital shale-----	10	75
	Gravel, fine to medium; mainly detrital shale-----	6	81
Pierre Formation:			
	Shale, gray-----	9	90

154-063-21AAA  
NDSWC 8817

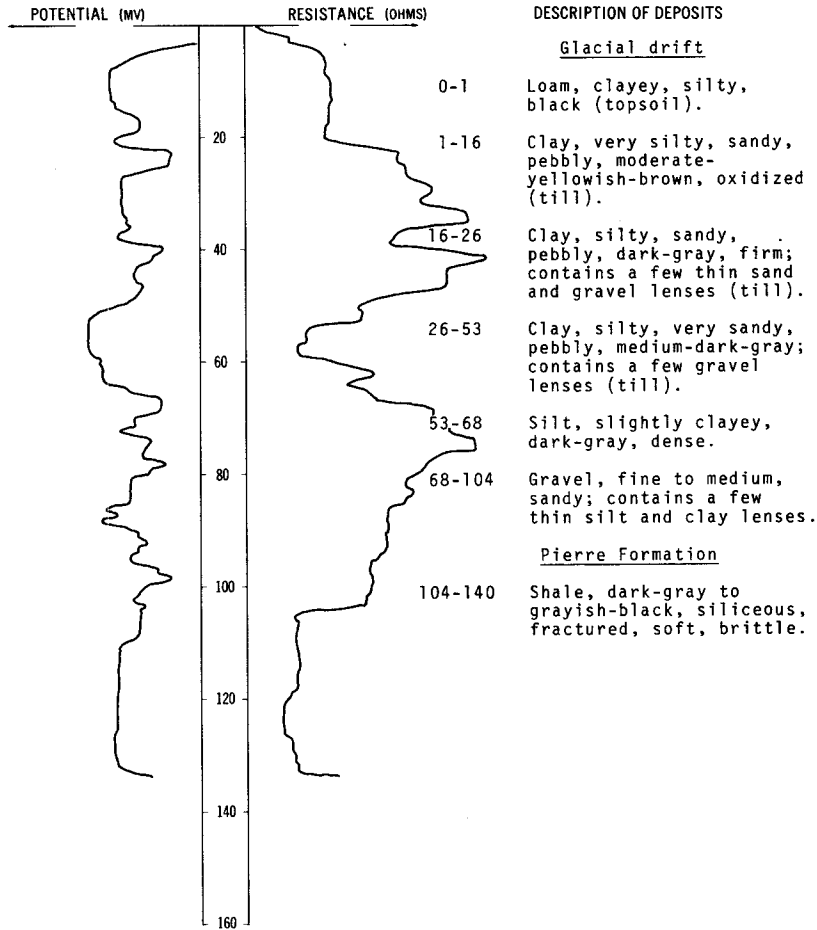
Altitude: 1482 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, clayey, silty, grayish-black (topsoil)-----	1	1
	Clay, moderately sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	8	9
	Clay, slightly sandy, silty, pebbly, olive-gray, calcareous (till)-----	11	20
	Sand, very fine to coarse-----	5	25
	Clay, sandy, pebbly; gravelly, olive-gray, calcareous (till)-----	6	31
	Sand, fine to medium-----	2	33
	Clay, very sandy, silty, pebbly, olive-gray; contains a few thin sand and gravel lenses-----	8	41
	Clay, very sandy, pebbly, gravelly, dark-yellowish-brown, oxidized-----	10	51
	Silt, clayey, sandy, medium-dark-gray to dark-brownish-gray, highly calcareous (till)-----	5	56
	Sand, very fine to very coarse; slightly clayey-----	10	66
	Gravel, fine to coarse, very sandy; consists of about 50 percent shale particles; contains a few thin clay lenses-----	10	76
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	24	100



LOCATION: 154-063-27BBB  
 ALTITUDE: 1483  
 (FT, MSL)

DATE DRILLED: September 1974  
 DEPTH: 140  
 (FT)



154-063-35BBB  
 NDSWC 8816

Altitude: 1500 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Clay, silty, pebbly, grayish-black (topsoil)-----	1	1
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	23	24
	Clay, very sandy, pebbly, gravelly, olive-gray, calcareous (till)-----	13	37
Pierre Formation:			
	Shale, grayish-black, siliceous, slightly fractured, brittle-----	23	60

154-064-01CDD  
 Test hole 130  
 (Log modified from Paulson and Akin, 1964, p. 117)

Altitude: 1461 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil, black-----	1	1
	Clay, gray-----	2	3
	Clay and silt, very light brown-----	7	10
	Till, light-brown-----	2	12
	Sand and gravel, light-brown-----	1	13
	Till, gray-----	46	59
	Sand, coarse to medium; gravel, fine, very clayey, gray-----	6	65
	Till, gray-----	34	99
Pierre Formation:			
	Shale, gray-----	11	110

154-064-01DDD  
 Test hole 129  
 (Log modified from Paulson and Akin, 1964, p. 117)

Altitude: 1469 feet

Glacial drift:			
	Topsoil, black-----	2	2
	Till, light-brown-----	15	17
	Till, gray-----	49	66
	Sand, coarse; gravel, fine, gray; mainly detrital shale, well sorted-----	4	70
	Till, gray-----	14	84
	Till, gray; contains large detrital shale pebbles, up to one inch in length-----	30	114
Pierre Formation:			
	Shale, gray-----	6	120

154-064-02CDD  
 Test hole 132  
 (Log modified from Paulson and Akin, 1964, p. 117)

Altitude: 1463 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till or clay, gray-----	2	3
	Till, light-brown-----	8	11
	Till, gray-----	2	13
	Sand, medium to coarse; gravel, fine, gray; about one-half detrital shale-----	8	21
	Till, gray-----	30	51
Pierre Formation:			
	Shale, gray-----	9	60

154-064-03BAA  
 Test hole 135  
 (Log modified from Paulson and Akin, 1964, p. 118)

Altitude: 1465 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	2	2
	Till, light-brown-----	10	12
	Till, gray-----	38	50
	Sand, fine; clay, gray-----	20	70
	Clay and sand, fine, gray-----	23	93
	Till, gray-----	6	99
Pierre Formation:			
	Shale, gray-----	11	110

154-064-03BBA  
 Test hole 203  
 (Log modified from Paulson and Akin, 1964, p. 118)

Altitude: 1467 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-tan-----	13	14
	Till, gray-----	14	28
	Sand-----	2	30
	Till, gray-----	16	46
	Sand, medium and fine, gray; mainly detrital shale, clayey-----	14	60
	Till, gray-----	48	108
Pierre Formation:			
	Shale, gray-----	5	113

154-064-03CAD  
 Test hole 156  
 (Log modified from Paulson and Akin, 1964, p. 118)

Altitude: 1466 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-brown-----	13	14
	Till, gray-----	8	22
	Sand and gravel, gray-----	1	23
	Till, very sandy and gravelly, gray-----	17	40
	Sand, coarse; gravel, mostly fine, gray, well-sorted-----	47	87
Pierre Formation:			
	Shale, gray-----	3	90

154-064-03CDD

Test hole 134

(Log modified from Paulson and Akin, 1964, p. 119)

Altitude: 1479 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till or clay, light-brown-----	2	3
	Till, very sandy and clayey, light-brown-----	7	10
	Sand, medium to coarse; gravel, fine; coarser material detrital shale-----	20	30
	Sand, very coarse; gravel, fine; mainly detrital shale; coarser toward bottom-----	30	60
	Gravel, fine to coarse; about two-thirds detrital shale-----	48	108
Pierre Formation:			
	Shale, gray-----	2	110

154-064-03DDD

Test hole 133

(Log modified from Paulson and Akin, 1964, p. 119)

Altitude: 1467 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-brown-----	11	12
	Till, gray-----	21	33
	Sand, medium to coarse; gravel, fine to coarse; about one- third detrital shale-----	7	40
	Till, gray-----	15	55
	Till, gravelly, gray-----	5	60
Pierre Formation:			
	Shale, gray-----	10	70

154-064-04CCC

Test hole 2X

(Log modified from Paulson and Akin, 1964, p. 119)

Altitude: 1465 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till, sandy, light-gray-----	10	11
	Sand, medium to fine, clayey, gray-----	7	18
	Sand, fine; gravel, coarse, very clayey, gray; mainly detrital shale-----	4	22
	Till, gravelly, sandy, gray-----	10	32

154-064-04CDD  
 Test hole 1X  
 (Log modified from Paulson and Akin, 1964, p. 120)

Altitude: 1430 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil-----	2	2
	Till, light-brown-----	11	13
Pierre Formation:			
	Shale, gray-----	2	15

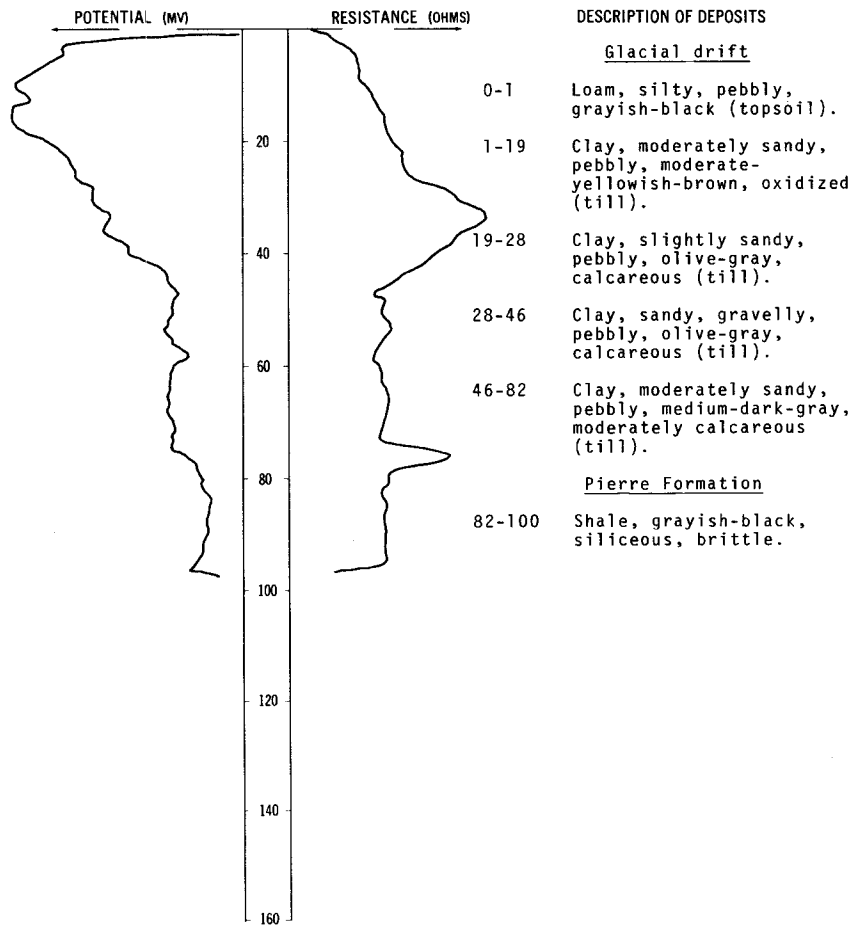
NDSWC 8838

LOCATION: 154-064-05BBB

DATE DRILLED: August 1973

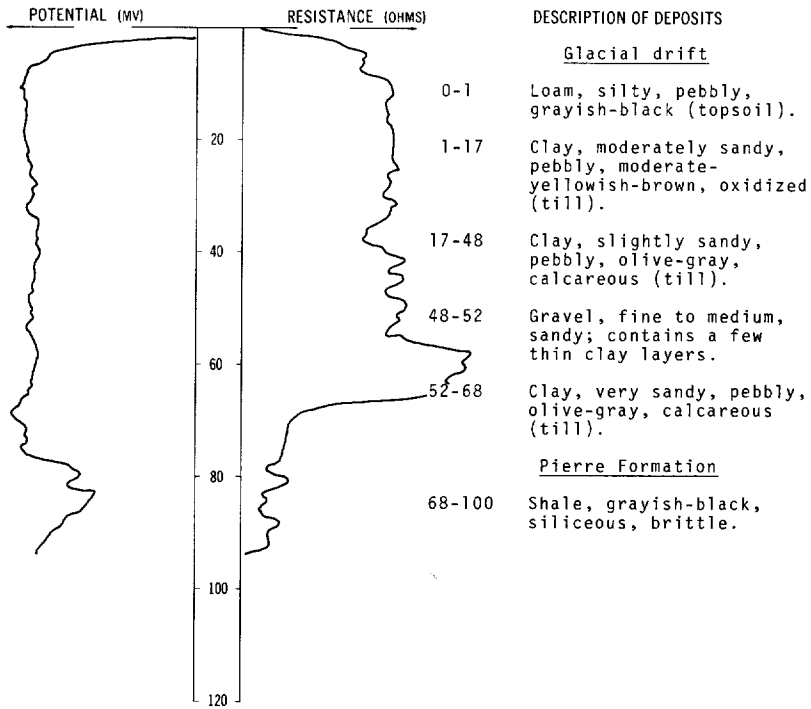
ALTITUDE: 1472  
 (FT, MSL)

DEPTH: 100  
 (FT)



LOCATION: 154-064-07DDA  
 ALTITUDE: 1476  
 (FT, MSL)

DATE DRILLED: August 1973  
 DEPTH: 100  
 (FT)



154-064-09DCC  
 Test hole 176  
 (Log modified from Paulson and Akin, 1964, p. 120)

Altitude: 1504 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-gray-----	2	3
	Sand and gravel, very clayey, light-brown-----	3	6
	Till, light-brown-----	12	18
	Till, gray-----	23	41
	Till, sandy, gravelly, gray-----	9	50
	Till, gray-----	96	146
Pierre Formation:			
	Shale, gray-----	9	155

154-064-10BBB

Test hole 158

(Log modified from Paulson and Akin, 1964, p. 120)

Altitude: 1470 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	2	2
	Till, light-brown-----	12	14
	Till, gray-----	21	35
	Sand and gravel, gray-----	2	37
	Till, sandy, gravelly, gray-----	12	49
	Sand, coarse; gravel, fine to medium, gray; mainly detrital shale, well sorted-----	21	70
	Sand, coarse; gravel, medium, gray; mainly detrital shale, well sorted-----	10	80
	Sand, coarse; gravel, coarse, gray; mainly detrital shale, well sorted-----	10	90
	Gravel, coarse, gray; about one-half detrital shale, well sorted-----	11	101
Pierre Formation:			
	Shale, gray-----	4	105

154-064-10CAA

Test hole 157

(Log modified from Paulson and Akin, 1964, p. 121)

Altitude: 1471 feet

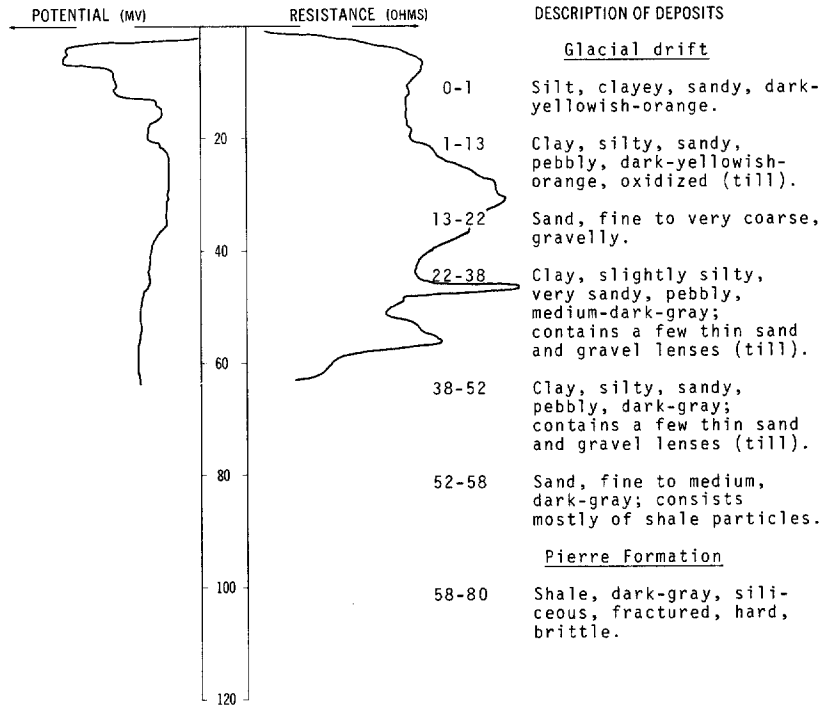
Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-brown-----	1	2
	Sand and gravel, light-brown-----	3	5
	Till, light-brown-----	10	15
	Till, gray-----	8	23
	Sand, coarse; gravel, coarse, well-sorted-----	7	30
Pierre Formation:			
	Shale, gray-----	14	44

LOCATION: 154-064-11CDD

DATE DRILLED: September 1974

ALTITUDE: 1464  
(FT, MSL)

DEPTH: 80  
(FT)



154-064-12BBB  
Test hole 131

(Log modified from Paulson and Akin, 1964, p. 121)

Altitude: 1463 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
<u>Glacial drift:</u>			
	Topsoil, black-----	1	1
	Till or clay, gray-----	2	3
	Till, light-brown-----	10	13
	Till, gray-----	16	29
	Sand, coarse; gravel, fine to coarse, very clayey, gray, poorly sorted-----	11	40
	Till, gray-----	10	50
	Gravel, coarse, gray; mainly detrital shale, well sorted-----	5	55
<u>Pierre Formation:</u>			
	Shale, gray-----	5	60



154-064-12CCC  
NDSWC 8819

Altitude: 1475 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
<u>Glacial drift:</u>			
	Loam, silty, pebbly, black (topsoil)-----	1	1
	Silt, clayey, sandy, slightly pebbly, moderate-yellowish-brown, oxidized; laminated reddish brown (till)-----	12	13
	Sand, fine to very coarse, slightly clayey, dark-brown, oxidized-----	5	18
	Clay, sandy, moderately silty, pebbly, olive-gray, calcareous (till)-----	7	25
	Sand, very fine to coarse, slightly clayey; consists of about 25 percent shale particles-----	15	40
	Sand, very fine to very coarse; consists of about 40 percent shale particles; contains a few thin clay lenses-----	46	86
	Gravel, fine to coarse; consists of about 90 percent dark-gray shale-----	19	105
<u>Pierre Formation:</u>			
	Shale, grayish-black, siliceous, slightly fractured, brittle-----	15	120

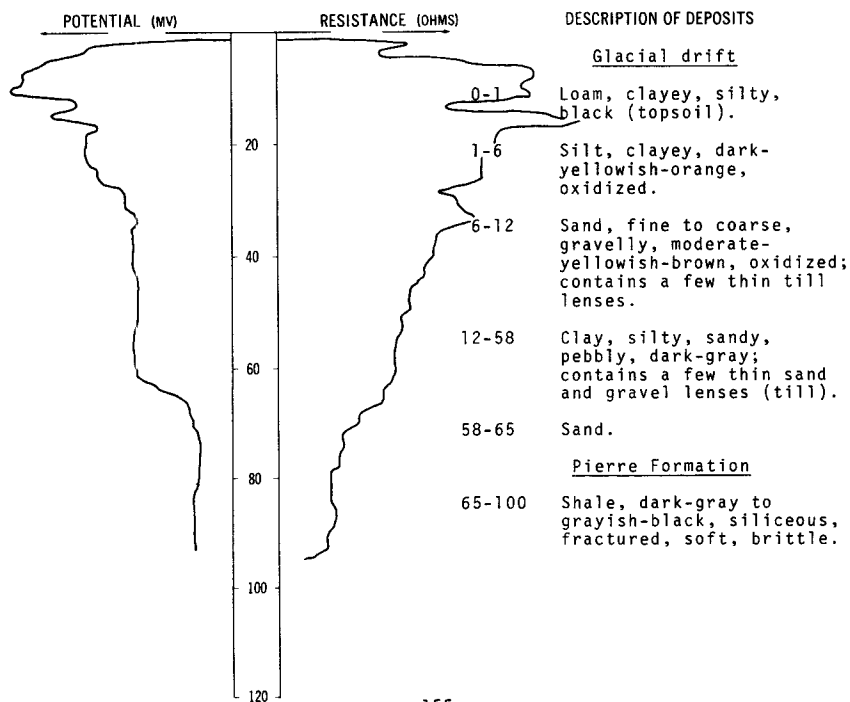
NDSWC 9080

LOCATION: 154-064-12DDD

DATE DRILLED: September 1974

ALTITUDE: 1479  
(FT, MSL)

DEPTH: 100  
(FT)

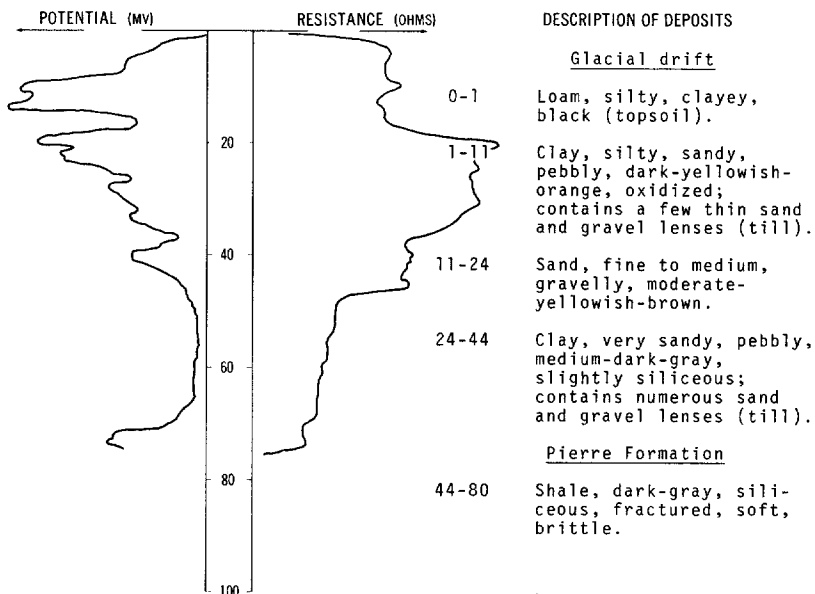


LOCATION: 154-064-14DCC

DATE DRILLED: September 1974

ALTITUDE: 1463  
(FT, MSL)

DEPTH: 80  
(FT)



154-064-15ABB  
Test hole 3X

(Log modified from Paulson and Akin, 1964, p. 121)

Altitude: 1467 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-brown-----	12	13
	Sand and gravel, clayey; mainly detrital shale-----	10	23
Pierre Formation:			
	Shale, gray-----	4	27

154-064-15CAA2

(Log modified from Holbeck Well Service)

Altitude: 1470 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Soil, black-----	1	1
	Clay, yellow-----	51	52
	Gravel and clay-----	7	59
Pierre Formation:			
	Shale-----	70	129

154-064-16AAA  
 Test hole 175  
 (Log modified from Paulson and Akin, 1964, p. 122)

Altitude: 1466 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	2	2
	Till, light-brown-----	15	17
	Till, gray-----	23	40
	Sand, coarse; gravel, fine, gray; mainly detrital shale, clayey-----	23	63
	Till, gray-----	20	83
Pierre Formation:			
	Shale, gray-----	12	95

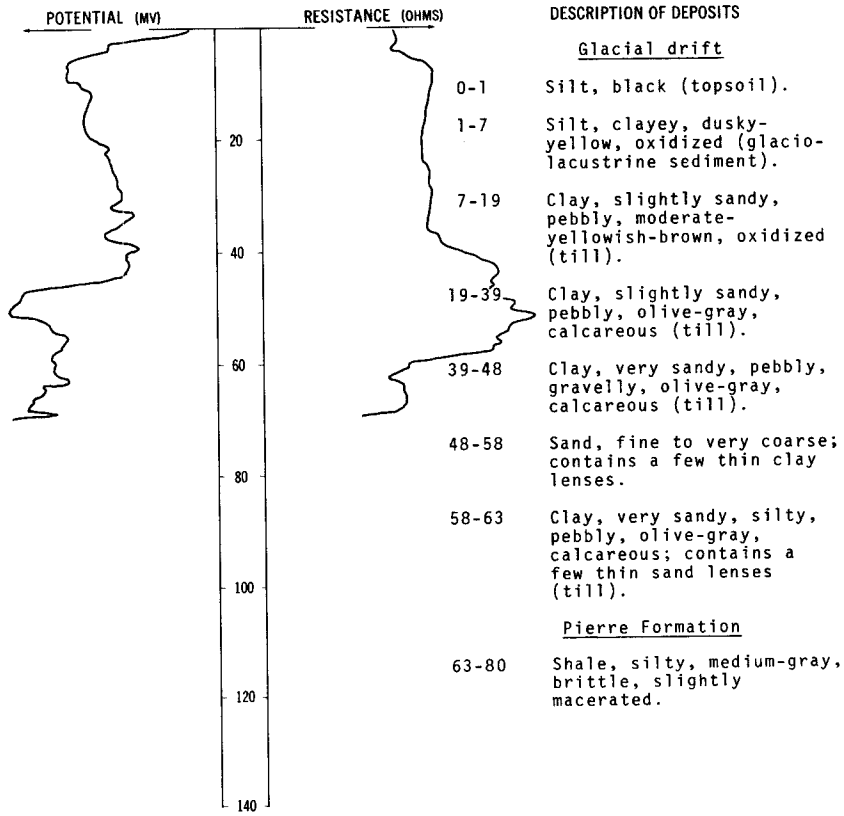
NDSWC 8835

LOCATION: 154-064-18CCC

DATE DRILLED: August 1973

ALTITUDE: 1472  
 (FT, MSL)

DEPTH: 80  
 (FT)



154-064-20CBC  
NDSWC 8836

Altitude: 1472 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, clayey, silty, grayish-black-----	1	1
	Clay, moderately sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	20	21
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	33	54
	Clay, very sandy, pebbly, olive-gray, calcareous (till)-----	6	60
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle-----	20	80

154-064-22ABB  
Great Northern test well 9  
(Log modified from Paulson and Akin, 1964, p. 122)

Altitude: 1465 feet

Clay, yellow-----	14	14
Clay, blue-----	22	36
Gravel-----	1	37
Slate-----	19	56
Rock-----	1	57
Clay, blue-----	13	70
Slate-----	10	80
Clay, sandy-----	5	85
Clay, blue-----	20	105
Slate rock-----	1	106
Shale, blue-----	6	112

154-064-22DCC  
Great Northern test well 10  
(Log modified from Paulson and Akin, 1964, p. 123)

Altitude: 1475 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
	Clay, yellow-----	20	20
	Clay, blue-----	9	29
	Sand, medium-gray-----	3	32
	Clay, blue-----	1	33
	Gravel, fine-----	2	35
	Clay, blue-----	4	39
	Sand, fine, gray-----	5	44
	Shale, broken-----	½	44½
	Boulder-----	1	45½
	Clay, blue-----	4	49½
	Clay, sandy, blue-----	5	54½
	Sand, coarse, gray-----	1½	56
	Shale and sand-----	4	60
	Shale-----	10	70

154-064-25BBB  
NDSWC 9079

Altitude: 1464 feet

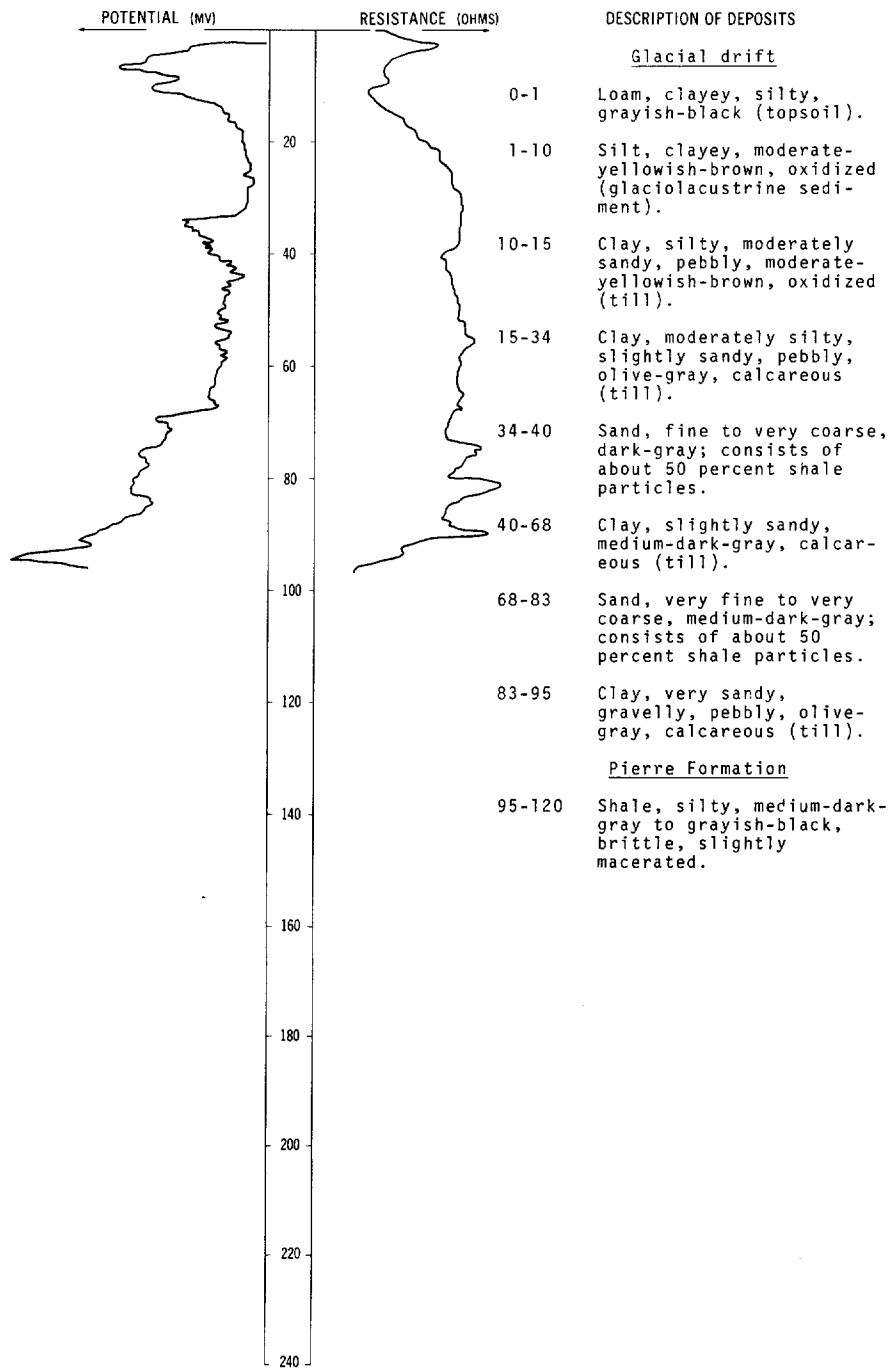
Glacial drift:			
	Loam, silty, sandy, black (topsoil)-----	1	1
	Clay, very silty, sandy, pebbly, dark-yellowish-orange, oxidized; contains a few thin sand and gravel lenses (till)-----	7	8
	Clay, silty, sandy, pebbly, dark- gray; contains a few thin sand and gravel lenses (till)-----	7	15
Pierre Formation:			
	Shale, dark-gray to grayish-black, siliceous, fractured, soft, brittle-----	45	60

LOCATION: 154-064-26DDD

DATE DRILLED: August 1973

ALTITUDE: 1451  
(FT, MSL)

DEPTH: 120  
(FT)



154-064-27ABC  
Great Northern test well 11  
(Log modified from Paulson and Akin, 1964, p. 123)

Altitude: 1470 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
	Clay and gravel-----	38	38
	Sand and gravel-----	7	45
	Sand, gray, water-bearing-----	1	46
	Clay and gravel, gray-----	13	59
	Clay, black, soft-----	1	60
	Clay, blue-----	20	80
	Shale-----	?	80

154-064-27DCB  
Great Northern test well 12  
(Log modified from Paulson and Akin, 1964, p. 123)

Altitude: 1465 feet

	Clay, yellow-----	22	22
	Clay, bouldery, blue-----	11	33
	Clay, blue, hard-----	8	41
	Sand, fine, black-----	1	42
	Sand and gravel-----	3	45
	Clay-----	3	48

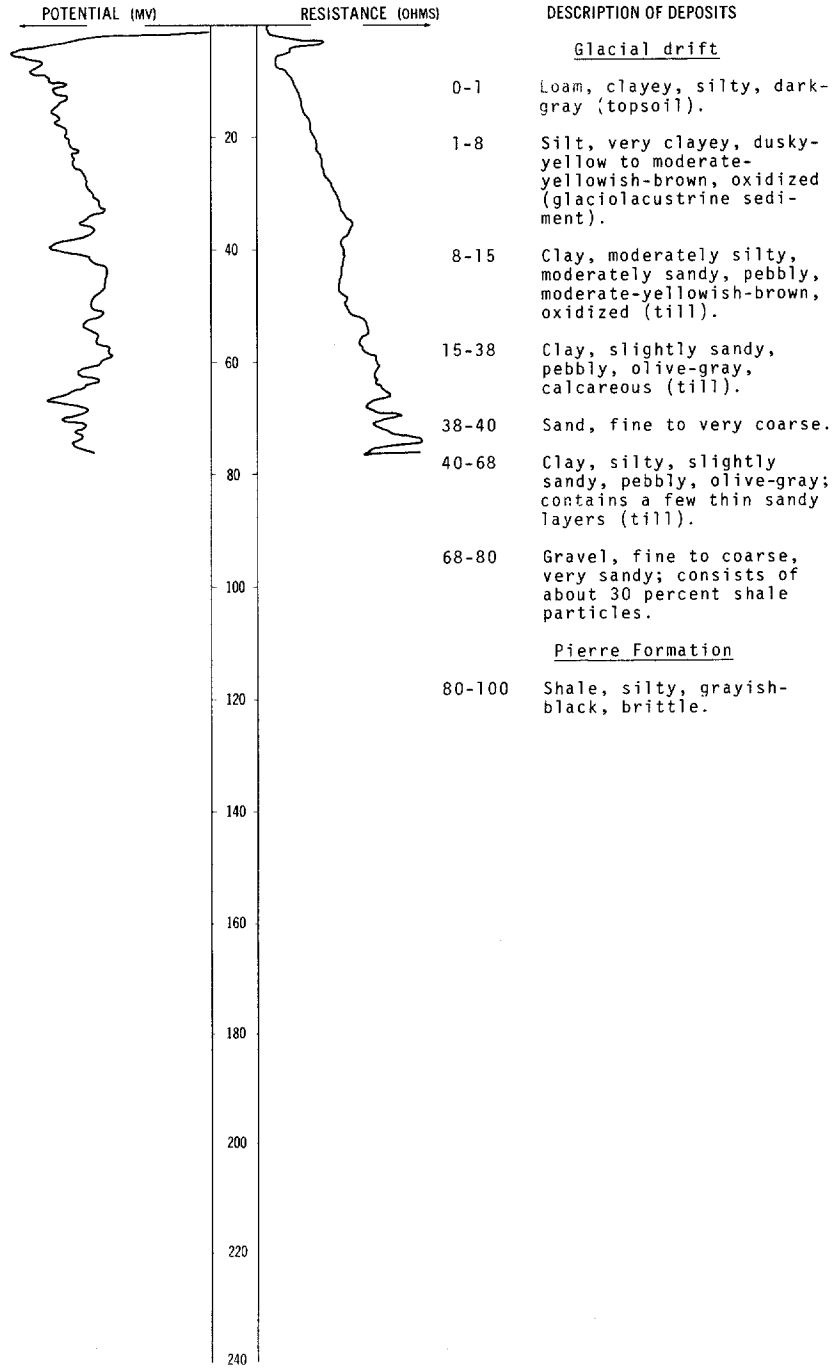
NDSWC 8862

LOCATION: 154-064-31DDD

ALTITUDE: 7440  
(FT, MSL)

DATE DRILLED: August 1973

DEPTH: 100  
(FT)





154-064-34DAC  
 Devils Lake city supply well 1  
 (Log from Simpson, 1929, p. 192)

Altitude: 1472 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
	Glacial drift, till as on the surface-----	25	25
	Dark shale, nearly alike through its whole thickness, including Pierre and Benton shales, with no noticeable calcareous beds at the intermediate Niobrara horizon-----	1,403	1,428
	Gravel, of granite pebbles up to half an inch in diameter, firmly cemented with nodular pyrite-----	3	1,431
Dakota Group:	Loose sand, very fine, white or light gray, the base of which was not reached-----	80	1,511

(Total depth reported by Paulson and Akin, 1964, p. 190a, was 1,530 feet.)

154-064-34DCB1  
 Devils Lake city supply well 2  
 (Log modified from Laird, 1941, p. 25-27)

Altitude: 1462 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
<b>Pleistocene</b>			
	Drift-----	10	10
	Sand, coarse-----	10	20
	Gravel, fine-----	30	50
<b>Cretaceous</b>			
<b>Pierre</b>			
	Shale; interbedded with silt and gravel----	20	70
	Shale; interbedded with sand and gravel----	10	80
	Shale, soft, tan-----	10	90
	Sand and shale-----	20	110
	Shale, soft, gray; contains shell fragments, gypsum-----	80	190
	Shale, dark-gray; contains lignite with sulphur and gypsum-----	10	200
	Shale, light-gray; contains gypsum and shells-----	100	300
	Shale, dark-gray; contains lignite and gypsum-----	20	320
	Shale, light-gray, lignitic-----	10	330
	Shale, dark-gray; contains lignite, sulphur and gypsum-----	20	350
	Shale, light-gray, lignitic-----	10	360
	Shale, dark-gray-----	10	370
	Shale, light-gray, blocky; contains gypsum and lignite-----	10	380
	Shale, light-gray, lignitic-----	10	390
	Shale, tan, blocky; contains some lignite, gypsum and spherules-----	110	500
	Shale, dark-gray, gypsiferous-----	10	510
	Shale, gray and tan, gypsiferous-----	10	520
	Shale, gray and tan; contains gypsum and sulphur-----	20	540
	Shale, gray and tan; contains gypsum and some sulphur-----	10	550
	Shale, light- and dark-gray, gypsiferous-----	40	590
	Shale, light-gray to black; contains sulphur and gypsum-----	10	600
	Shale, medium-gray-----	10	610
<b>Niobrara</b>			
	Shale, gray and tan; contains lignite, gypsum, and abundant fossils-----	50	660
	Shale, soft, gray; contains fewer fossils than above and abundant gypsum-----	10	670
	Shale, dark- and light-gray-----	10	680
	Shale, soft, gray; contains gypsum and lignite-----	20	700
	Shale, dark-gray, gypsiferous-----	30	730

154-064-34DCB1, Continued  
 Devils Lake city supply well 2  
 (Log modified from Laird, 1941, p. 25-27)

Altitude: 1462 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Carlile (?)	Shale, soft, light-gray-----	130	860
	Shale, light- to medium-gray-----	40	900
	Shale, blocky, medium-gray; contains abundant gypsum and pyrite-----	20	920
	Shale, flaky, gray, gypsiferous-----	60	980
	Shale, gray; contains sulphur and gypsum-----	10	990
	Shale, flaky, gray; contains pyrite-----	10	1,000
	Shale, flaky, gray, slightly pyritic-----	20	1,020
	Shale, gray, gypsiferous-----	10	1,030
	Shale, flaky, medium-gray, gypsiferous, fossiliferous-----	50	1,080
	Shale, medium-gray; contains fossils and sulphur-----	20	1,100
	Shale, flaky, gray, fossiliferous-----	10	1,110
	Shale, gray, fossiliferous, pyritic-----	30	1,140
	Shale, flaky, gray-----	20	1,160
	Shale, gray-----	10	1,170
	Shale, flaky, gray-----	50	1,220
	Shale, light- to dark-gray-----	10	1,230
	Shale, flaky, gray, fossiliferous-----	20	1,250
	Shale, gray-----	10	1,260
	Shale, flaky, gray-----	10	1,270
	Shale, gray-----	20	1,290
	Shale, flaky, gray-----	30	1,320
Dakota	Shale, gray; coarse sand-----	10	1,330
	Shale, dark-gray; contains sulphur and gypsum-----	10	1,340
	Shale and sand, dark-gray, pyritic-----	10	1,350
	Shale, sandy, gray; contains gypsum and sulphur-----	20	1,370
Fuson	Shale, flaky, gray, gypsiferous-----	30	1,400
	Shale, dark-gray; contains gypsum and sulphur-----	10	1,410
Lakota	Sand and shale; contains some gypsum and pyrite-----	10	1,420
	Sand and shale; contains sulphur-----	10	1,430
	Sand, coarse, pyritic-----	81	1,511
	No log-----	4	1,515

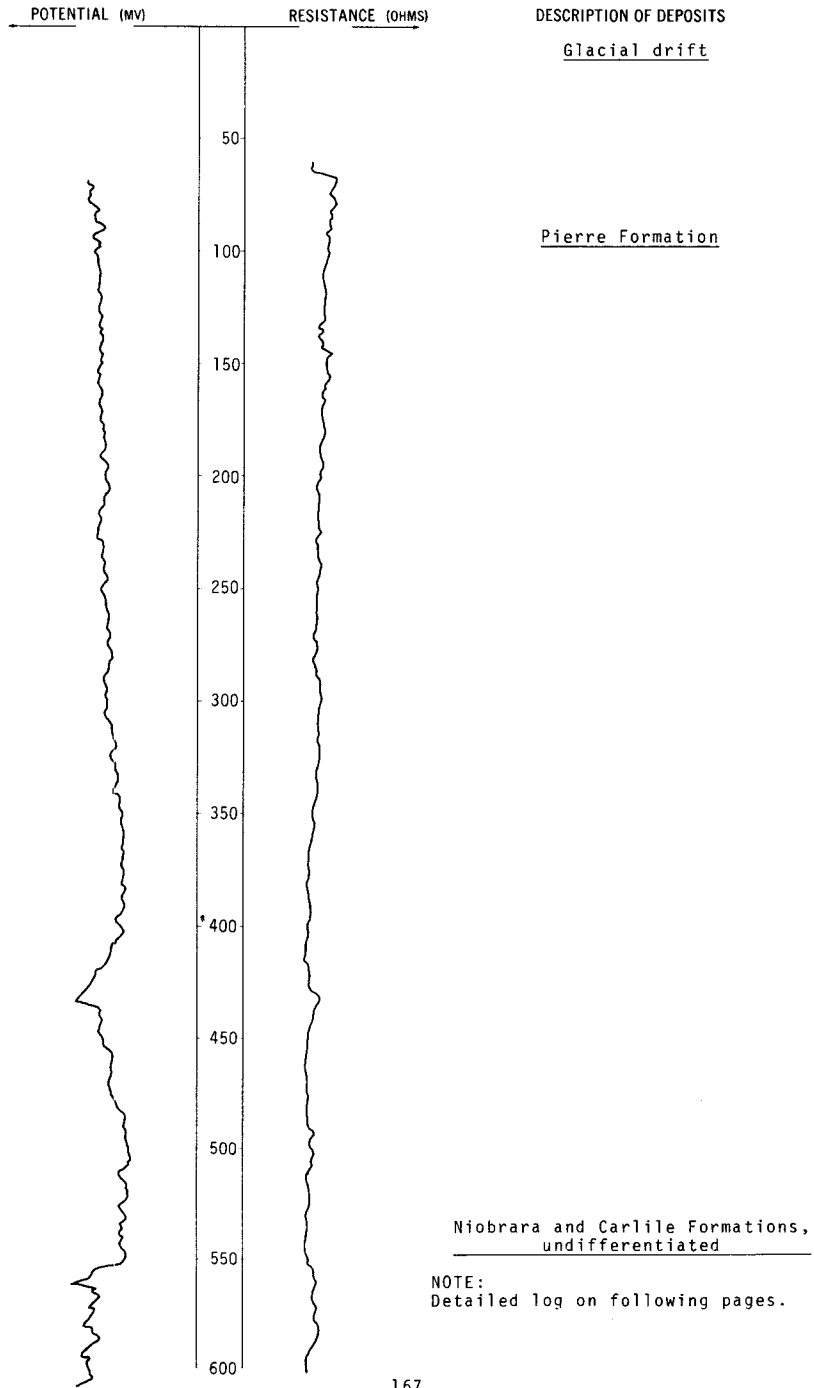
154-064-34DCB2  
 Devils Lake city supply well 3  
 (Log modified from Paulson and Akin, 1964, p. 127)

Altitude: 1462 feet

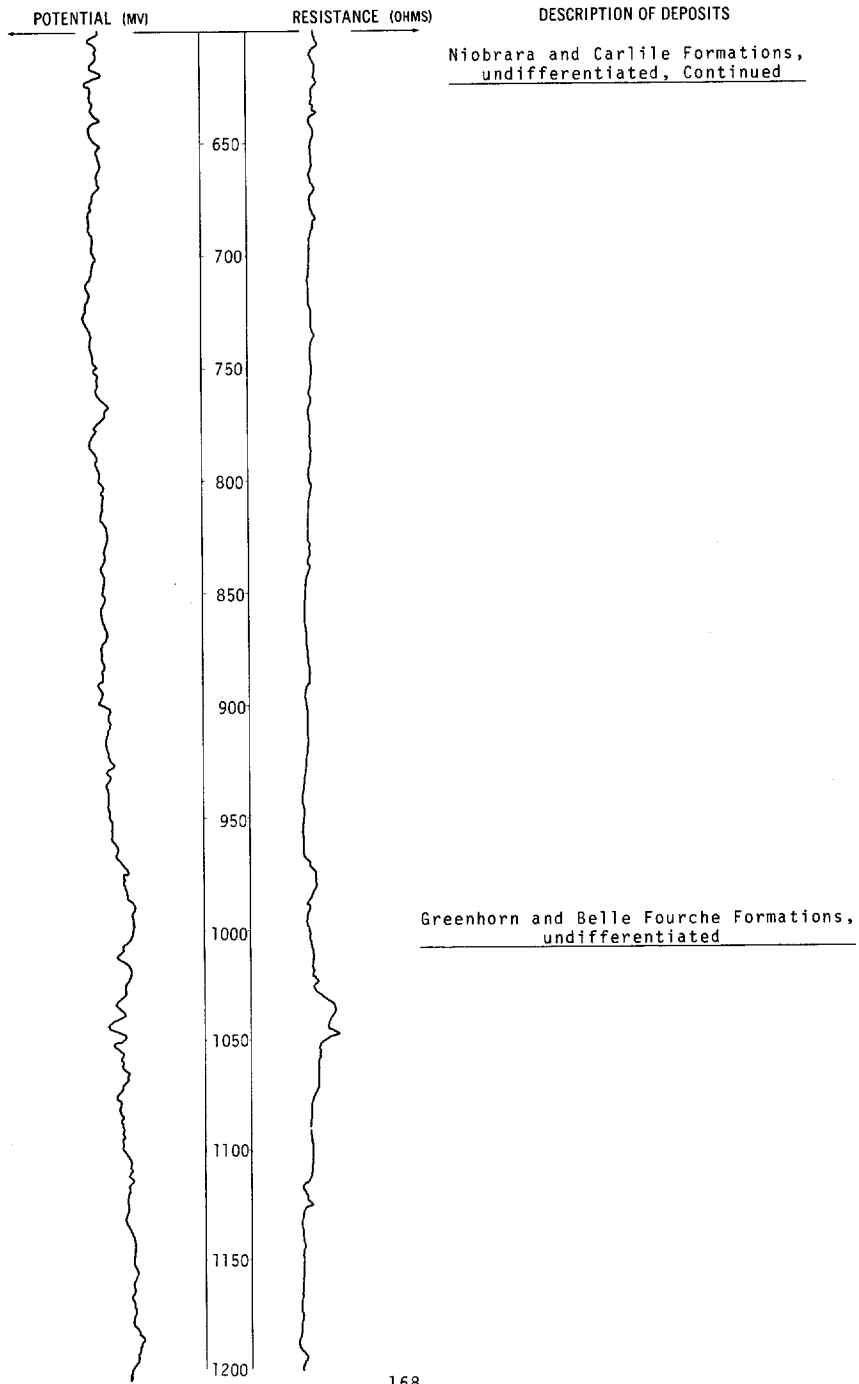
<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
	Clay and shale-----	43	43
	Sand and gravel-----	7	50
	Shale-----	1,270	1,320
	Shale, muddy; sand (loose)-----	25	1,345
	Shale (hard)-----	40	1,385
	Hard streaks of shale and streaks of sand-----	95	1,480
	Sand, clean, white-----	16	1,496
	Shale very much like bentonite, gray and chocolate color-----	24	1,520

Devils Lake city well 4  
 (Sample descriptions by S. B. Anderson, North Dakota Geological Survey)  
 (Log modified from Paulson and Akin, 1964, p. 128-130)

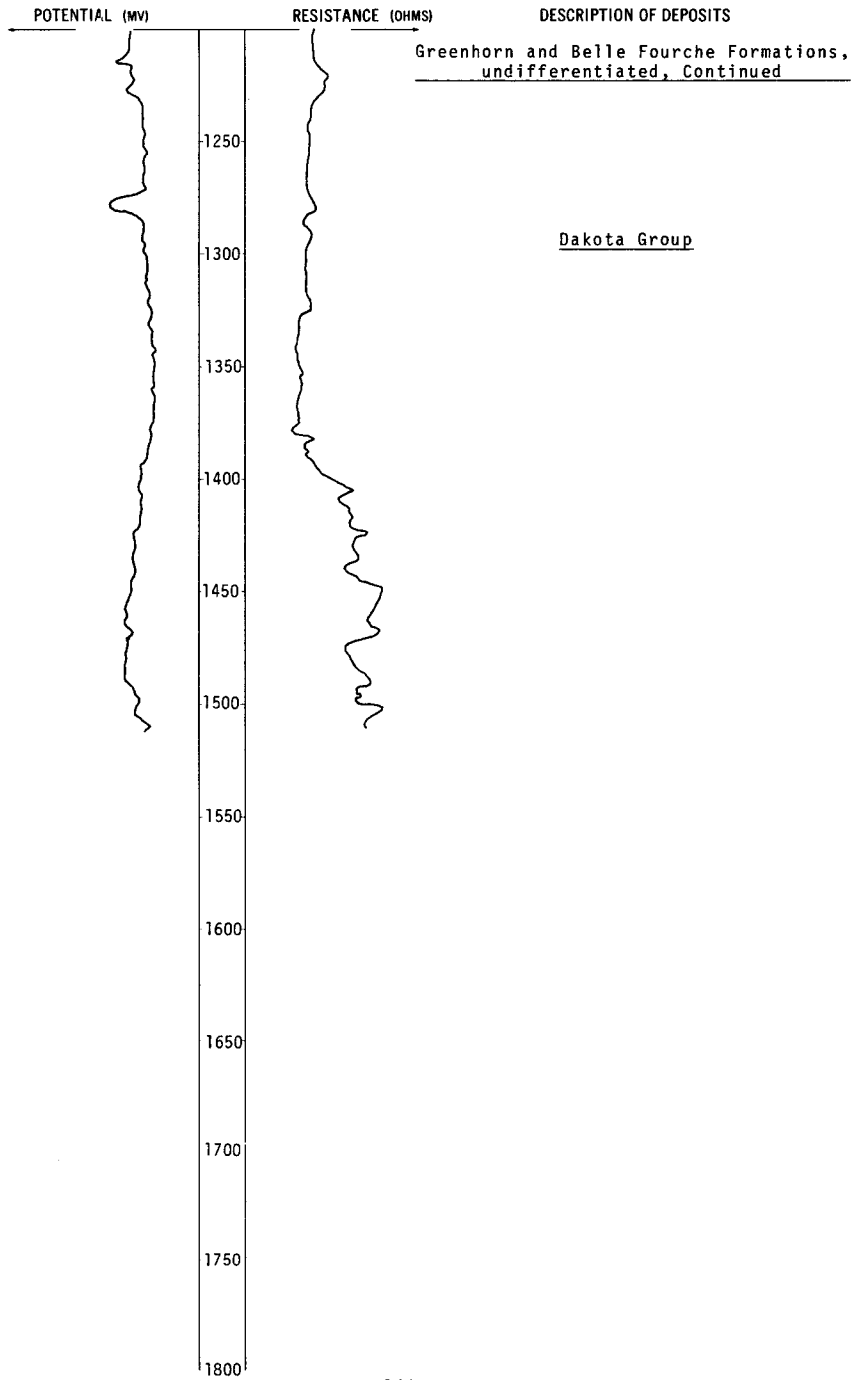
LOCATION: 154-064-34DCC      DATE DRILLED: 1951  
 ALTITUDE: 1442      DEPTH: 1512  
 (FT, MSL)      (FT)



Devils Lake city well 4, Continued  
 (Sample descriptions by S. B. Anderson, North Dakota Geological Survey)  
 (Log modified from Paulson and Akin, 1964, p. 128-130)  
 LOCATION: 154-064-34DCC      DATE DRILLED: 1951  
 ALTITUDE: 1442      DEPTH: 1512  
 (FT, MSL)      (FT)



Devils Lake city well 4, Continued  
(Sample descriptions by S. B. Anderson, North Dakota Geological Survey)  
(Log modified from Paulson and Akin, 1964, p. 128-130)  
LOCATION: 154-064-34DCC DATE DRILLED: 1951  
ALTITUDE: 1442 DEPTH: 1512  
(FT, MSL) (FT)



154-064-34DCC, Continued  
 Devils Lake city well 4  
 (Sample descriptions by S. B. Anderson, North Dakota Geological Survey)  
 (Log modified from Paulson and Akin, 1964, p. 128-130)

Altitude: 1442 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Till, sandy, shaly, pebbly, clayey, pale-yellow-brown (10YR 6/2)-----	30	30
	Till, clayey, sandy, shaly, pebbly, green-gray (5GY 6/1)-----	70	100
Pierre Formation:			
	Shale, green-gray (5GY 6/1); sand, fine----	40	140
	Shale, coarse, pebbly, green-gray (5GY 6/1)-----	40	180
	Shale, sandy, medium-gray (N5)-----	20	200
	Shale, green-gray (5GY 6/1); medium gray (N5) on fresh fracture-----	200	400
	Shale, sandy, green-gray (5GY 6/1); medium gray (N5) on fresh fracture-----	30	430
	Shale, slightly sandy, green-gray (5GY 6/1); medium gray (N5) on fresh fracture-----	10	440
	Shale, green-gray (5GY 6/1); medium gray (N5) on fresh fracture; contains some sand and sandstone-----	20	460
	Shale, green-gray (5GY 6/1); medium gray (N5) on fresh fracture-----	50	510
	Shale, green-gray (5GY 6/1); medium gray (N5) on fresh fracture; contains some sand grains and calcite shell fragments-----	20	530
	Shale, green-gray (5GY 6/1); medium gray (N5) on fresh fracture; contains some sand grains, pyrite and limestone---	10	540
Niobrara and Carlile Formations, undifferentiated:			
	Shale, green-gray (5GY 6/1), calcareous; medium gray (N5) on fresh fracture; contains some sand grains and pyrite----	10	550
	Shale, white speckled, sandy, green-gray (5GY 6/1); medium gray (N5) on fresh fracture; <u>Inoceramus</u> shells replaced by calcite-----	10	560
	Shale, sandy, green-gray (5GY 6/1), white speckled; medium gray (N5) on fresh fracture-----	40	600
	Shale, green-gray (5GY 6/1), pyritic-----	10	610
	Shale, sandy, green-gray (5GY 6/1); medium gray (N5) on fresh fracture-----	10	620
	Shale, sandy, green-gray (5GY 6/1), fossiliferous-----	10	630
	Shale, sandy, green-gray (5GY 6/1); medium gray (N5) on fresh fracture-----	10	640
	Shale, green-gray (5GY 6/1); medium gray (N5) to medium dark gray on fracture; contains some calcite and very little sand-----	10	650
	Shale, green-gray (5GY 6/1); medium gray (N5) on fresh fracture; <u>Inoceramus</u> --	20	670
	Shale, green-gray (5GY 6/1), white speckled; medium gray (N5) on fresh fracture-----	20	690
	Shale, green-gray (5GY 6/1), calcareous; medium gray on fracture-----	20	710
	Shale, green-gray (5GY 6/1) and medium-gray (N5), white speckled-----	10	720



154-064-34DCC, Continued  
 Devils Lake city well 4  
 (Sample descriptions by S. B. Anderson, North Dakota Geological Survey)  
 (Log modified from Paulson and Akin, 1964, p. 128-130)

Altitude: 1442 feet

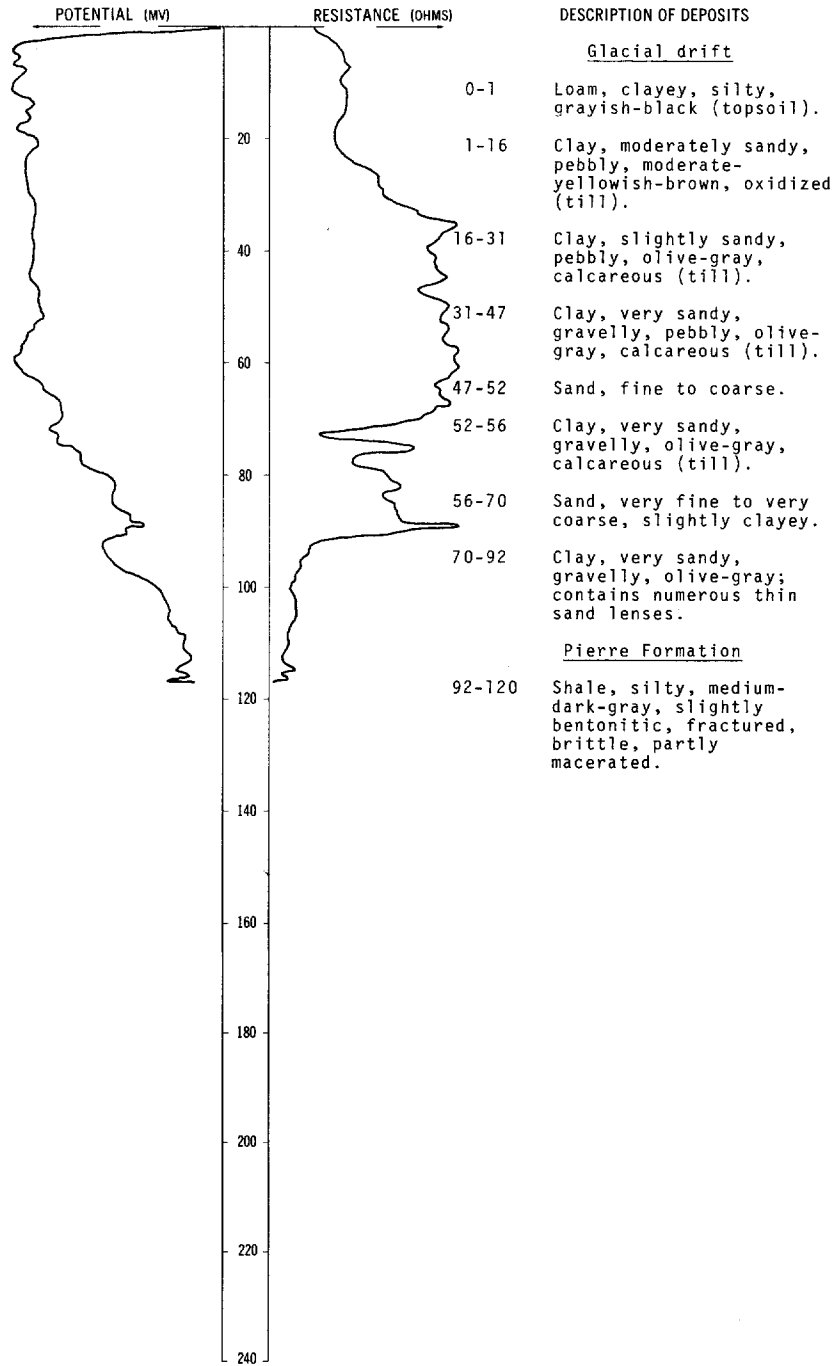
<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Niobrara and Carlile Formations, undifferentiated, Continued:			
	Shale, sandy, green-gray (5GY 6/1); medium gray (N5) on fresh fracture-----	10	730
	Shale, green-gray (5GY 6/1), fossiliferous; medium gray (N5) on fresh fracture-----	10	740
	Shale, green-gray (5GY 6/1), white speckled; medium gray (N5) on fresh fracture-----	10	750
	Shale, sandy, green-gray (5GY 6/1); medium gray (N5) on fresh fracture-----	10	760
	Shale, green-gray (5GY 6/1), pyritic; medium gray (N5) on fresh fracture-----	20	780
	Shale, green-gray (5GY 6/1), white speckled; medium gray (N5) on fresh fracture-----	20	800
	Shale, green-gray (5GY 6/1); medium dark gray (N4) on fresh fracture-----	40	840
	Shale, green-gray (5GY 6/1), white speckled; medium gray (N5) on fresh fracture-----	180	1020
Greenhorn and Belle Fourche Formations, undifferentiated:			
	Shale, green-gray (5GY 6/1); medium gray (N5) on fresh fracture-----	20	1040
	Shale, green-gray (5GY 6/1), calcitic; medium gray (N5) on fresh fracture-----	10	1050
	Shale, green-gray (5GY 6/1), white speckled; medium gray (N5) on fresh fracture-----	10	1060
	Shale, green-gray (5GY 6/1); medium gray (N5) on fresh fracture-----	30	1090
	Shale, green-gray (5GY 6/1), calcareous; medium gray (N5) on fresh fracture-----	10	1100
	Shale, sandy, green-gray (5GY 6/1), pyritic; medium gray (N5) on fresh fracture-----	100	1200
	Shale, green-gray (5GY 6/1), white speckled; medium gray (N5) on fracture---	80	1280
	Shale, green-gray (5GY 6/1)-----	30	1310
Dakota Group:			
	Shale, sandy, green-gray (5GY 6/1)-----	10	1320
	Sandstone, quartzose, shaly, flaky, pyritic-----	10	1330
	Sandstone, quartzose, shaly, flaky, medium gray-----	20	1350
	Shale and sandstone, pyritic-----	10	1360
	Shale and limestone, flaky, sandy-----	30	1390
	Shale, flaky, sandy, pyritic-----	10	1400
	Shale and sandstone, flaky, sandy, green-gray (5GY 6/1), pyritic-----	80	1480
	Sandstone, quartzose-----	20	1500
	No samples-----	12	1512

LOCATION: 154-065-03DDD

DATE DRILLED: August 1973

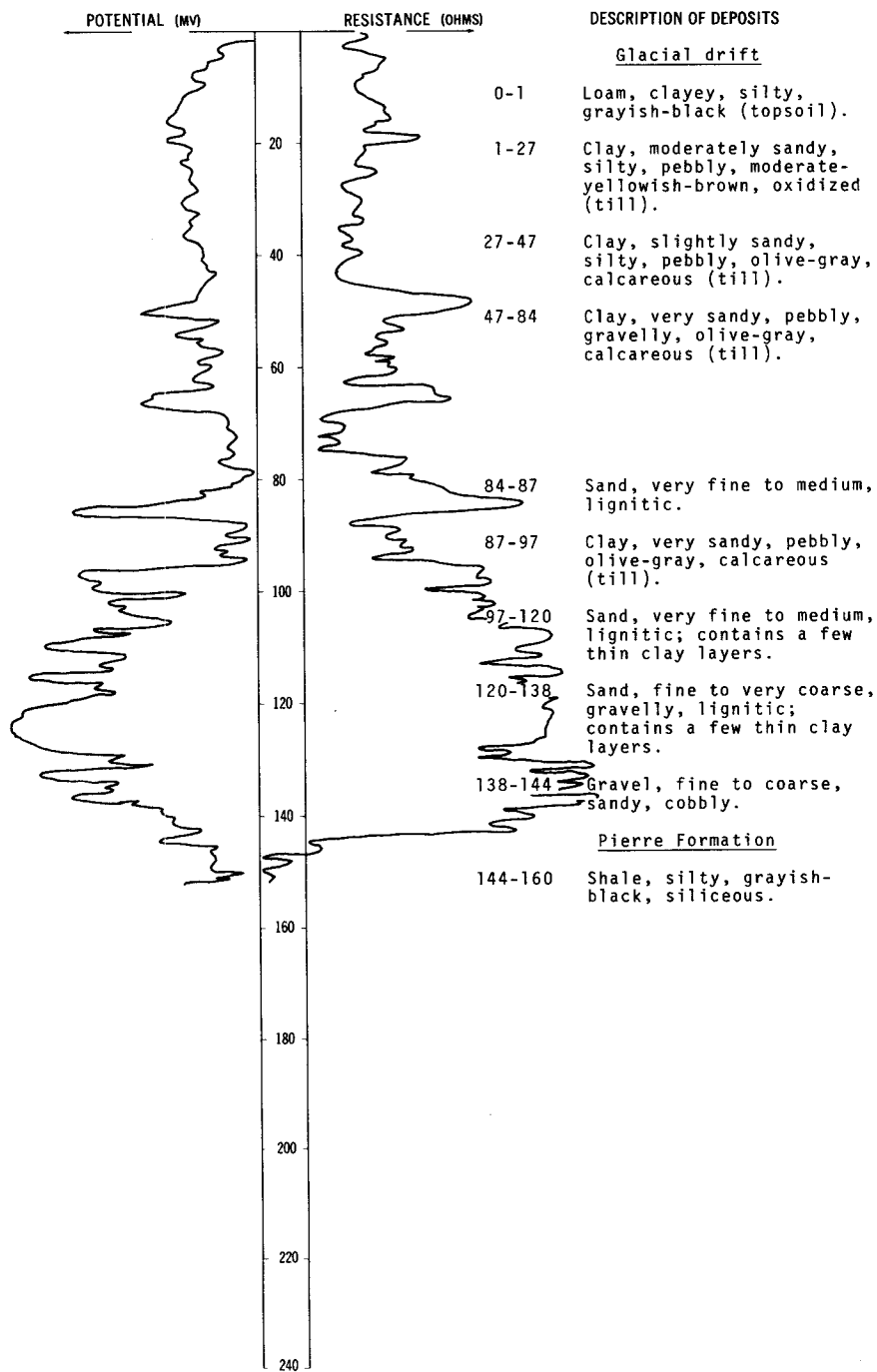
ALTITUDE: 1458  
(FT. MSL)

DEPTH: 120  
(FT)



LOCATION: 154-065-07CDD  
 ALTITUDE: 1474  
 (FT, MSL)

DATE DRILLED: September 1973  
 DEPTH: 160  
 (FT)

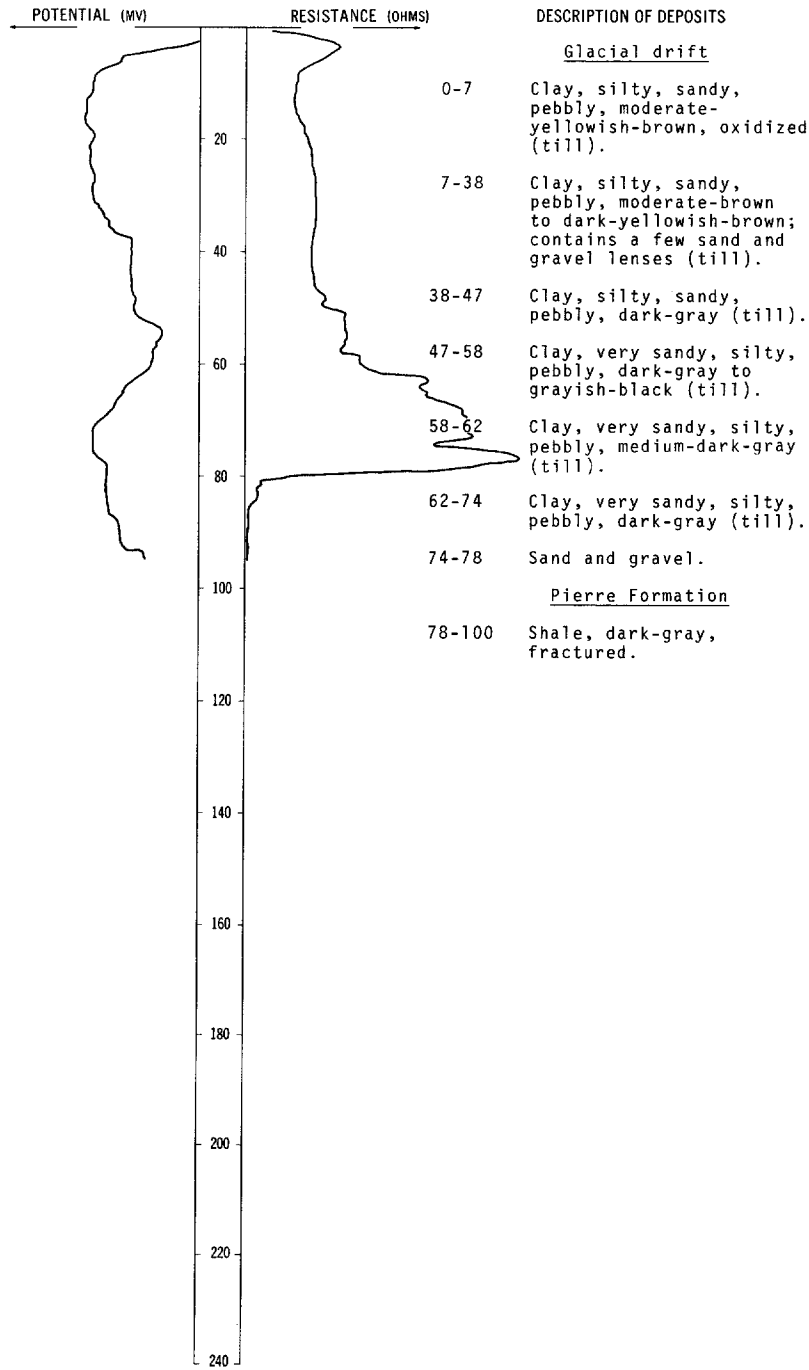


LOCATION: 154-065-10BBB

DATE DRILLED: August 1974

ALTITUDE: 1489  
(FT, MSL)

DEPTH: 100  
(FT)

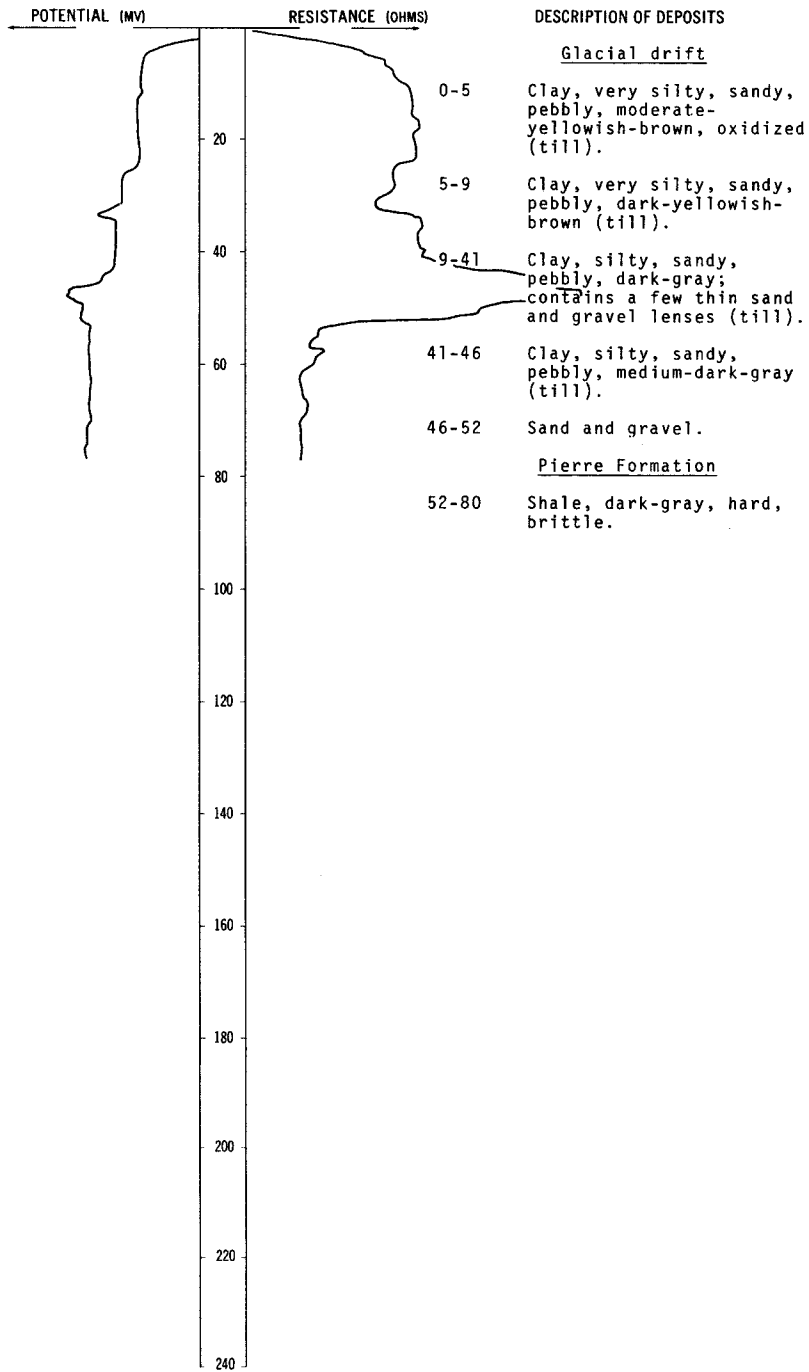


LOCATION: 154-065-10CCC

DATE DRILLED: August 1974

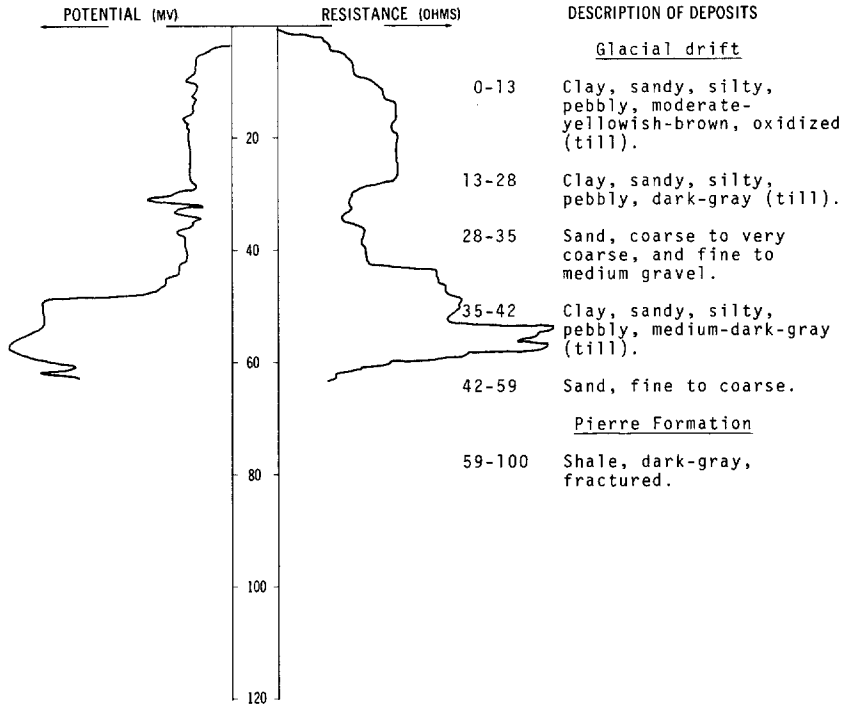
ALTITUDE: 1467  
(FT, MSL)

DEPTH: 80  
(FT)



LOCATION: 154-065-12CCC  
 ALTITUDE: 1468  
 (FT, MSL)

DATE DRILLED: August 1974  
 DEPTH: 100  
 (FT)



154-065-13BCC  
 Test hole 4X  
 (Log modified from Paulson and Akin, 1964, p. 131)

Altitude: 1465 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil, black-----	1	1
	Sand, medium to coarse; gravel, fine, clayey, light-brown-----	17	18
	Till, gray-----	33	51
Pierre Formation:			
	Shale, gray-----	6	57

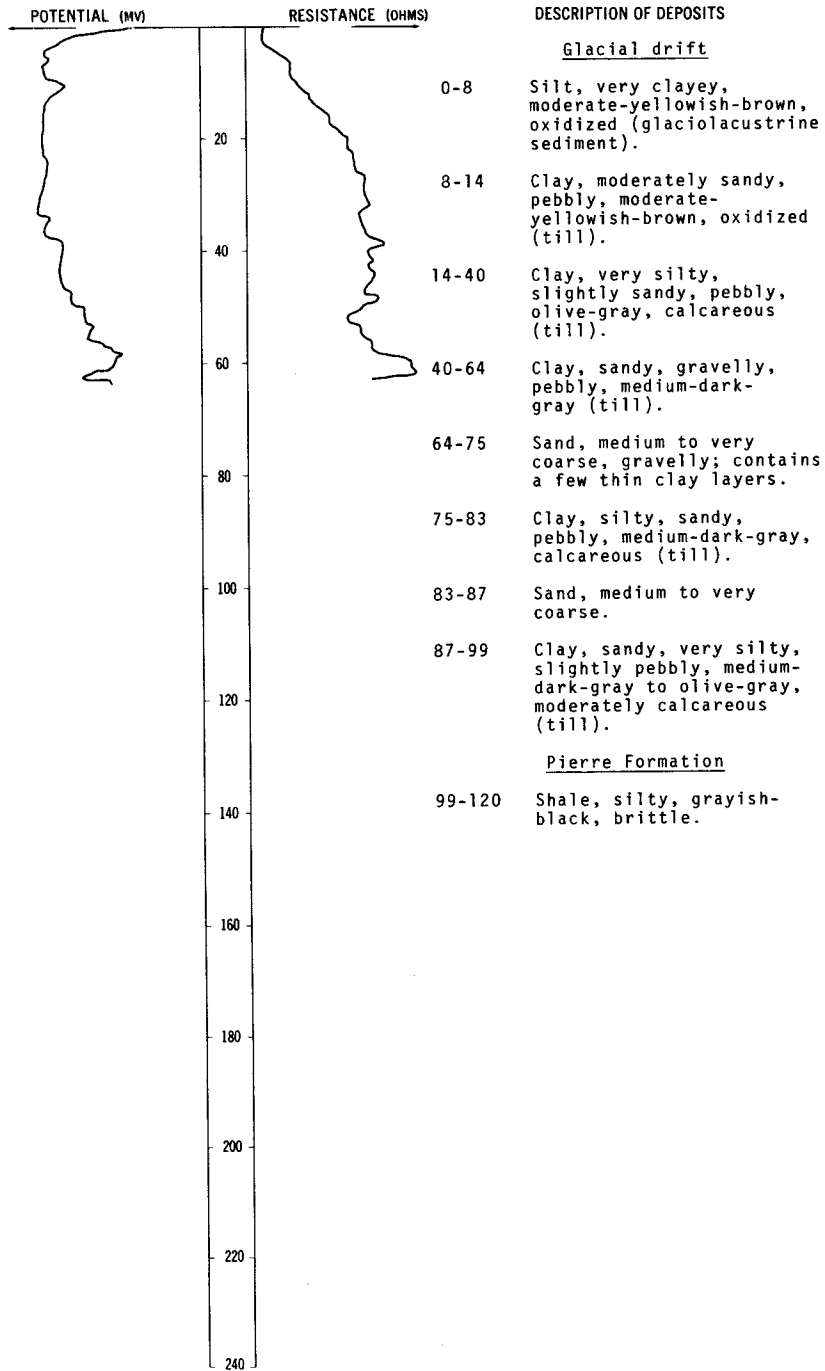
NDSWC 8871

LOCATION: 154-065-14CCC

DATE DRILLED: August 1973

ALTITUDE: 1435  
(FT, MSL)

DEPTH: 120  
(FT)

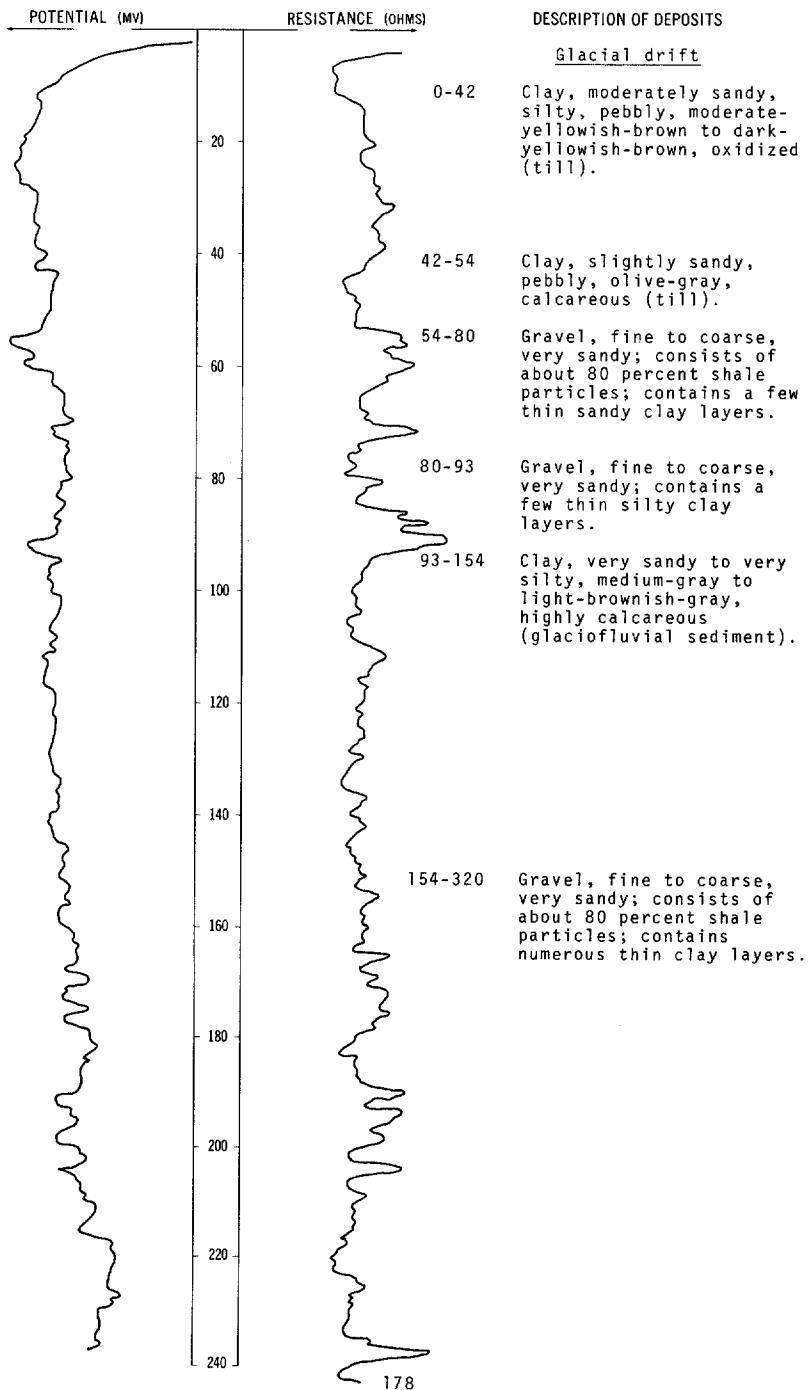


LOCATION: 154-065-15CC

DATE DRILLED: September 1973

ALTITUDE: 1475  
(FT, MSL)

DEPTH: 445  
(FT)





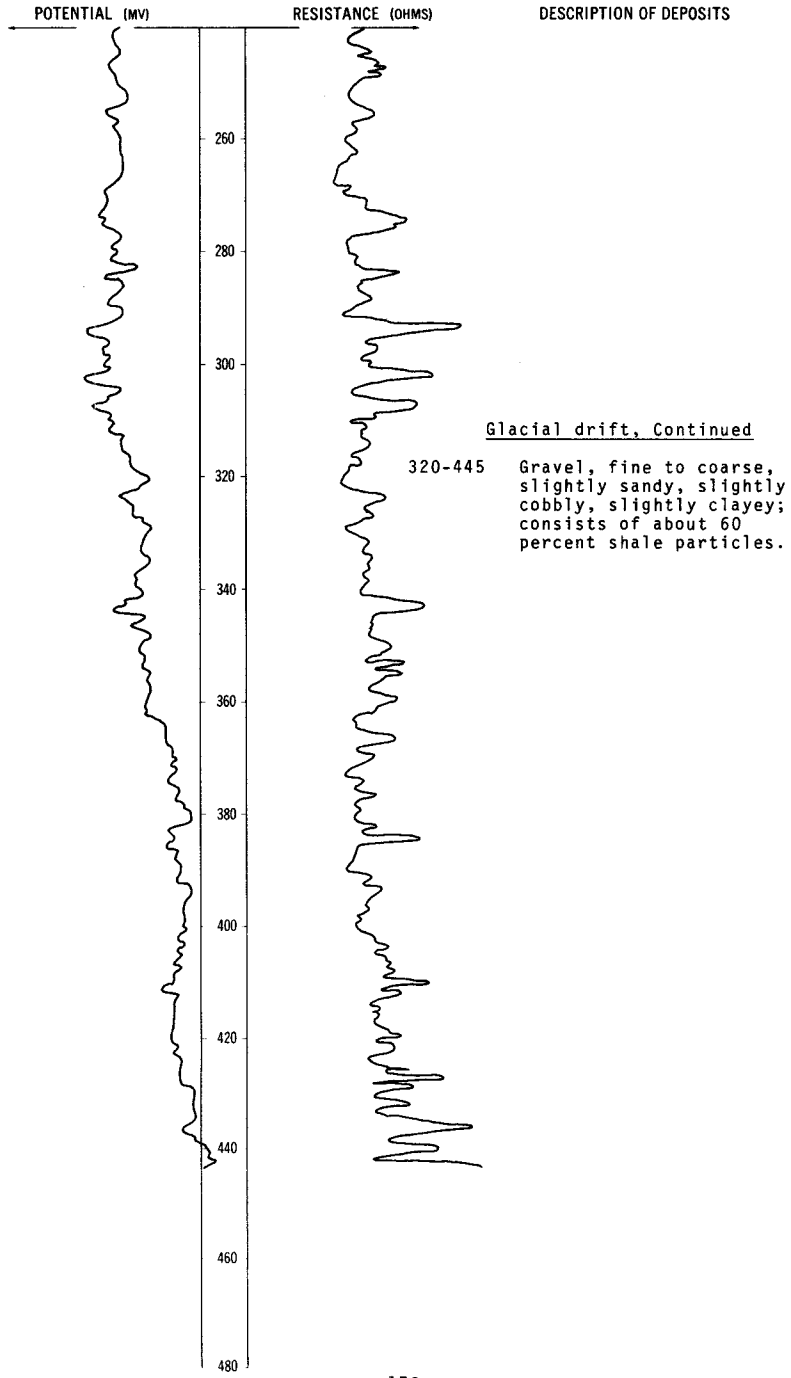
NDSWC 8872, Continued

LOCATION: 154-065-15CCC

DATE DRILLED: September 1973

ALTITUDE: 1475  
(FT. MSL)

DEPTH: 445  
(FT)

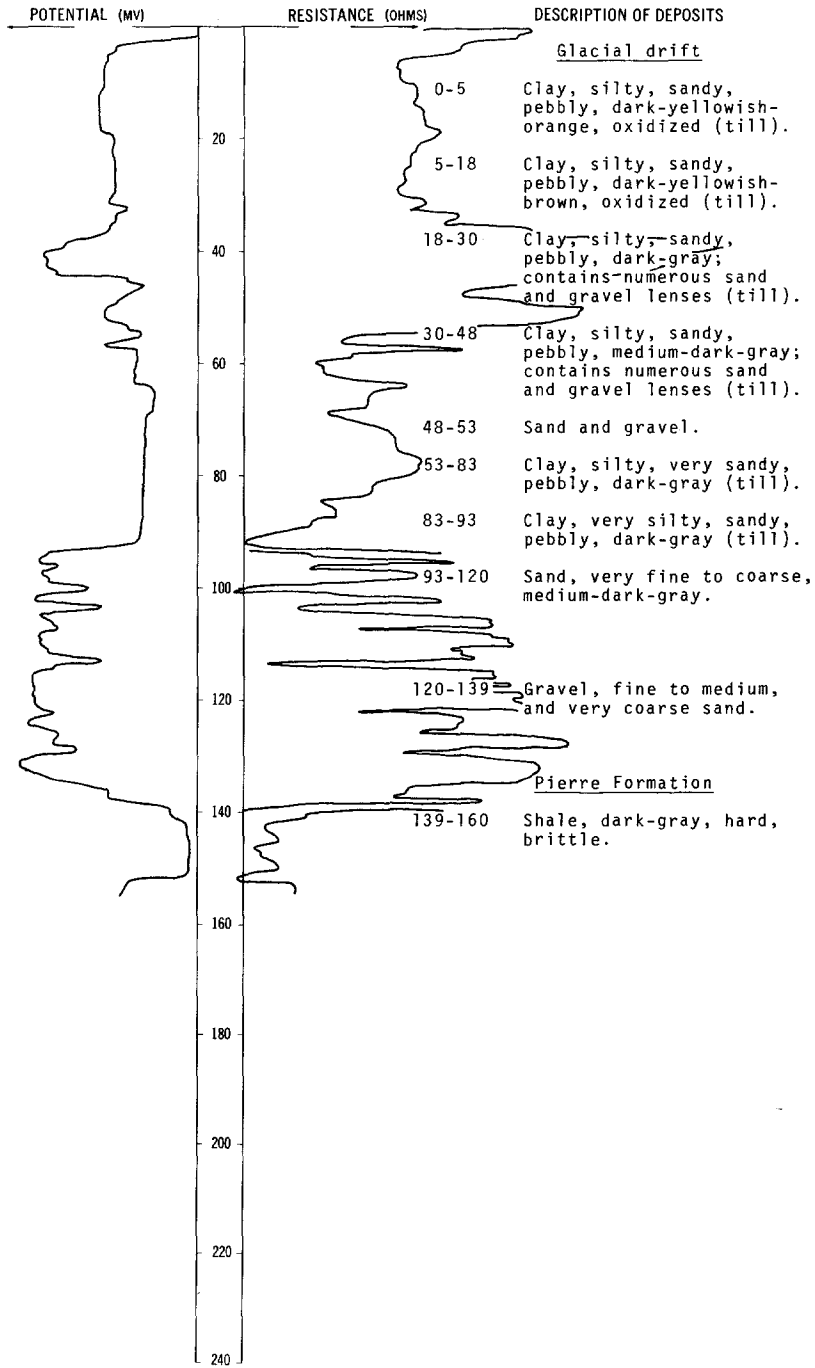


LOCATION: 154-065-17AAA

DATE DRILLED: August 1974

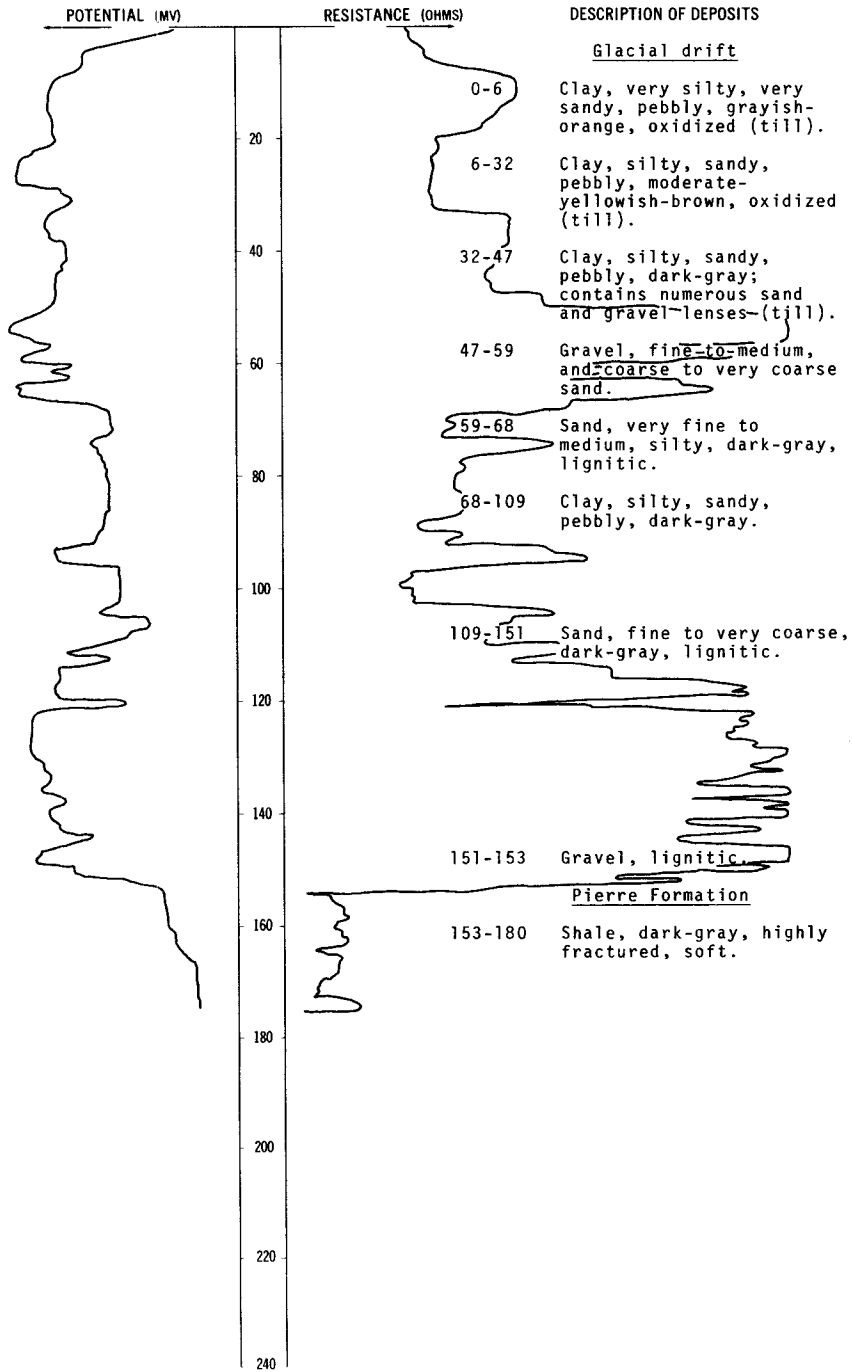
ALTITUDE: 1472  
(FT, MSL)

DEPTH: 160  
(FT)



LOCATION: 154-065-17DDA  
 ALTITUDE: 1478  
 (FT, MSL)

DATE DRILLED: August 1974  
 DEPTH: 180  
 (FT)



154-065-20DDD2  
(Log from Holbeck Well Service)

Altitude: 1482 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil-----	2.5	2.5
	Clay, yellow-----	45.5	48
	Clay, sandy-----	28	76
	Sand, fine-----	48	124
	Sand, coarse-----	3	127

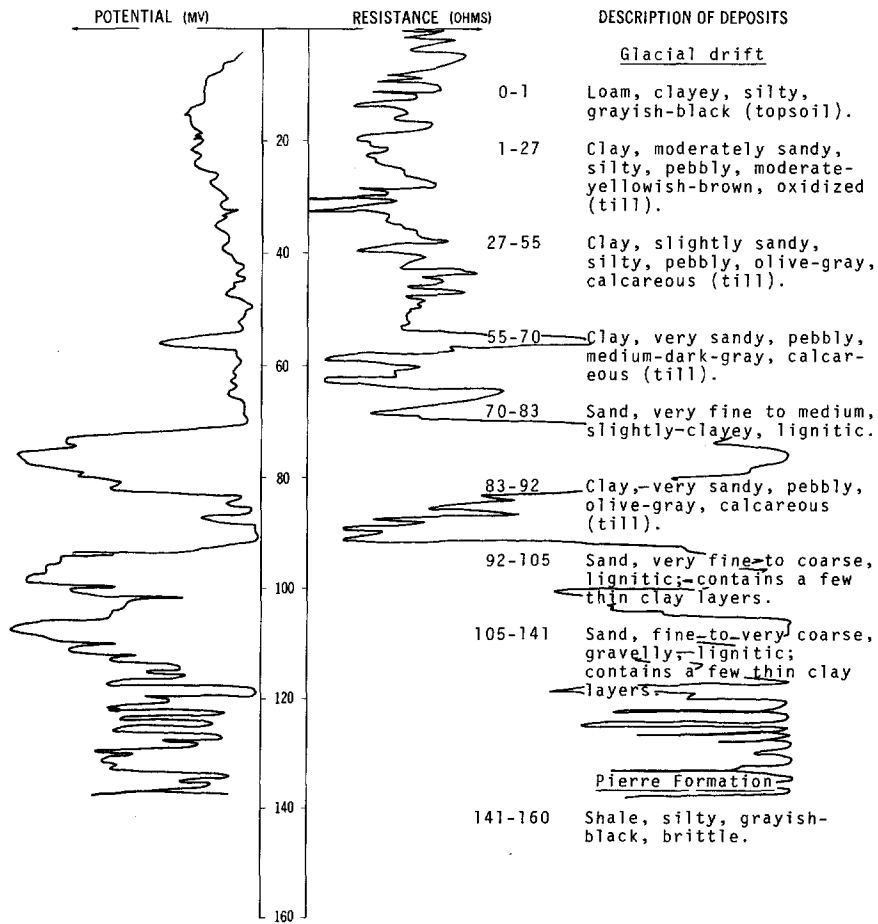
NDSWC 8873

LOCATION: 154-065-21CCC

DATE DRILLED: September 1973

ALTITUDE: 1473  
(FT, MSL)

DEPTH: 160  
(FT)



154-065-23ADA2  
(Log modified from Holbeck Well Service)

Altitude: 1465 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Soil, black-----	1	1
	Clay and gravel, yellow-----	15	16
	Clay, yellow, soft-----	10	26
	Clay and gravel, blue-----	22	48
	Sand, fine-----	3	51
	Clay, gravelly, blue-----	3	54
Pierre Formation (?):			
	Shale-----	18	72
	Gravel, coarse-----	--	72

154-065-23BAA  
Test hole 6X  
(Log modified from Paulson and Akin, 1964, p. 131)

Altitude: 1475 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-brown-----	14	15
	Till, gray-----	27	42
Pierre Formation:			
	Shale, gray-----	5	47

154-065-23DAA  
Test hole 7X  
(Log modified from Paulson and Akin, 1964, p. 131)

Altitude: 1465 feet

Glacial drift:			
	Topsoil, gray-black-----	1	1
	Till, light-brown-----	23	24
	Till, gray-----	11	35
	Gravel, fine; sand, coarse, gray; mainly detrital shale, well sorted-----	8	43
	Till, gray-----	6	49
	Gravel, fine; sand, coarse, gray; mainly detrital shale, well sorted-----	9	58
	Till, gray-----	44	102
	Sand, coarse; gravel, fine, very clayey-----	24	126
	Till, gray-----	3	129

154-065-24BBB  
 Test hole 5X  
 (Log modified from Paulson and Akin, 1964, p. 132)

Altitude: 1465 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-brown-----	15	16
	Till, sandy and gravelly, gray-----	5	21
	Sand and gravel, very clayey, gray-----	13	34
	Till, very sandy and gravelly, gray-----	4	38
	Till, gray-----	3	41
	Sand, fine to coarse, very clayey, gray-----	4	45

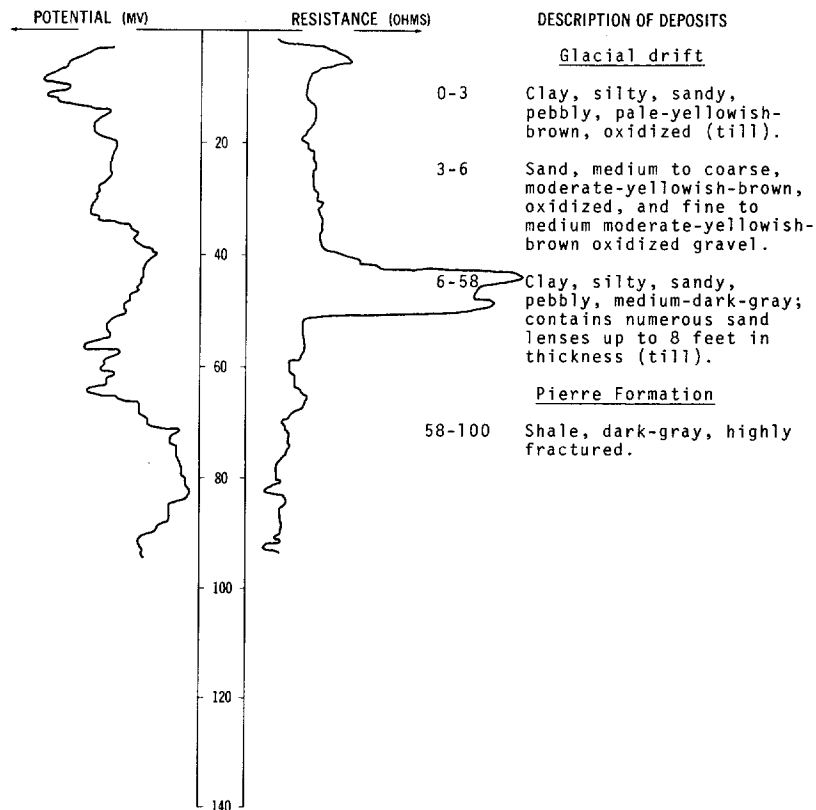
NDSWC 9019

LOCATION: 154-065-25BBB

DATE DRILLED: August 1974

ALTITUDE: 1467  
 (FT, MSL)

DEPTH: 100  
 (FT)

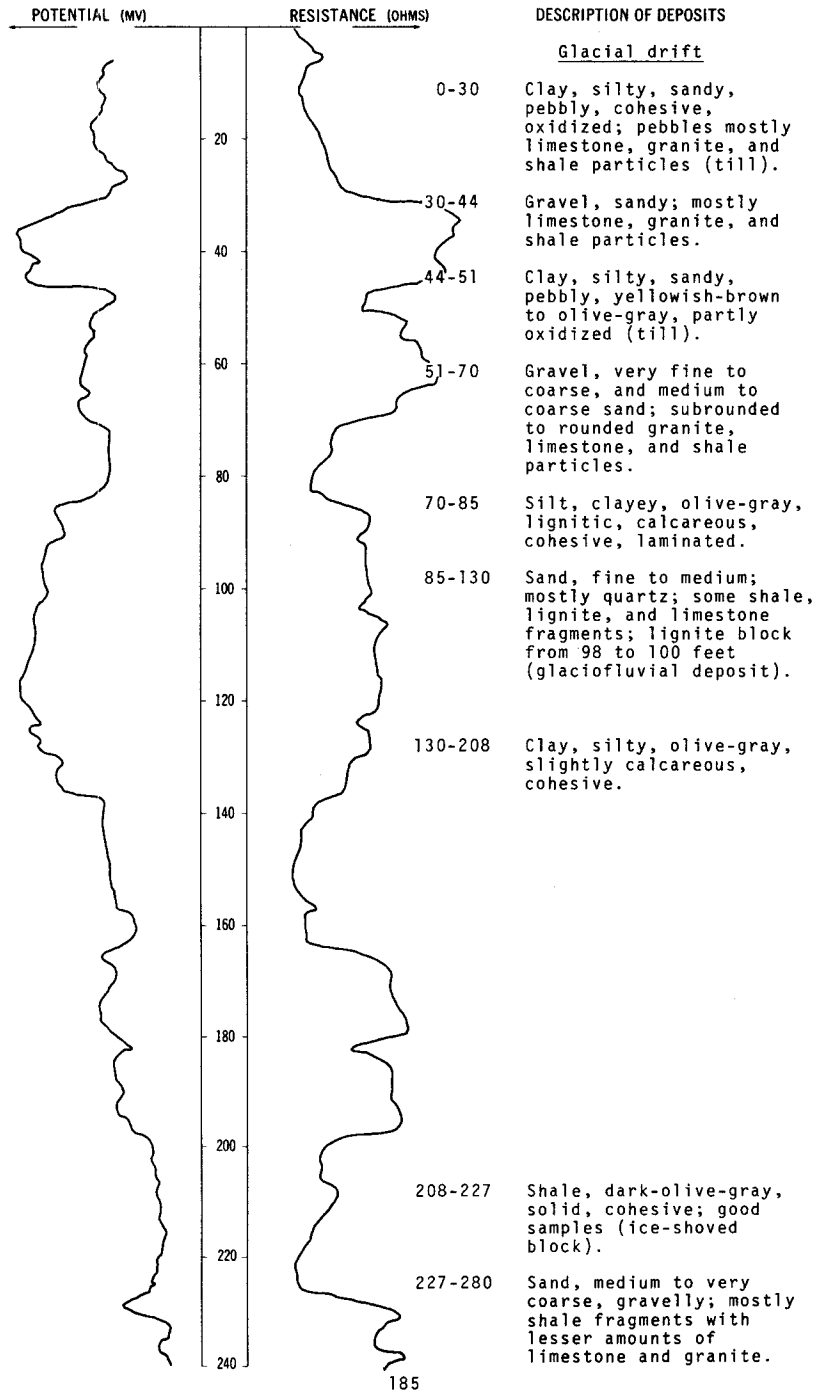


LOCATION: 154-065-28DAB

ALTITUDE: 1461  
(FT, MSL)

DATE DRILLED: June 1974

DEPTH: 402  
(FT)



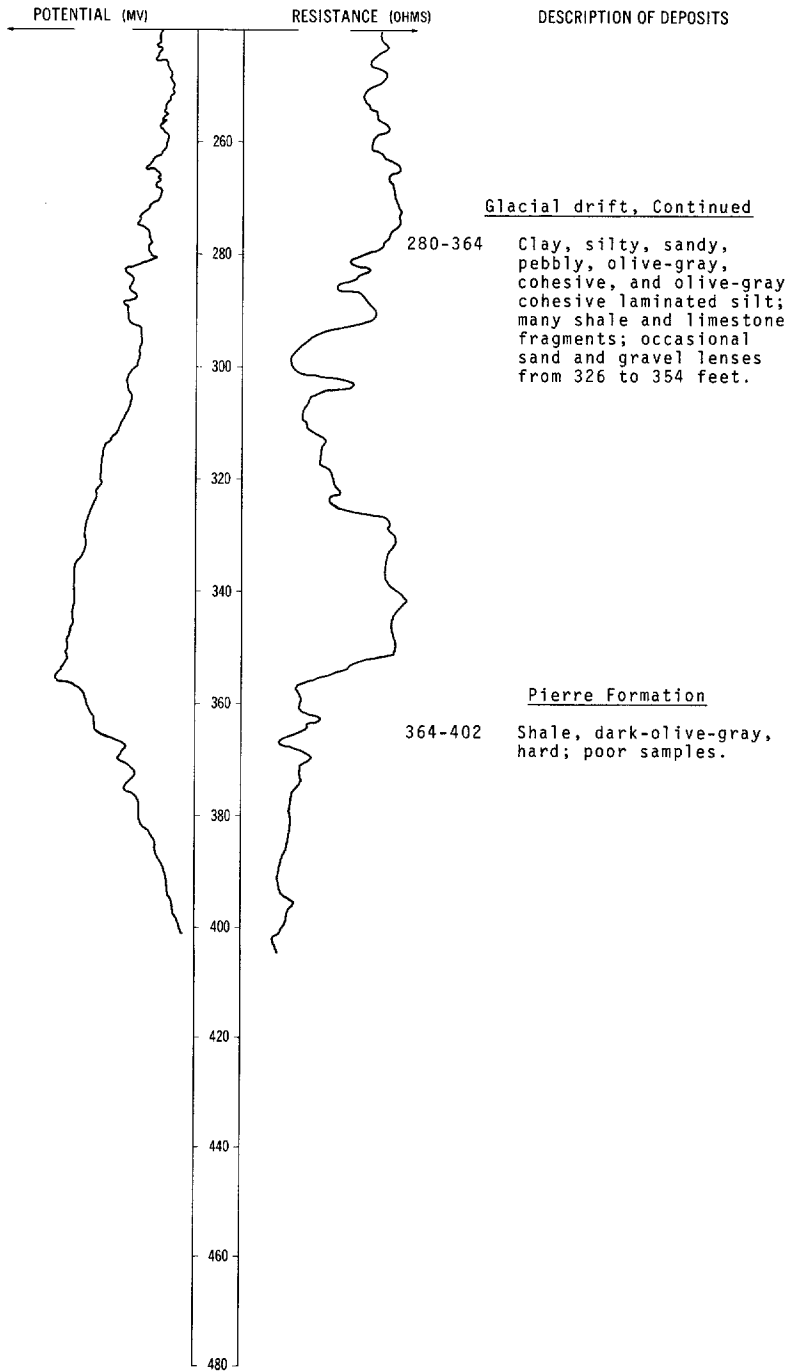
NDSWC 8975, Continued

LOCATION: 154-065-28DAB

DATE DRILLED: June 1974

ALTITUDE: 1461  
(FT, MSL)

DEPTH: 402  
(FT)



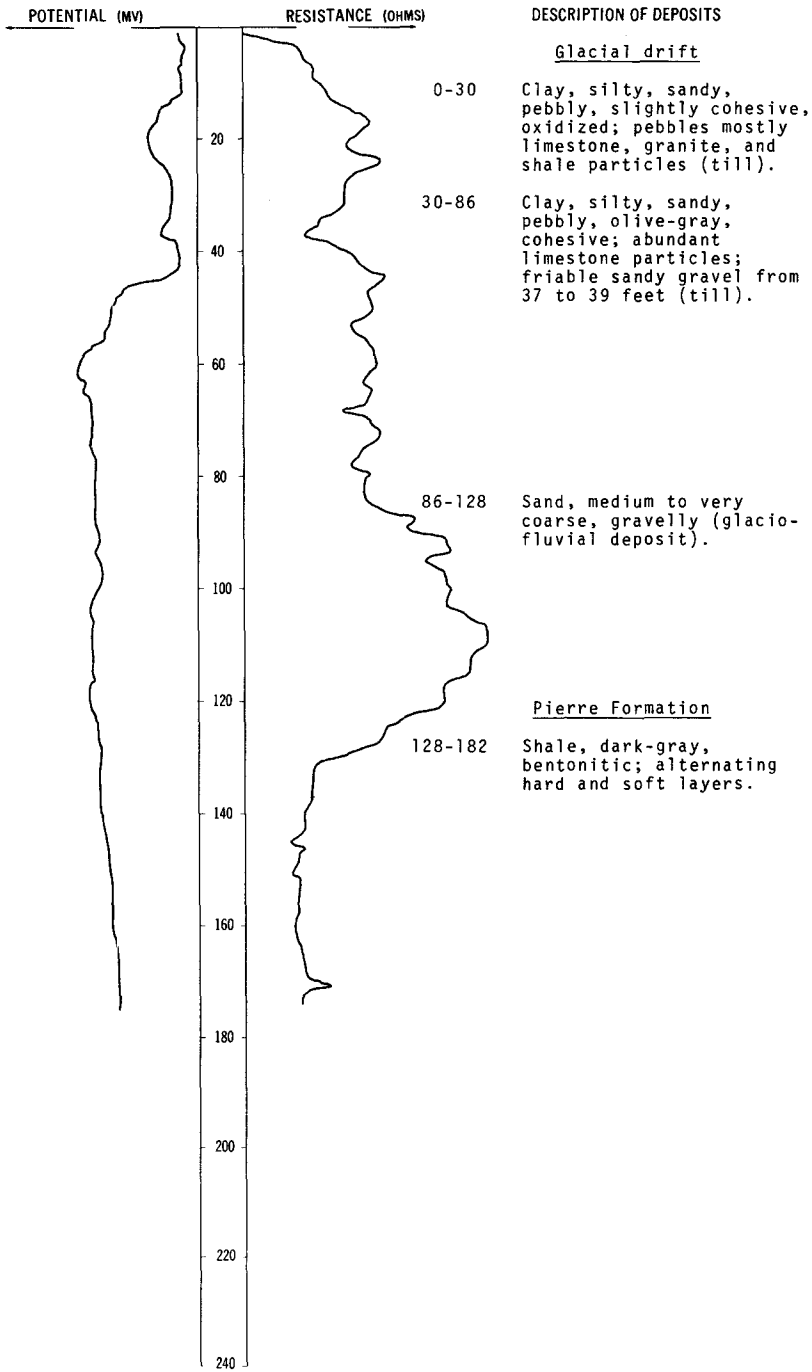


LOCATION: 154-065-28DCD

DATE DRILLED: June 1974

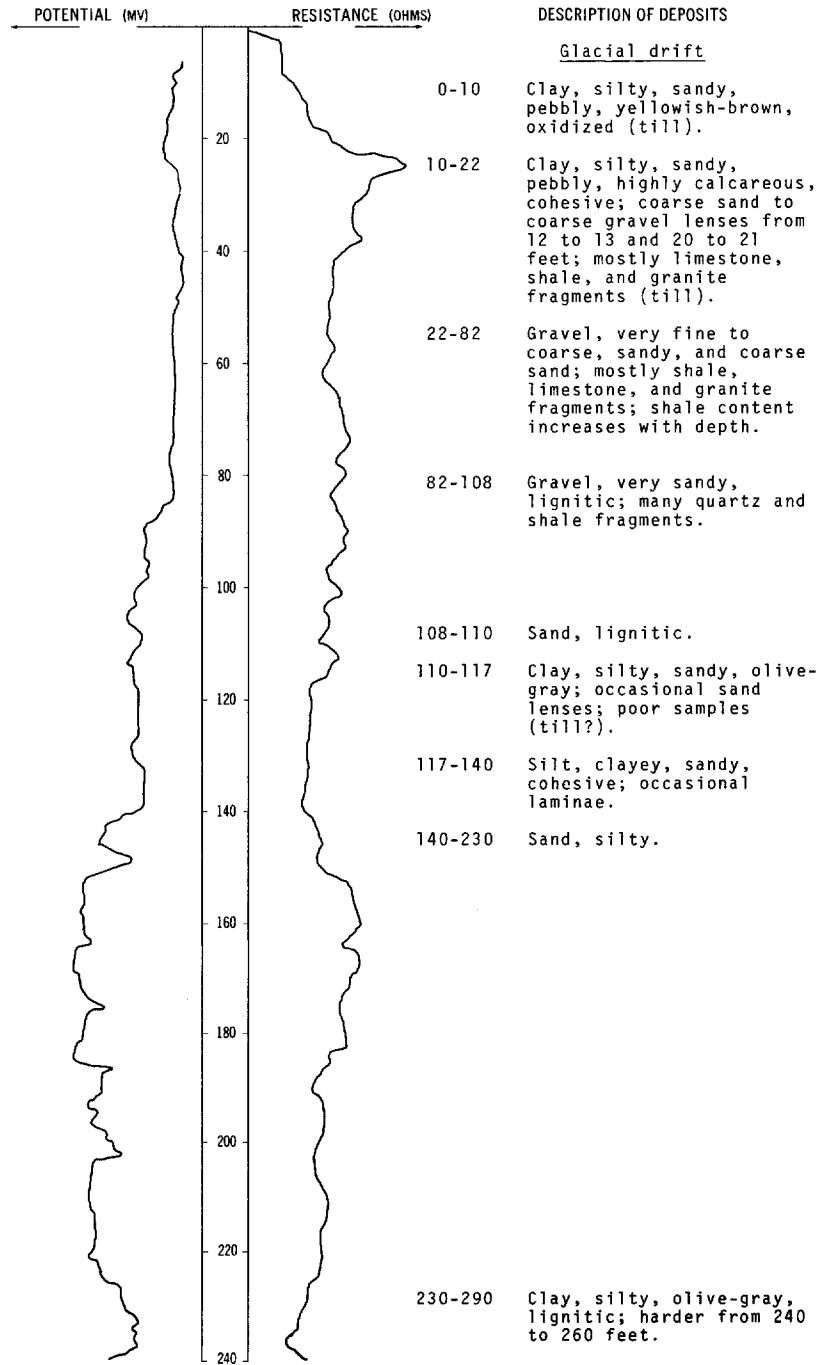
ALTITUDE: 1447  
(FT, MSL)

DEPTH: 182  
(FT)



LOCATION: 154-065-28DDA  
 ALTITUDE: 1425  
 (FT, MSL)

DATE DRILLED: June 1974  
 DEPTH: 342  
 (FT)



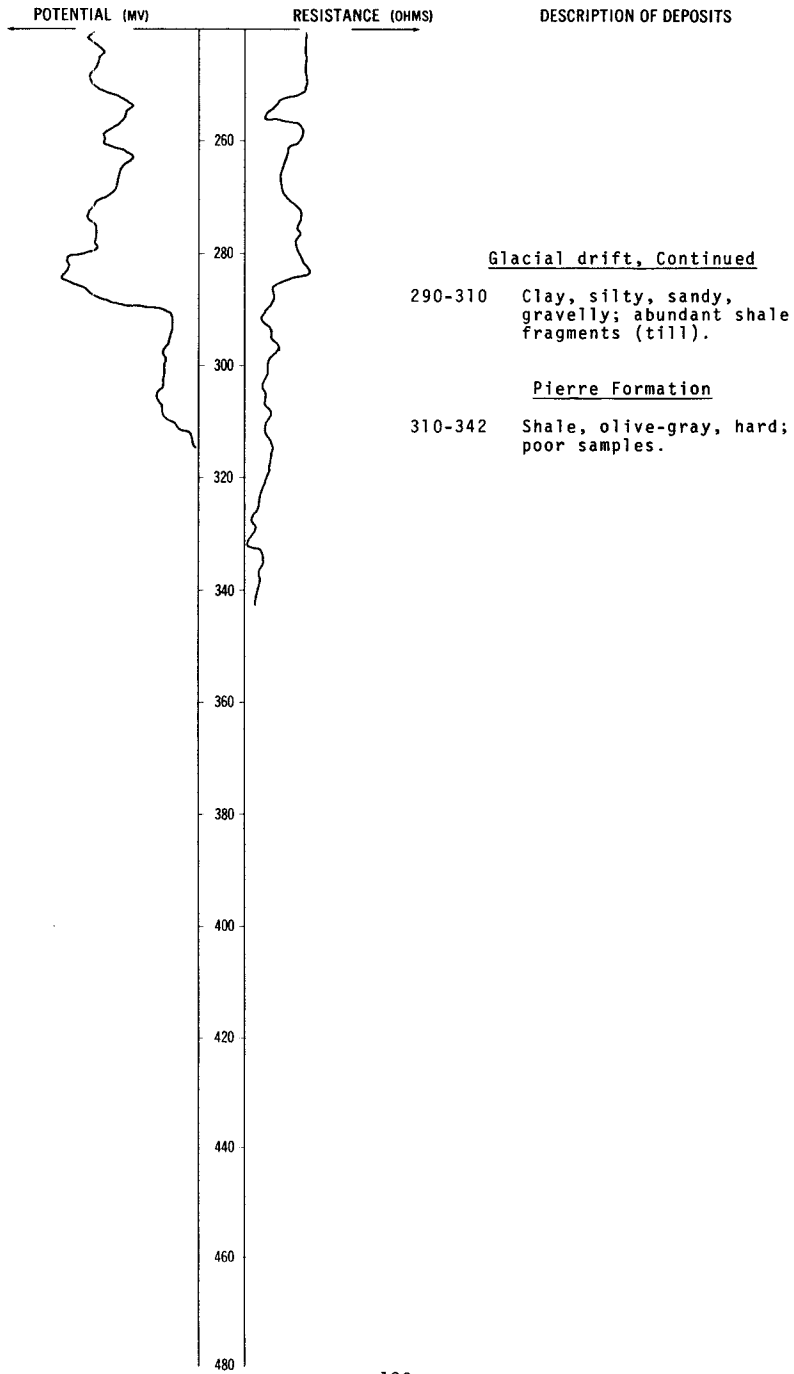
NDSWC 8976, Continued

LOCATION: 154-065-28DDA

DATE DRILLED: June 1974

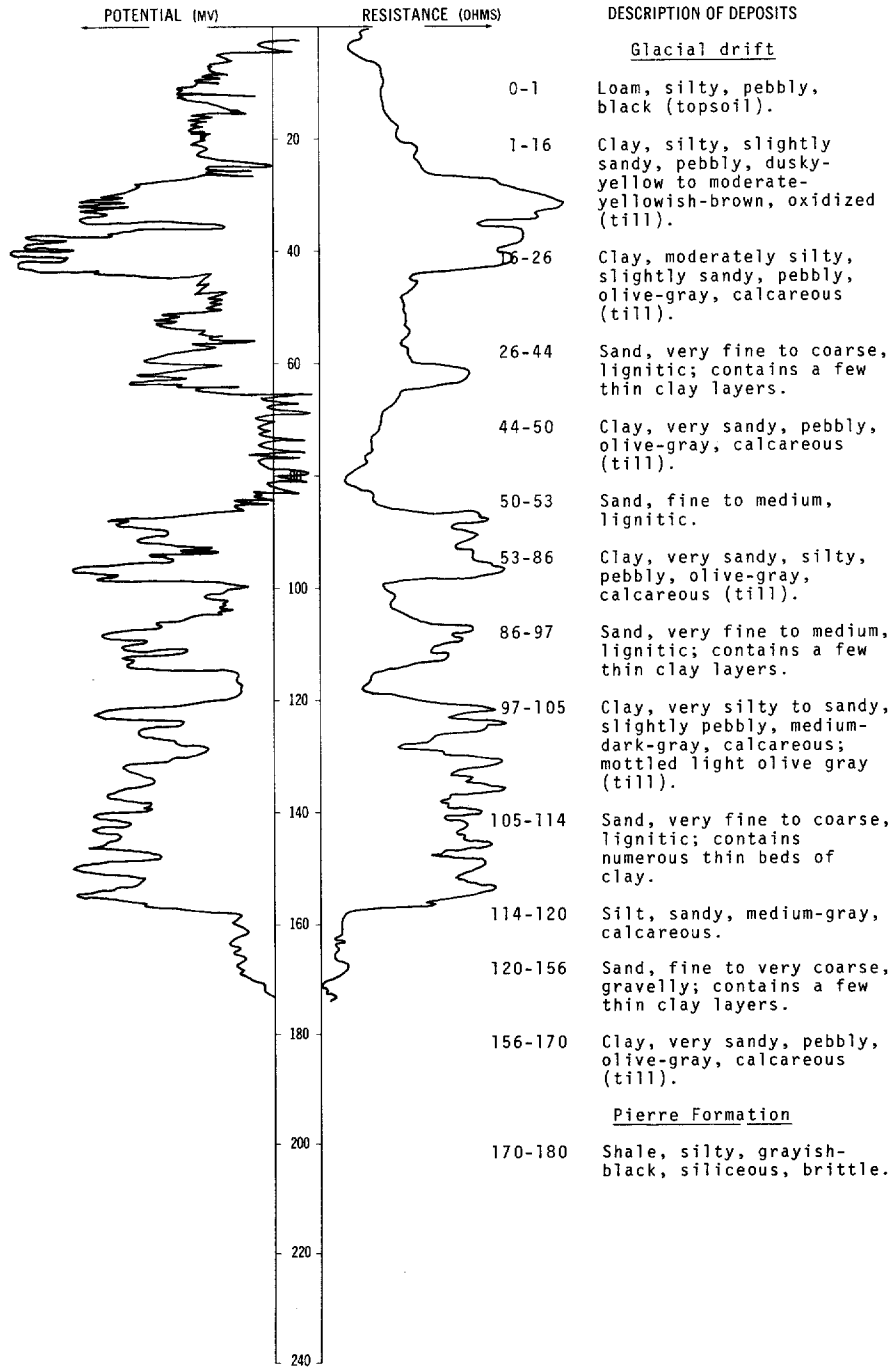
ALTITUDE: 1425  
(FT, MSL)

DEPTH: 342  
(FT)



LOCATION: 154-065-32CCC  
 ALTITUDE: 1455  
 (FT, MSL)

DATE DRILLED: September 1973  
 DEPTH: 180  
 (FT)



154-065-33AAB

Test hole 187

(Log modified from Paulson and Akin, 1964, p. 132)

Altitude: 1439 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Gravel, fine to coarse; very little detrital shale, well sorted-----	5	5
	Till, light-brown-----	17	22
	Till, gray-----	12	34
	Sand, coarse; gravel, fine, gray; about one-half detrital shale, very clayey-----	8	42
	Till, gray-----	55	97
	Sand and gravel, very clayey, gray-----	5	102
Pierre Formation:			
	Shale, gray-----	8	110

154-065-33AAD

Test hole 186

(Log modified from Paulson and Akin, 1964, p. 132)

Altitude: 1417 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Gravel, medium; sand, medium to coarse; very little detrital shale, well sorted-----	9	10
	Gravel, medium; clay, sandy, gray-----	20	30
	Gravel, medium; sand, coarse-----	10	40
	Till, gray-----	30	70
	Clay, light-gray; brown gray towards bottom-----	37	107
	Till, gray-----	89	196
Pierre Formation:			
	Shale, gray-----	19	215

154-065-34BCD  
 Test hole 185  
 (Log modified from Paulson and Akin, 1964, p. 133)

Altitude: 1450 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till or clay, gray-----	2	3
	Sand, fine to coarse, clayey, light-brown-----	3	6
	Till, light-brown-----	28	34
	Till, gray-----	15	49
	Till or clay, gray-----	19	68
	Till, gray-----	122	190
	Till or clay, gray-----	62	252
	Till, gray-----	94	346
Pierre Formation:			
	Shale, gray-----	4	350

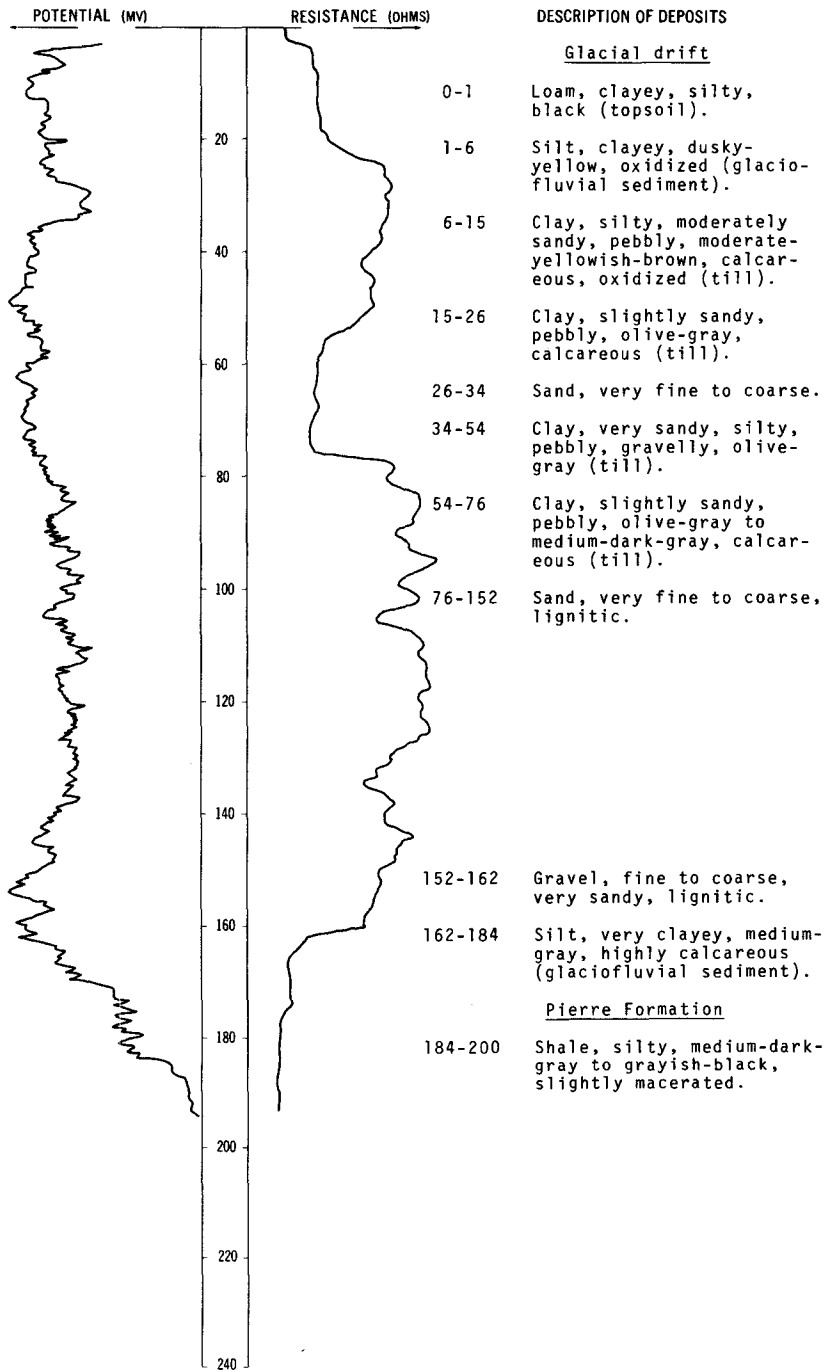
154-065-34CCD  
 Test hole 184  
 (Log modified from Paulson and Akin, 1964, p. 133)

Altitude: 1452 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till or clay, light-gray-----	2	3
	Sand and gravel, light-brown-----	1	4
	Till, light-brown-----	18	22
	Till, sandy and gravelly, gray-----	18	40
	Till, gray-----	58	98
	Till, very sandy and gravelly, gray-----	37	135
	Sand, coarse; gravel, fine, clayey, gray-----	37	172
Pierre Formation:			
	Shale, gray-----	8	180

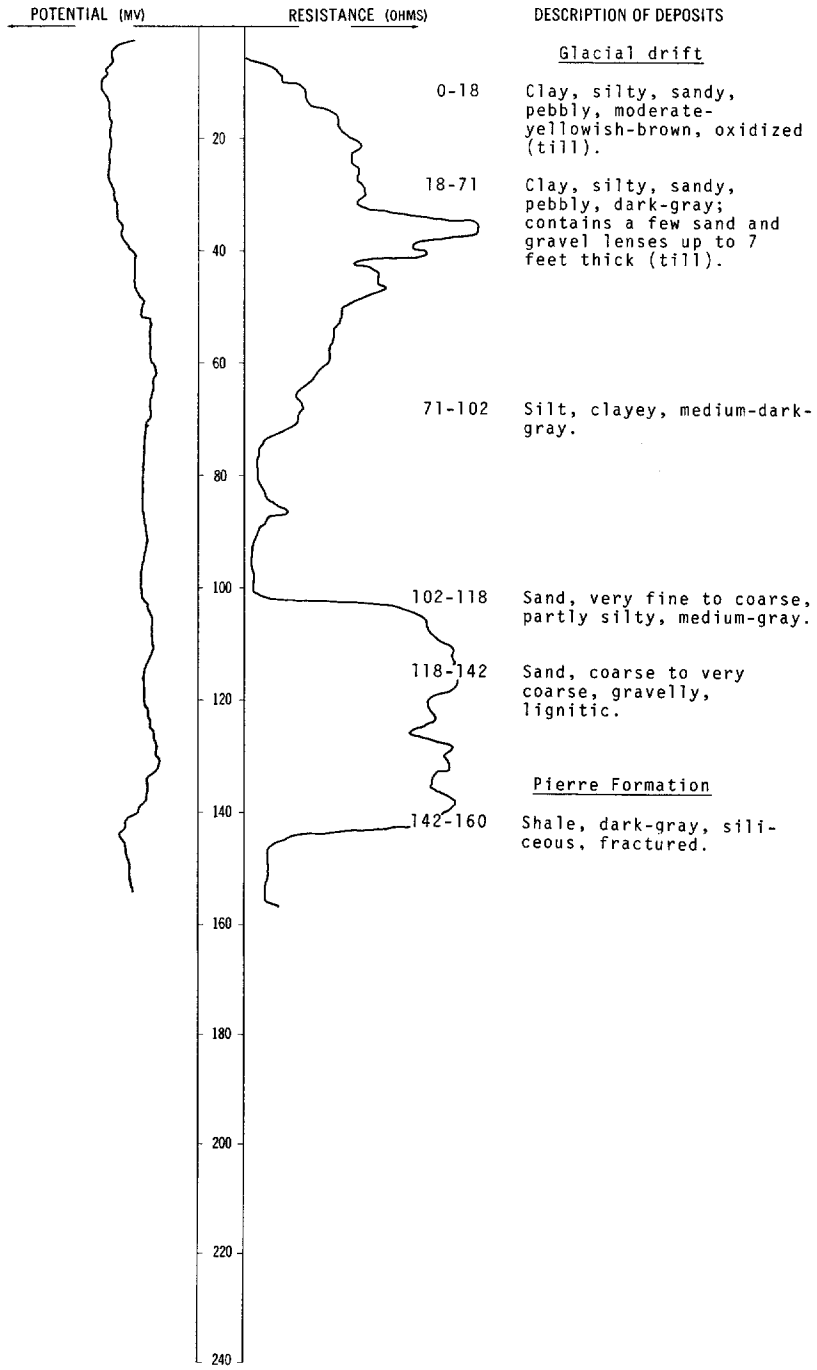
LOCATION: 154-065-35AAA  
 ALTITUDE: 1476  
 (FT, MSL)

DATE DRILLED: August 1973  
 DEPTH: 200  
 (FT)



LOCATION: 154-065-35BBB  
ALTITUDE: 1472  
(FT, MSL)

DATE DRILLED: August 1974  
DEPTH: 160  
(FT)





154-065-35CCC  
 Test hole 183  
 (Log modified from Paulson and Akin, 1964, p. 134)

Altitude: 1472 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	2	2
	Till or clay, gray-----	1	3
	Till, light-brown-----	18	21
	Till, gray-----	11	32
	Sand and gravel, gray-----	3	35
	Till, gray-----	22	57
	Sand, coarse; gravel, fine, gray; mainly detrital shale, clayey-----	30	87
	Till, gray-----	31	118
	Sand, coarse; gravel, fine, gray; about one-half detrital shale, clayey-----	20	138
	Sand, coarse; gravel, fine, gray; about one-quarter detrital shale, well sorted-----	11	149
Pierre Formation:			
	Shale, gray-----	6	155

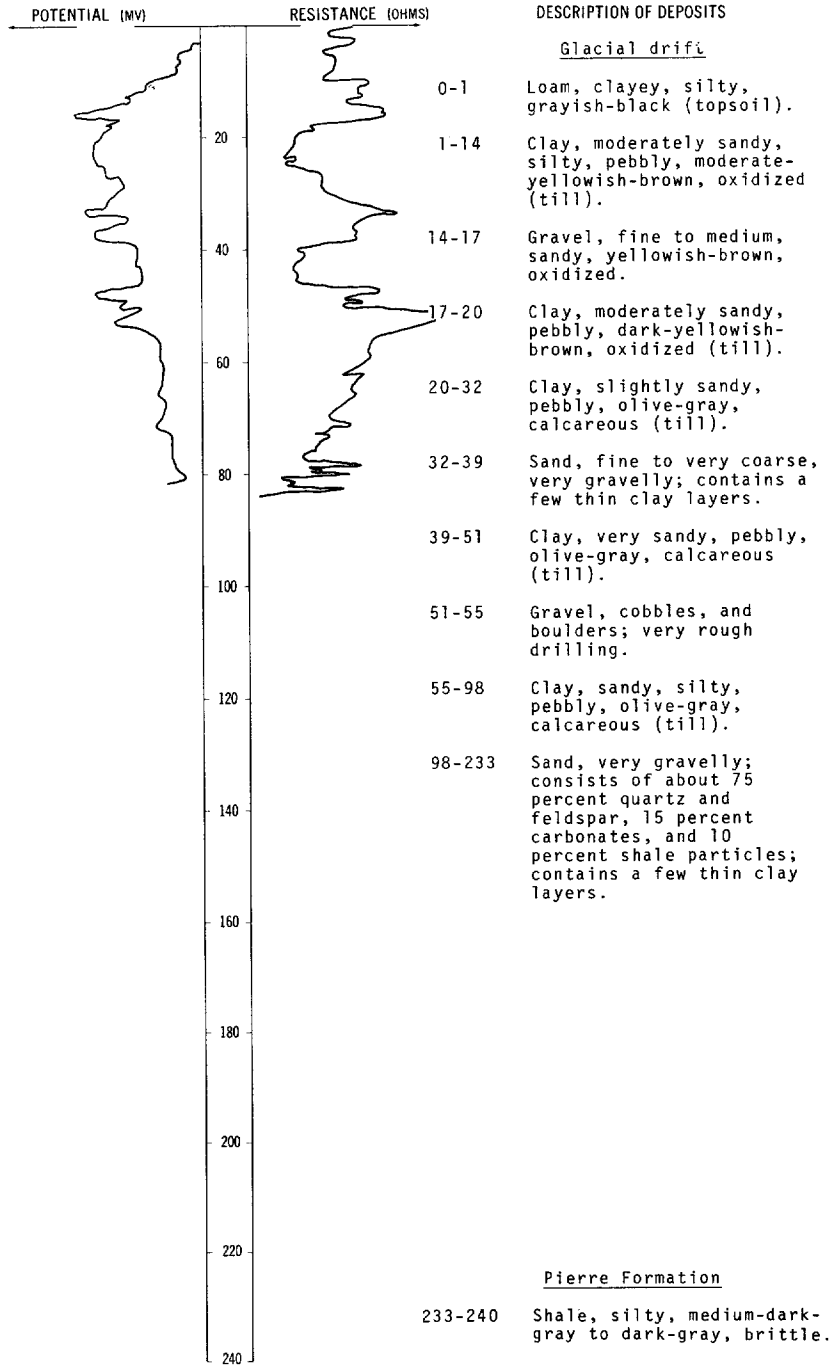
154-065-36DDD  
 Test hole 181  
 (Log modified from Paulson and Akin, 1964, p. 134)

Altitude: 1470 feet

Glacial drift:			
	Topsoil, black-----	2	2
	Till, light-gray-----	3	5
	Till, light-brown-----	12	17
	Till, gray-----	48	65
	Till, sandy, gravelly, gray-----	5	70
	Sand and gravel, very clayey, gray-----	7	77
	Till, gray-----	42	119
Pierre Formation:			
	Shale, gray-----	6	125

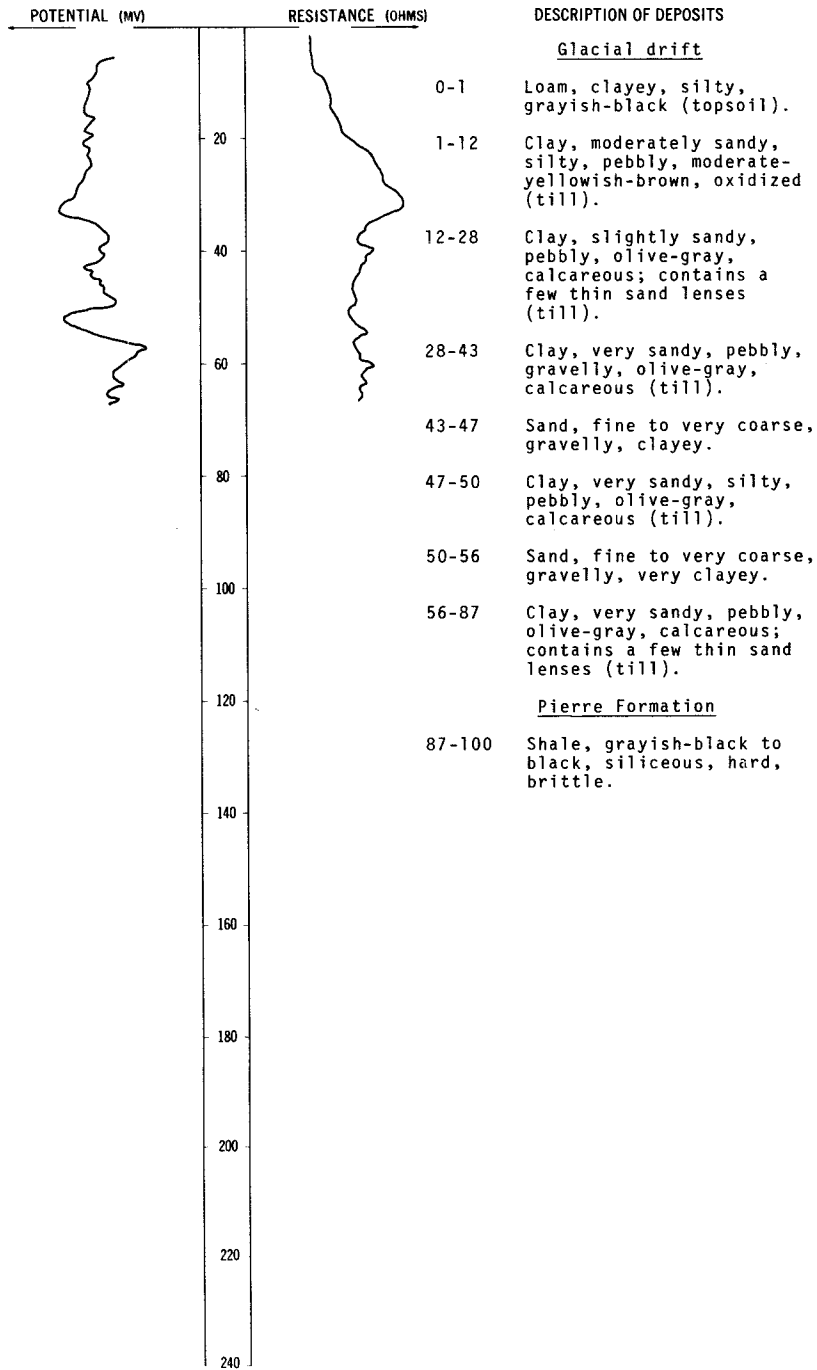
LOCATION: 154-066-01CCC  
 ALTITUDE: 1456  
 (FT. MSL)

DATE DRILLED: September 1973  
 DEPTH: 240  
 (FT)



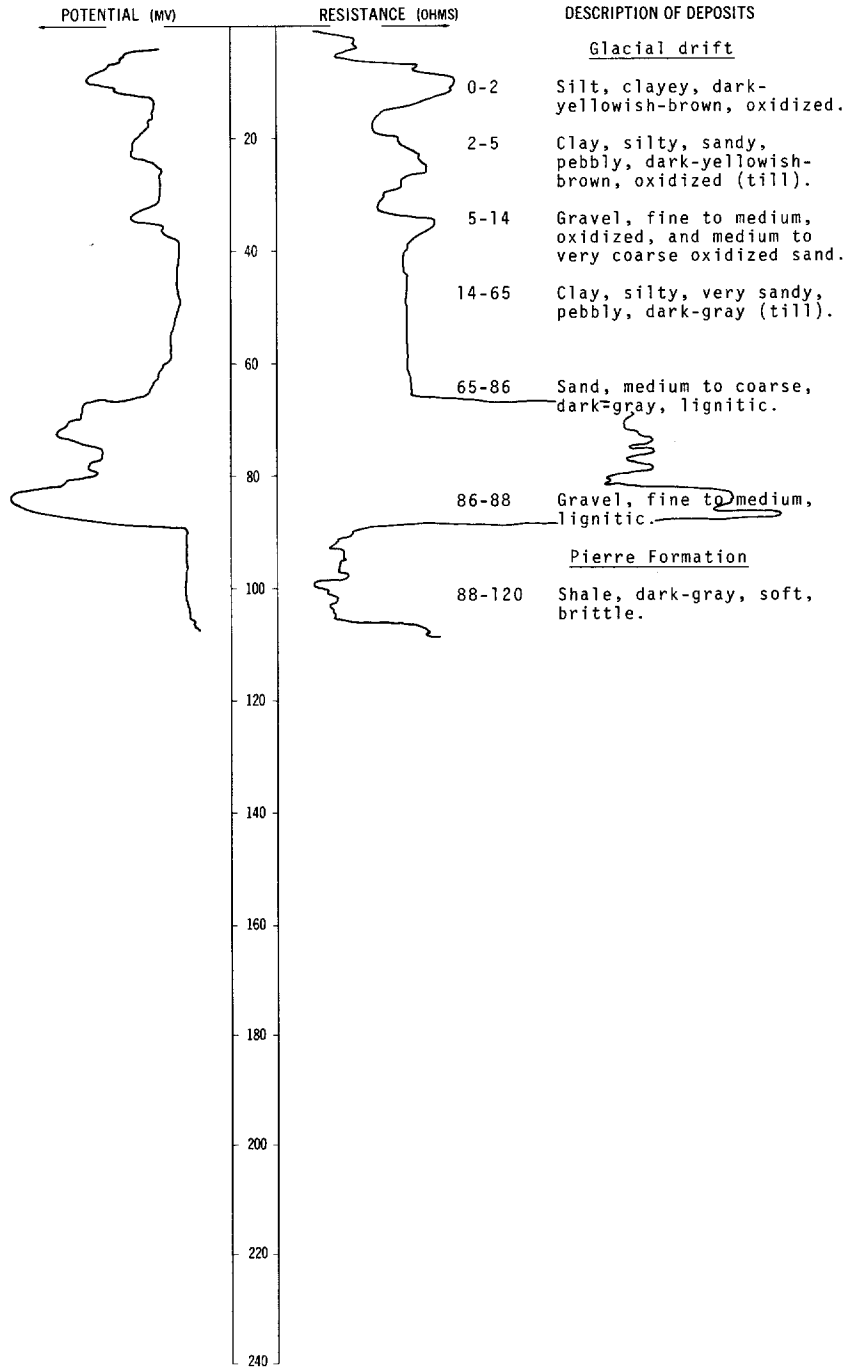
LOCATION: 154-066-05DDD  
 ALTITUDE: 1444  
 (FT, MSL)

DATE DRILLED: September 1973  
 DEPTH: 100  
 (FT)



LOCATION: 154-066-09DDD  
 ALTITUDE: 1445  
 (FT, MSL)

DATE DRILLED: August 1974  
 DEPTH: 120  
 (FT)

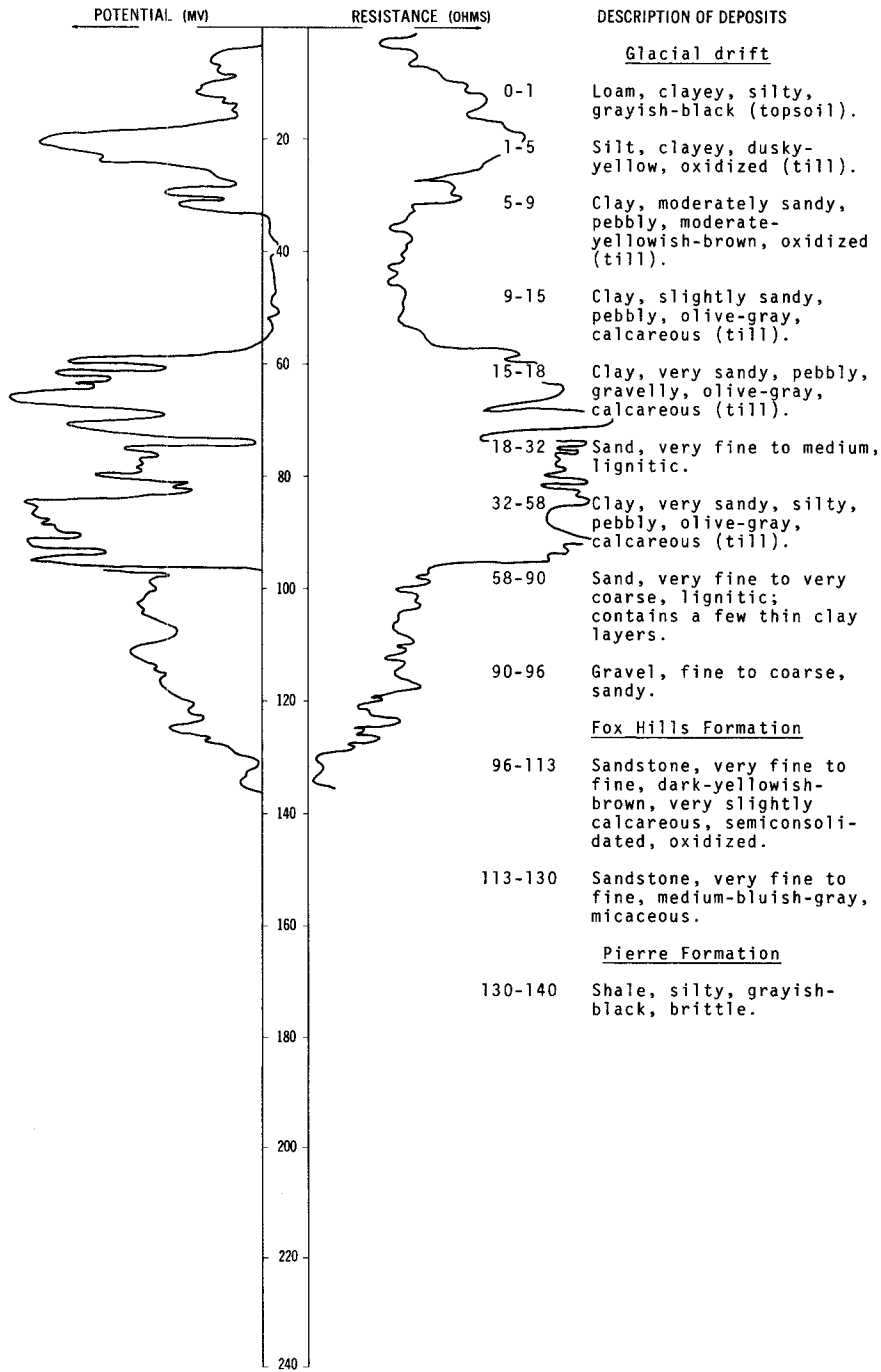


LOCATION: 154-066-15DDD

DATE DRILLED: September 1973

ALTITUDE: 1440  
(FT, MSL)

DEPTH: 140  
(FT)

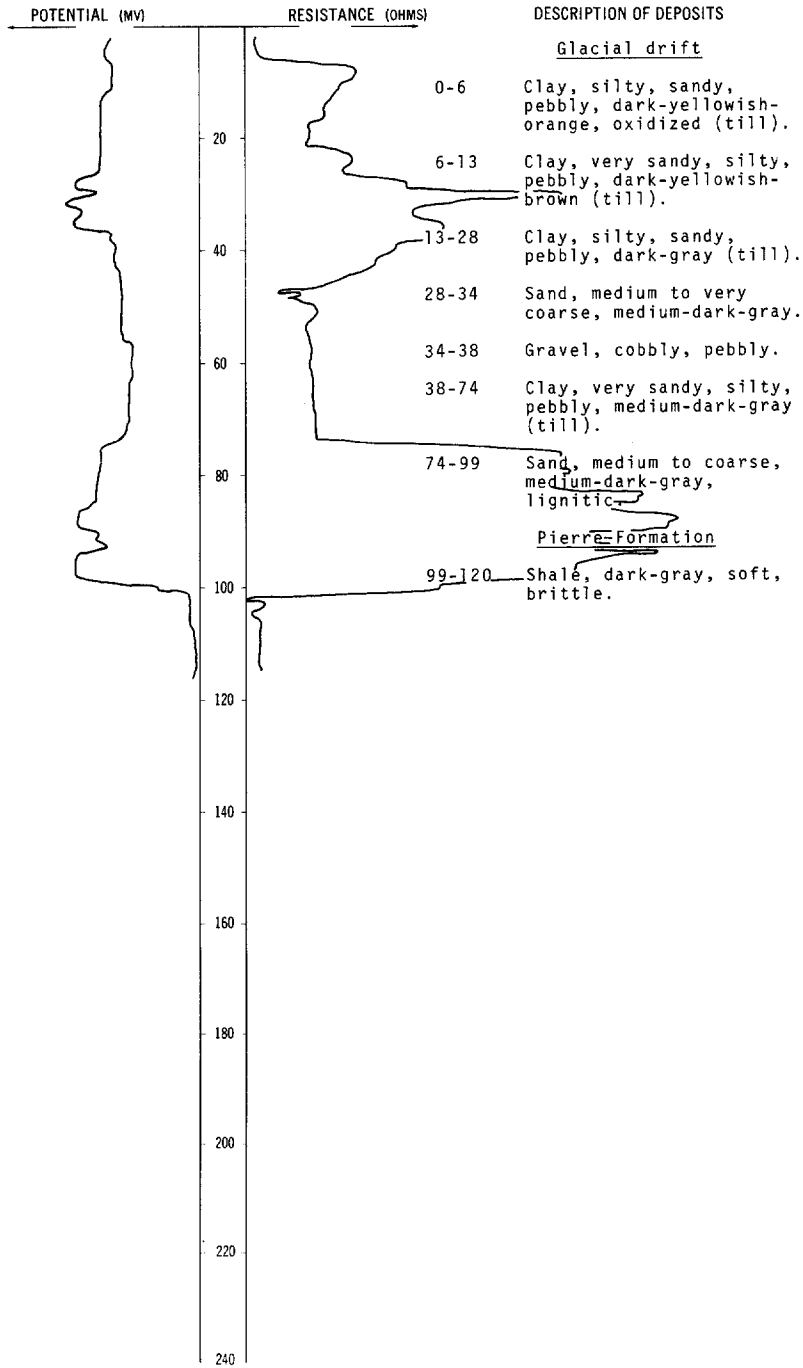


LOCATION: 154-066-23CCC

DATE DRILLED: August 1974

ALTITUDE: 1450  
(FT, MSL)

DEPTH: 120  
(FT)

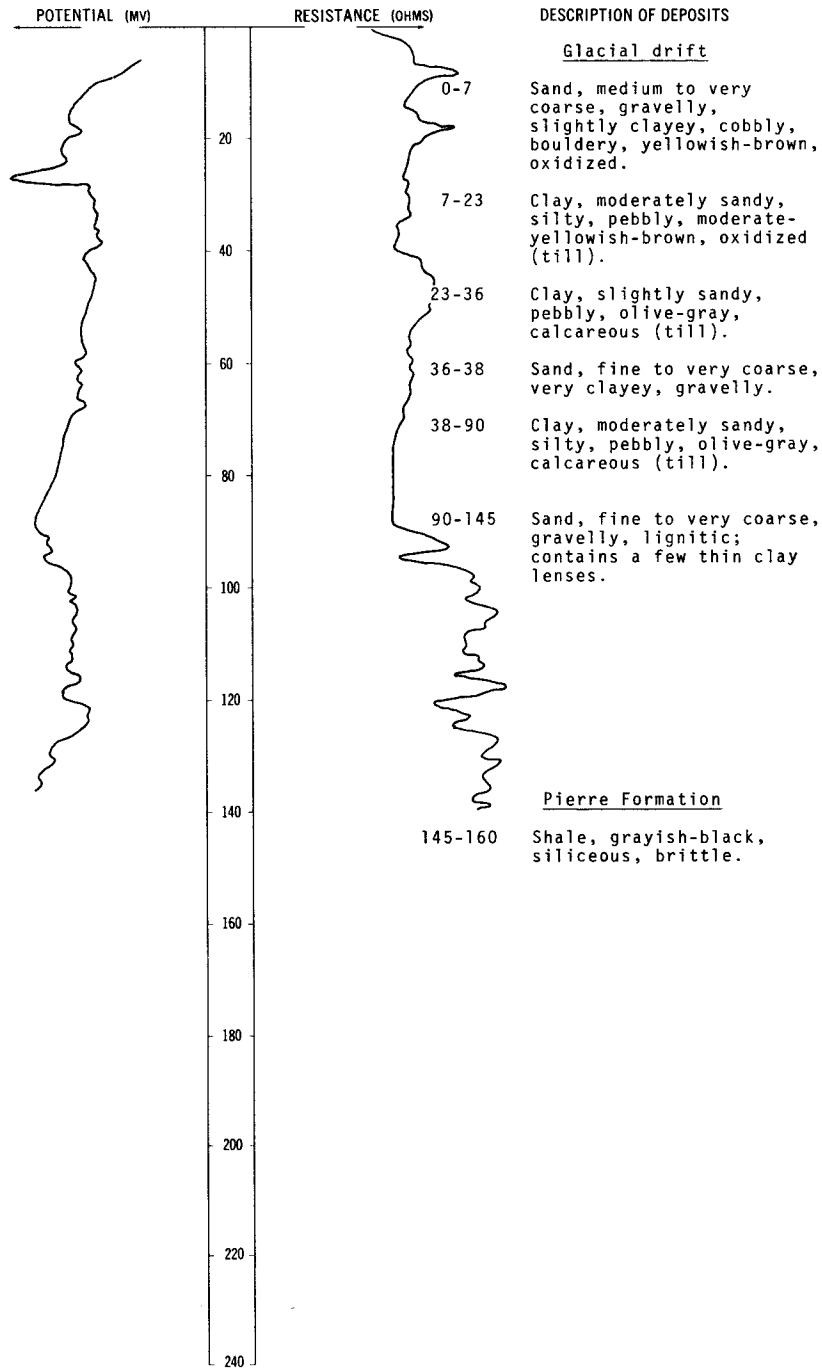


LOCATION: 154-066-23DDD

DATE DRILLED: September 1973

ALTITUDE: 1463  
(FT, MSL)

DEPTH: 160  
(FT)



154-066-25ADB  
(Log from Holbeck Well Service)

Altitude: 1454 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Soil, black-----	1.5	1.5
	Clay and gravel, yellow-----	36.5	38
	Clay and sand, blue-----	22	60
	Shale, soft, sticky-----	13	73
	Sand, quick-----	34	107
	Sand, coarse-----	9	116

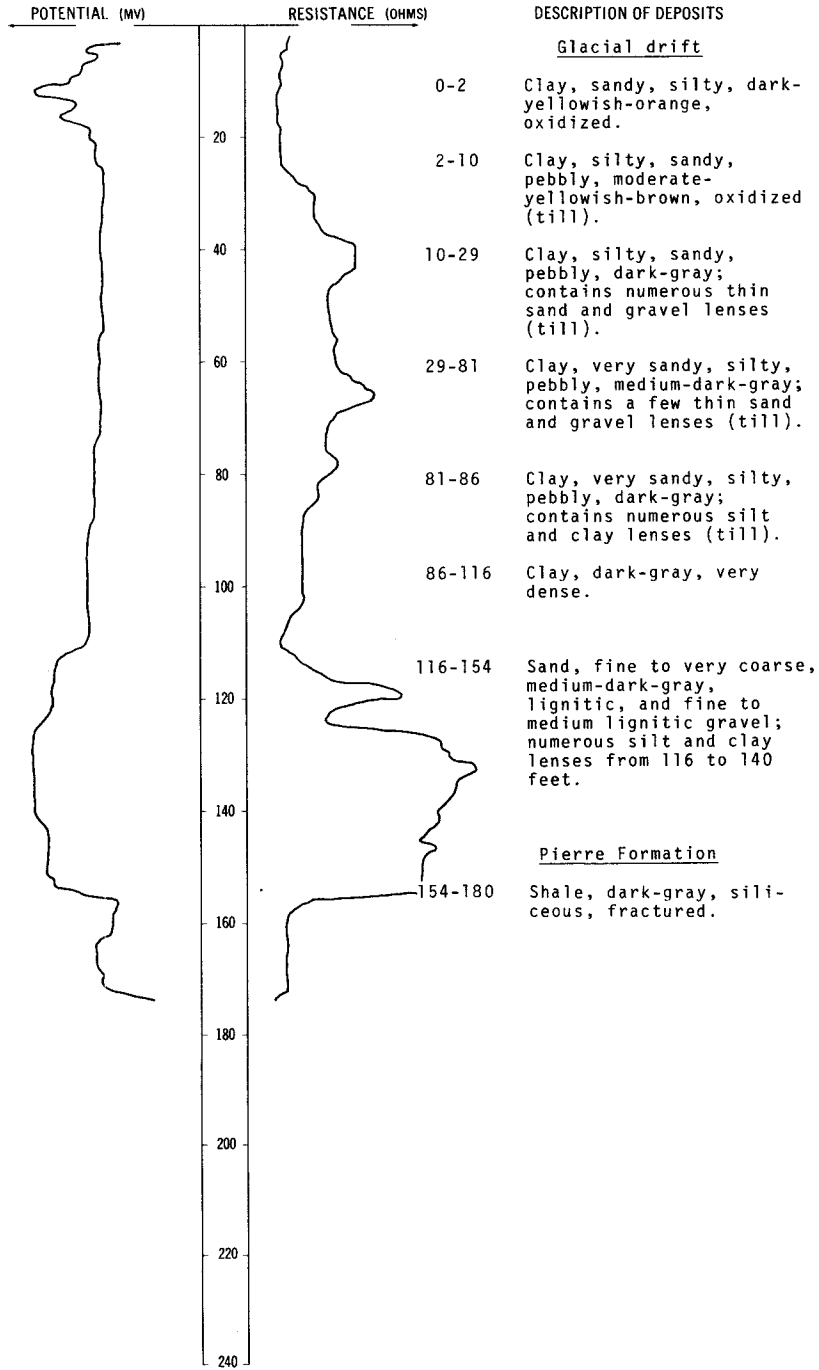


LOCATION: 154-066-25DDA

DATE DRILLED: August 1974

ALTITUDE: 1455  
(FT, MSL)

DEPTH: 180  
(FT)



154-066-35BCA  
 Test hole 356  
 (Log modified from Paulson and Akin, 1964, p. 136)

Altitude: 1442 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, sandy, gravelly, light-brown-----	1	1
	Sand, clayey, gravelly, light-brown-----	3	4
	Sand, coarse to very coarse; gravel, fine; silt and clay, light-brown; probably thin alternating beds of various materials-----	17	21
	Sand, medium to very coarse; gravel, fine to medium, gray; coarser material about one-half detrital shale, clayey-----	9	30
	Till, gray-----	51	81
	Sand, medium to very coarse; gravel, fine, gray; material is about one-half detrital shale, also considerable detrital lignite, clayey-----	28	109
Pierre Formation:			
	Shale, gray-----	6	115

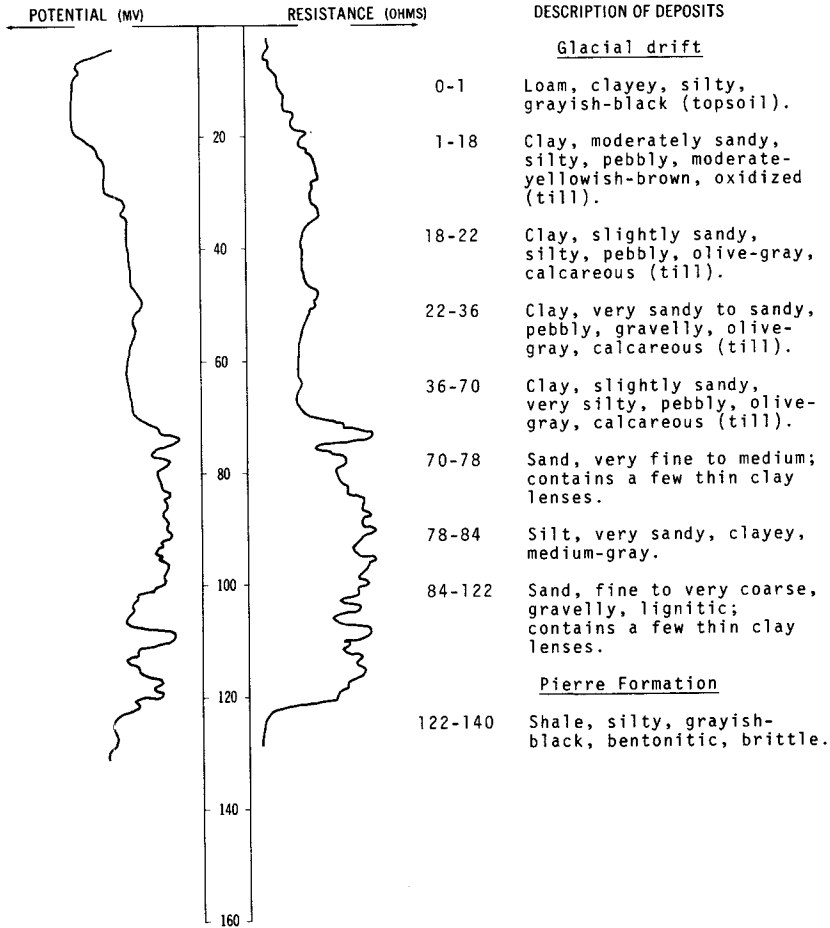
154-066-36AAA  
 Test hole 357  
 (Log modified from Paulson and Akin, 1964, p. 137)

Altitude: 1465 feet

Glacial drift:			
	Sand, very fine to very coarse, gravelly, light-brown-----	15	15
	Sand, very fine to very coarse, clayey, and silty, gravelly, light-brown-----	18	33
	Till, sandy and gravelly, gray-----	71	104
	Sand, very clayey, gray-----	20	124
	Till, sandy and gravelly-----	22	146

LOCATION: 154-066-36DCD  
 ALTITUDE: 1454  
 (FT. MSL)

DATE DRILLED: September 1973  
 DEPTH: 140  
 (FT)



155-060-04BBD  
 USAF 2027

Altitude: 1515 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
<u>Glacial drift:</u>			
	Clay, silty, sandy, black-----	4	4
	Clay, silty, sandy, gravelly, brown-----	4	8
	Sand, fine to coarse, silty, gravelly, yellowish-brown-----	10	18
<u>Pierre Formation:</u>			
	Shale, dark-gray, slightly fractured-----	112	130

155-060-08AAA  
 NDSWC 5993  
 (Log from Naplin, 1974, p. 19)

Altitude: 1526 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, sandy, silty, pebbly, dark-brown-----	1	1
	Clay, silty, moderately sandy, pebbly, moderate-yellowish-brown, slightly cohesive, moderately plastic, oxidized (till)-----	5	6
	Gravel, sandy, moderately clayey, fine to coarse, poorly sorted, angular to rounded, oxidized-----	10	16
	Clay, silty, slightly sandy, pebbly, moderate-yellowish-brown, moderately plastic, cohesive, oxidized (till)-----	12	28
	Clay, silty, slightly sandy, pebbly, olive-gray, moderately cohesive, slightly plastic (till)-----	4	32
Pierre Formation:			
	Shale, siliceous, grayish-black to black, brittle to moderately soft, noncalcareous, not fractured-----	8	40

155-060-14DDD  
 NDSWC 8037  
 (Log from Naplin, 1974, p. 20)

Altitude: 1510 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, clayey, pebbly, brownish-black-----	1	1
	Clay, silty, slightly sandy, pebbly, moderate-yellowish-brown, cohesive, slightly plastic, oxidized (till)-----	11	12
	Clay, silty, slightly sandy, pebbly, olive-gray, moderately cohesive, plastic, calcareous (till)-----	6	18
Pierre Formation:			
	Shale, siliceous, grayish-black to black, indurated, noncalcareous, not fractured-----	22	40

155-060-170DD  
 NDSWC 8036  
 (Log from Naplin, 1974, p. 19)

Altitude: 1505 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, clayey, grayish-black-----	1	1
	Clay, silty, moderately sandy, pebbly, occasional cobbles, moderate-yellowish-brown, cohesive, slightly plastic, oxidized (till)-----	11	12
Pierre Formation:			
	Shale, siliceous, grayish-black to black, indurated, noncalcareous, not fractured-----	8	20

155-060-24DCB  
 USAF 2028

Altitude: 1520 feet

Glacial drift:			
	Clay, sandy, black-----	2	2
	Silt, clayey, brown-----	2	4
	Sand, fine, clayey, silty, brown-----	4	8
	Sand, fine, silty, tan and brown-----	6	14
	Clay, sandy, silty, gravelly, brownish-gray-----	7	21
	Shale and clay, dark-gray; moderately hard to hard shale fragments in a very stiff to hard clay matrix-----	5	26
Pierre Formation:			
	Shale, dark-gray; highly fractured from 26 to 39, highly to moderately fractured from 39 to 98, and slightly fractured from 98 to 130 feet-----	104	130

155-060-26CCC  
 NDSWC 8800

Altitude: 1520 feet

Glacial drift:			
	Loam, silty, pebbly, clayey, black-----	1	1
	Clay, moderately sandy and silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	19	20
	Clay, sandy, pebbly, gravelly, olive-gray (till)-----	7	27
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	13	40

155-060-27ABA  
USAF 28

Altitude: 1524 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Sand, fine to medium, silty, brown-----	2	2
	Clay, sandy, silty, gravelly, brown-----	16	18
	Sand, fine to medium, silty, clayey, gray-----	6	24
	Clay, sandy, silty, gravelly, light- gray-----	3	27
	Shale and silt; angular fragments of hard dark-gray shale in a matrix of dense clayey silt-----	9	36
Pierre Formation:			
	Shale, dark-gray, highly fractured-----	86	122
	Shale and clay, angular fragments of hard dark-gray shale in a matrix of very stiff silty clay-----	9	131

155-060-27CBC  
(Log from Great Northern Railway Co.)

Altitude: 1513 feet

Glacial drift:			
	Clay, yellow-----	10	10
	Clay, sandy, blue, soft-----	6	16
	Clay, blue, soft-----	13	29
	Sand and gravel, coarse (some water)-----	2	31
Pierre Formation:			
	Shale, blue-----	100	131

155-060-29DDD  
NDSWC 8801

Altitude: 1520 feet

Glacial drift:			
	Loam, silty, pebbly, grayish-black-----	1	1
	Clay, moderately sandy and silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	15	16
	Clay, sandy, pebbly, gravelly, olive-gray (till)-----	15	31
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	29	60

155-061-01DDD  
 NDSWC 8034  
 (Log from Naplin, 1974, p. 20)

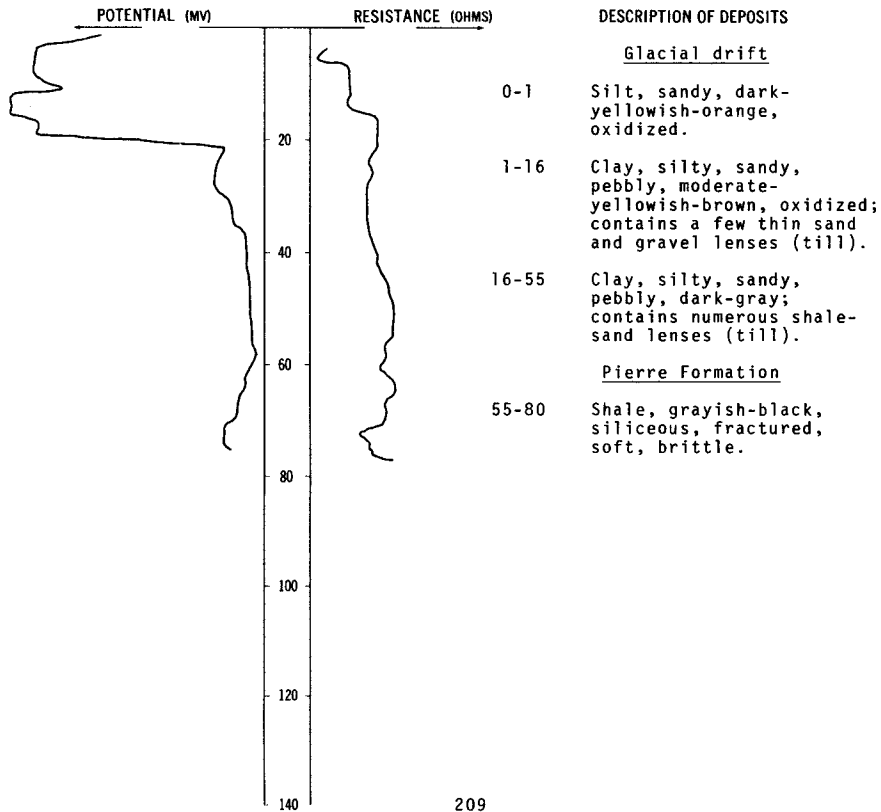
Altitude: 1501 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, clayey, pebbly, brownish-black-----	1	1
	Clay, silty, moderately sandy, pebbly, moderate-yellowish-brown, cohesive, slightly plastic, oxidized (till)-----	21	22
	Clay, silty, slightly sandy, pebbly, a few cobbles, olive-gray, moderately cohesive, moderately plastic, calcareous (till)-----	18	40
Pierre Formation:			
	Shale, siliceous, grayish-black to black, indurated, noncalcareous-----	20	60

NDSWC 9090

LOCATION: 155-061-06CCC  
 ALTITUDE: 1496  
 (FT, MSL)

DATE DRILLED: September 1974  
 DEPTH: 80  
 (FT)



155-061-10DDC  
 NDSWC 8035  
 (Log from Naplin, 1974, p. 21)

Altitude: 1552 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, clayey, sandy, brownish-black-----	1	1
	Clay, silty, moderately sandy, pebbly, a few cobbles and boulders, moderate-yellowish-brown, cohesive, slightly plastic, oxidized (till)-----	7	8
	Shale, gravelly, sandy, grayish-black to black with dark-yellowish-brown iron-staining on outer surface of angular fragments, fractured and reworked (till)-----	9	17
Pierre Formation:			
	Shale, siliceous, grayish-black to black, indurated, noncalcareous, not fractured-----	23	40

155-061-23CCD  
 NDSWC 8799

Altitude: 1518 feet

Glacial drift:			
	Loam, silty, pebbly, clayey, black-----	1	1
	Clay, moderately sandy and silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	10	11
	Gravel, fine to coarse, sandy, oxidized-----	10	21
	Clay, sandy, pebbly, gravelly, olive-gray (till)-----	11	32
	Gravel, fine to coarse, sandy-----	6	38
	Clay, sandy, pebbly, gravelly, olive-gray (till)-----	13	51
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	9	60



155-061-23DCA  
USAF 2033

Altitude: 1526 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Silt, sandy, dark-gray-----	3	3
	Clay, silty, sandy, gravelly, brown-----	9	12
	Clay, silty, sandy, gravelly, dark-grayish-brown-----	8	20
	Clay, silty, sandy, gravelly, dark-gray-----	13	33
	Sand, silty, gravelly, gray-----	5	38
	Silt, sandy, gravelly, gray-----	12	50
	Clay and shale, dark-gray; moderately hard to hard shale fragments in very stiff to hard clay-----	10	60
Pierre Formation:			
	Shale, dark-gray; highly fractured from 60 to 88 and moderately to slightly fractured from 88 to 130 feet-----	70	130

155-061-23DCC  
USAF 33

Altitude: 1526 feet

Glacial drift:			
	Clay, sandy, silty, black-----	2	2
	Clay, sandy, silty, gravelly, brown-----	12	14
	Sand, fine to medium, clayey, gravelly, brown to gray-----	6	20
	Sand, fine, silty, clayey, gravelly, brown-----	3	23
	Silt, sandy, clayey, gravelly, gray-----	19	42
Pierre Formation:			
	Shale, dark-gray, highly fractured, partly crushed-----	88	130

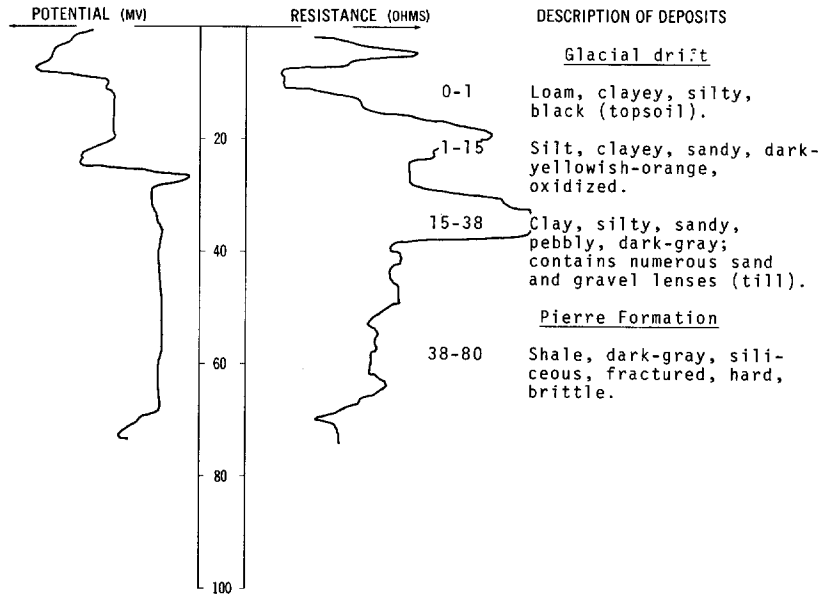
155-061-33BBB  
NDSWC 8798

Altitude: 1515 feet

Glacial drift:			
	Loam, silty, pebbly, clayey, grayish-black-----	1	1
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	4	5
	Sand, medium to very coarse, light-brown, oxidized-----	6	11
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	5	16
	Sand, medium to very coarse, gravelly, light-brown, oxidized-----	6	22
	Clay, sandy, gravelly, pebbly, olive-gray (till)-----	30	52
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	8	60

LOCATION: 155-062-04CCC  
 ALTITUDE: 1490  
 (FT, MSL)

DATE DRILLED: September 1974  
 DEPTH: 80  
 (FT)



155-062-05AAB  
 USAF 44-1

Altitude: 1487 feet

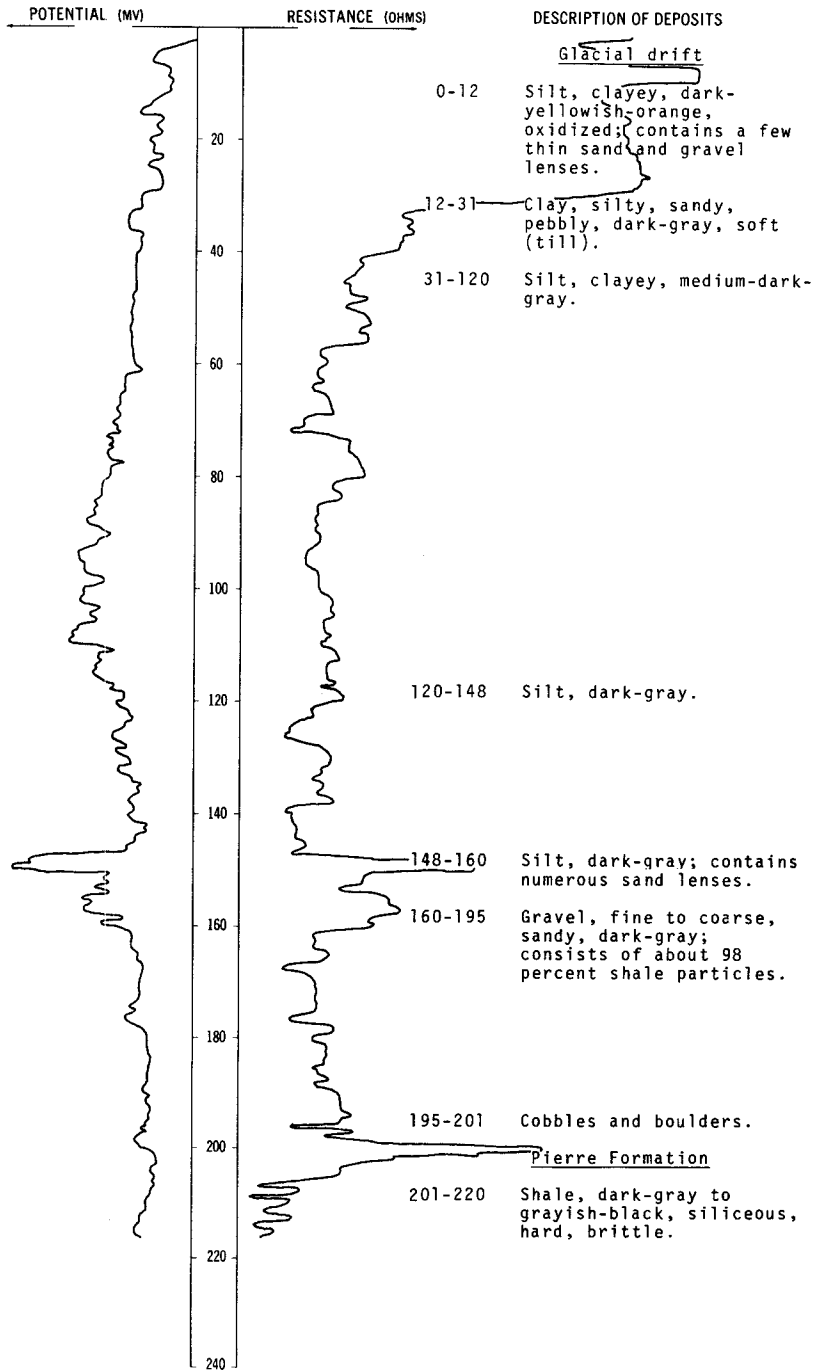
Geologic source	Material	Thickness (feet)	Depth (feet)
<b>Glacial drift:</b>			
	Silt, clayey, black-----	2	2
	Silt, clayey, sandy, brown-----	6	8
	Clay, sandy, silty, gravelly, brown-----	10	18
	Silt, clayey, sandy, gray-----	9	27
	Sand, fine, silty, gray-----	4	31
	Clay, sandy, silty, gravelly, gray-----	8	39
	Sand, medium to coarse, silty, gravelly, gray-----	29	68
	Shale and gravel, dark-gray-----	9	77
	Shale and clay, dark-gray; angular to subrounded shale fragments in a matrix of very stiff, dark-gray, silty clay-----	4	81
<b>Pierre Formation:</b>			
	Shale, partly silty, dark-gray, highly to moderately fractured-----	49	130

LOCATION: 155-062-06AAA

DATE DRILLED: September 1974

ALTITUDE: 1475  
(FT. MSL)

DEPTH: 220  
(FT)

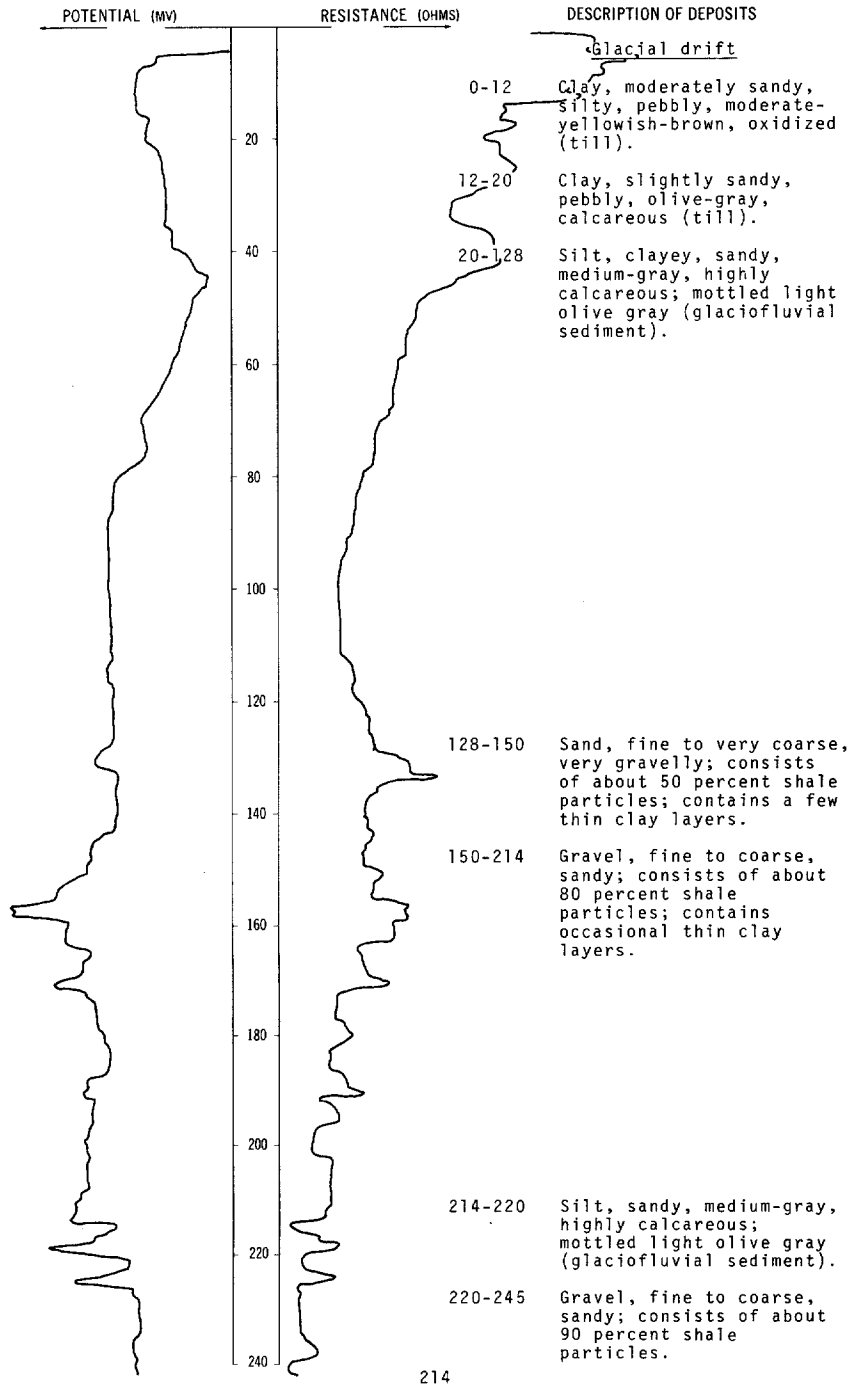


LOCATION: 155-062-06DDD

DATE DRILLED: August 1973

ALTITUDE: 1475  
(FT, MSL)

DEPTH: 280  
(FT)



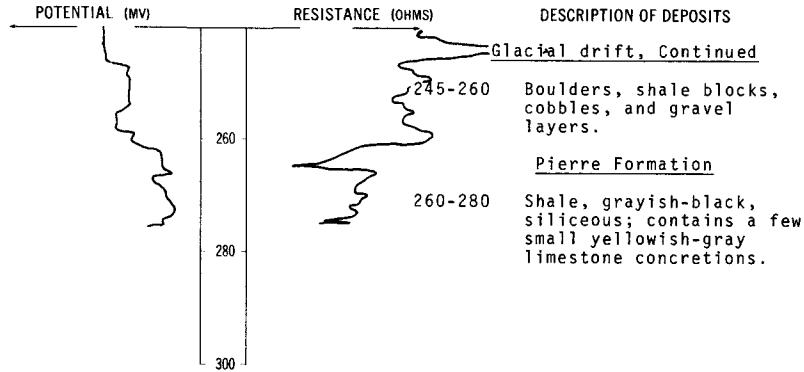
NDSWC 8792, Continued

LOCATION: 155-062-06DDD

DATE DRILLED: August 1973

ALTITUDE: 1475  
(FT, MSL)

DEPTH: 280  
(FT)



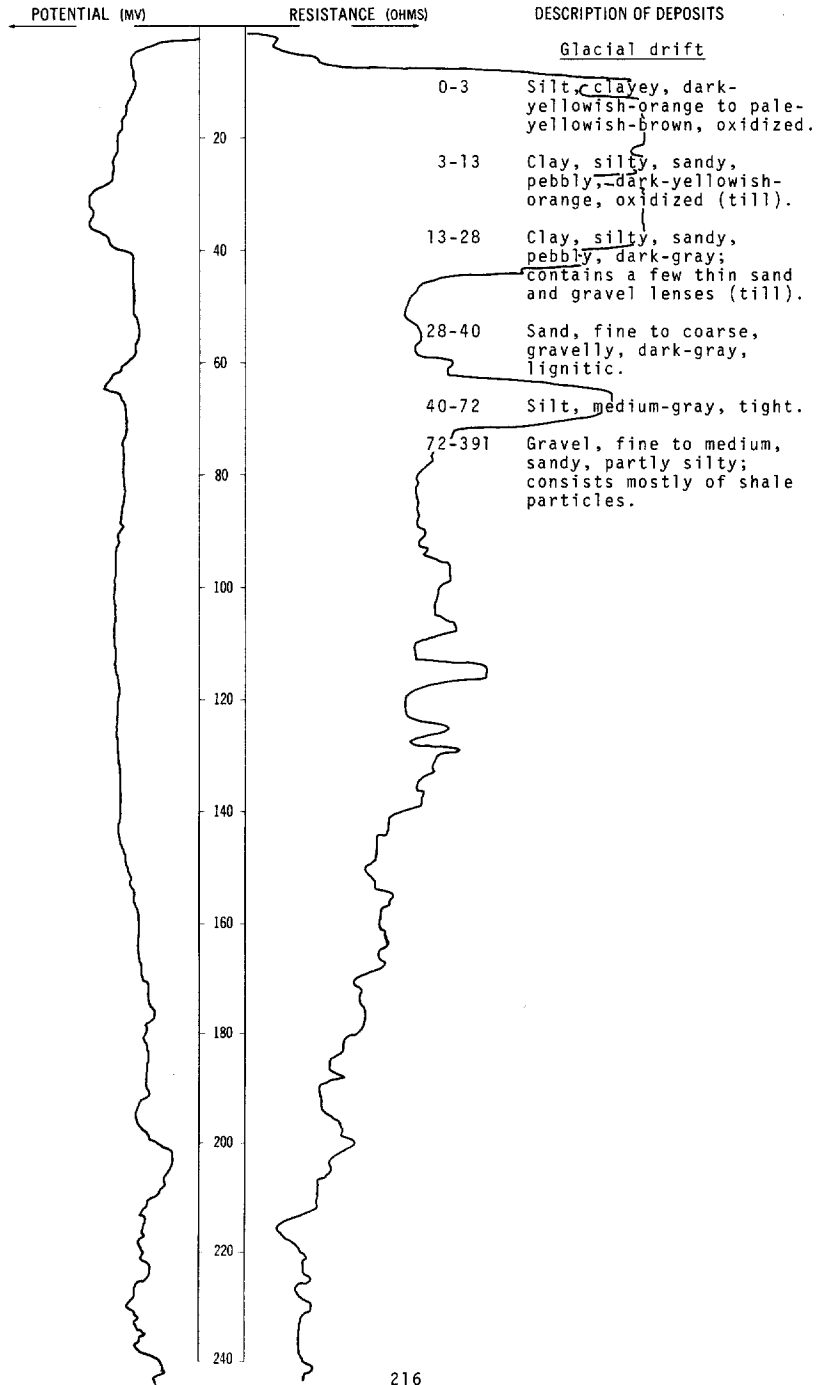
155-062-15CCC  
NDSWC 8796

Altitude: 1495 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, silty, pebbly, clayey, black-----	1	1
	Clay, moderately sandy, silty, pebbly, moderate-yellowish- brown, oxidized (till)-----	22	23
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured; partly oxidized reddish brown-----	37	60

LOCATION: 155-062-18AAA1  
 ALTITUDE: 1475  
 (FT, MSL)

DATE DRILLED: September 1974  
 DEPTH: 520  
 (FT)



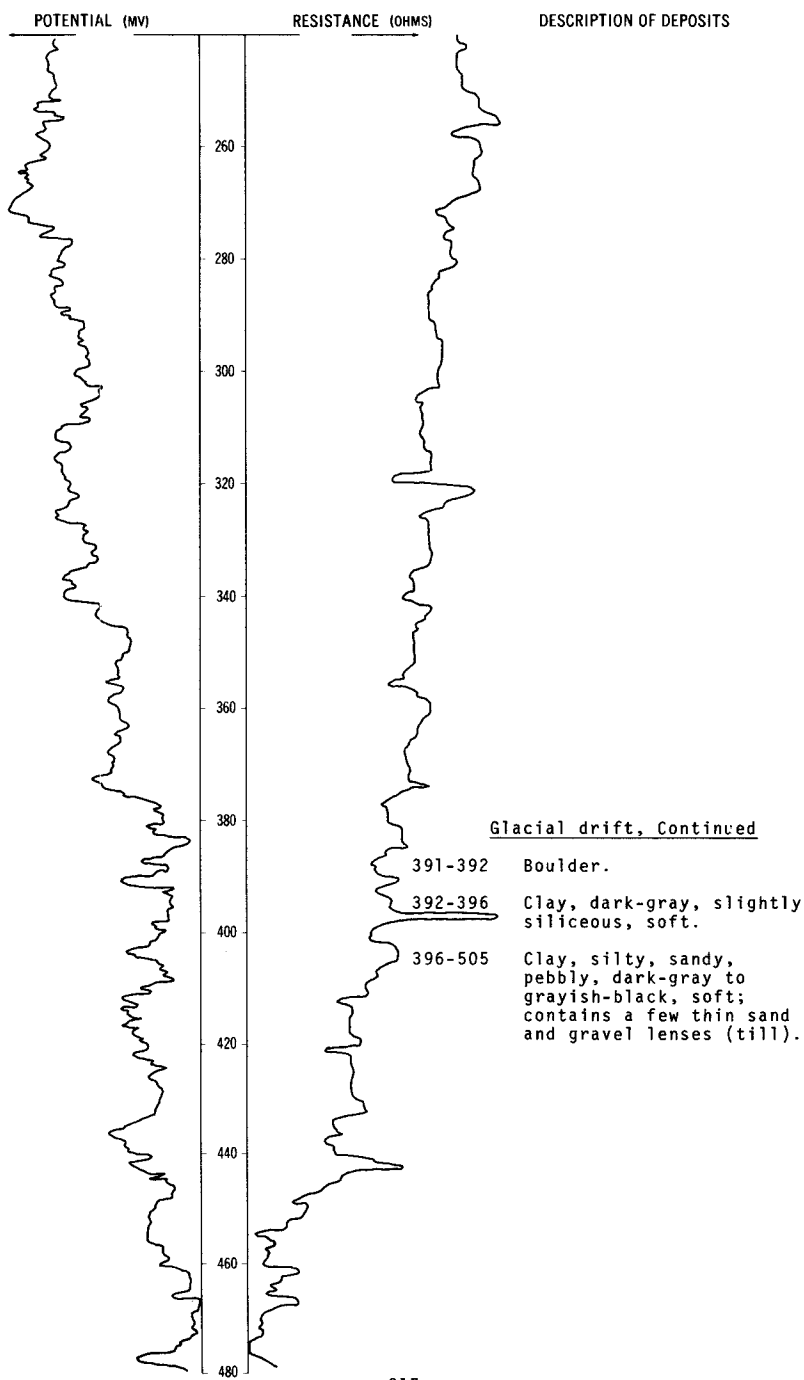
NDSWC 9087, Continued

LOCATION: 155-062-18AAA1

DATE DRILLED: September 1974

ALTITUDE: 1475  
(FT, MSL)

DEPTH: 520  
(FT)



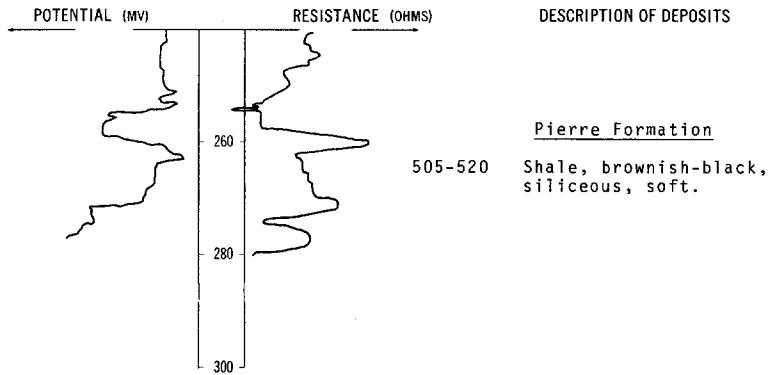
NDSWC 9087, Continued

LOCATION: 155-062-18AAA1

DATE DRILLED: September 1974

ALTITUDE: 1475  
(FT, MSL)

DEPTH: 520  
(FT)



155-062-250DB  
USAF 2036

Altitude: 1532 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, sandy, silty, tan-----	2	2
	Sand, fine, silty, tan-----	6	8
	Silt, clayey, sandy, brown-----	10	18
	Silt, clayey, grayish-brown-----	4	22
	Clay and silt, sandy, gravelly, brownish-gray-----	3	25
	Clay, silty, sandy, gravelly, gray-----	9	34
Pierre Formation:			
	Shale and clay, dark-gray; moderately hard shale fragments in a clay and crushed shale matrix-----	4	38
	Shale, dark-gray, highly fractured; crushed and crumbly in part-----	31	69
	Shale and clay, dark-gray; moderately hard to hard shale fragments in a clay and crushed shale matrix-----	9	78
	Shale, dark-gray; highly fractured from 78 to 91 and slightly fractured from 91 to 130 feet-----	52	130



155-062-27DAA  
NDSWC 8797

Altitude: 1510 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, silty, pebbly, grayish-black-----	1	1
	Clay, moderately sandy and silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	19	20
	Clay, sandy, silty, gravelly, pebbly, olive-gray (till)-----	31	51
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	9	60

155-062-29DDA  
(Log from C. A. Simpson and Son)

Altitude: 1492 feet

Glacial drift:			
	Topsoil-----	1	1
	Clay, yellow-----	11	12
	Clay, blue-----	68	80
Pierre Formation:			
	Shale-----	70	150

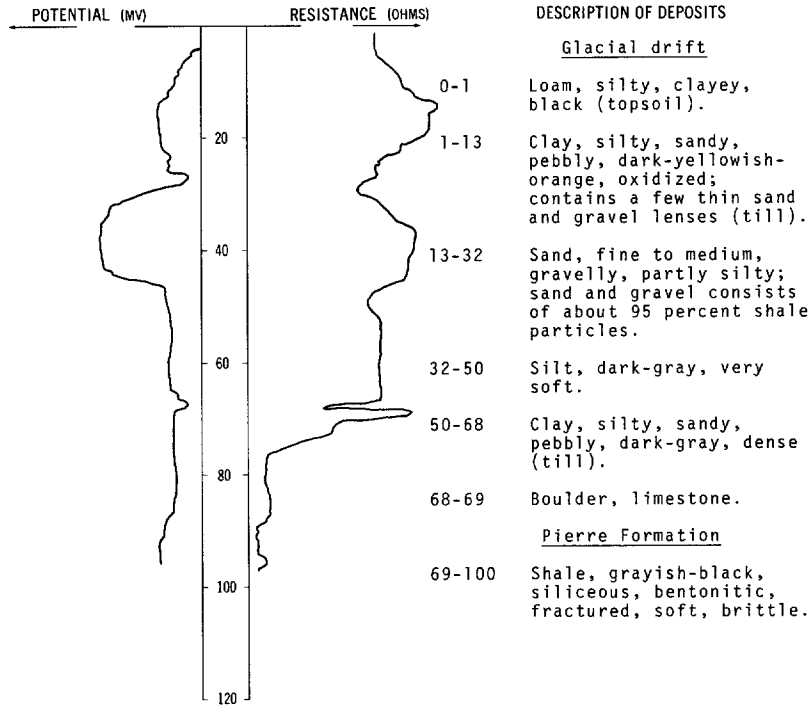
NDSWC 9086

LOCATION: 155-062-30AAA

DATE DRILLED: September 1974

ALTITUDE: 1477  
(FT, MSL)

DEPTH: 100  
(FT)



155-063-06DDD  
Test hole 146

(Log modified from Paulson and Akin, 1964, p. 138)

Altitude: 1476 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil, black-----	3	3
	Till, light-brown-----	19	22
	Till, gray-----	81	103
Pierre Formation:			
	Shale, gray-----	7	110

155-063-07DDD  
 Test hole 147  
 (Log modified from Paulson and Akin, 1964, p. 139)

Altitude: 1468 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil, black-----	1	1
	Till or clay, light-gray-----	4	5
	Till, light-brown-----	2	7
	Sand and gravel, light-brown-----	1	8
	Till, light-brown-----	7	15
	Sand, medium to coarse; gravel, fine, clayey, light-brown-----	4	19
	Till, gray-----	20	39
Pierre Formation:			
	Shale, gray-----	11	50

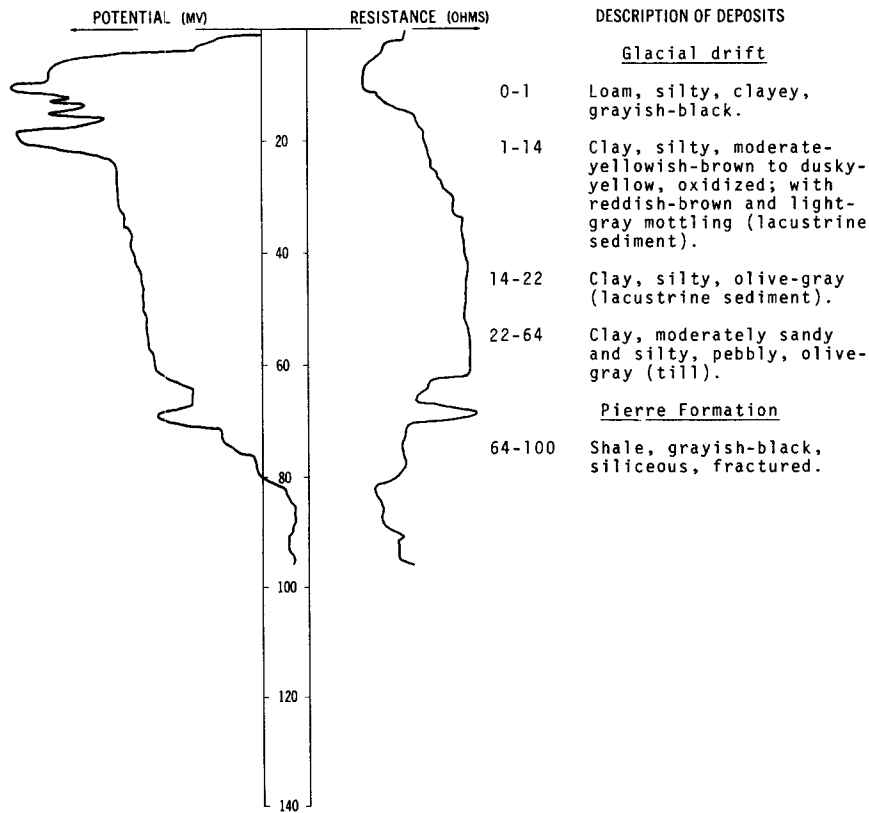
NDSWC 8793

LOCATION: 155-063-13888

DATE DRILLED: August 1973

ALTITUDE: 1465  
 (FT, MSL)

DEPTH: 100  
 (FT)



155-063-15BBB  
NDSWC 8794

Altitude: 1478 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, silty, pebbly, grayish-black-----	1	1
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized; with reddish-brown mottling (till)-----	21	22
	Clay, sandy, pebbly, olive-gray (till)-----	2	24
	Sand, medium to very coarse, well-sorted-----	2	26
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	34	60

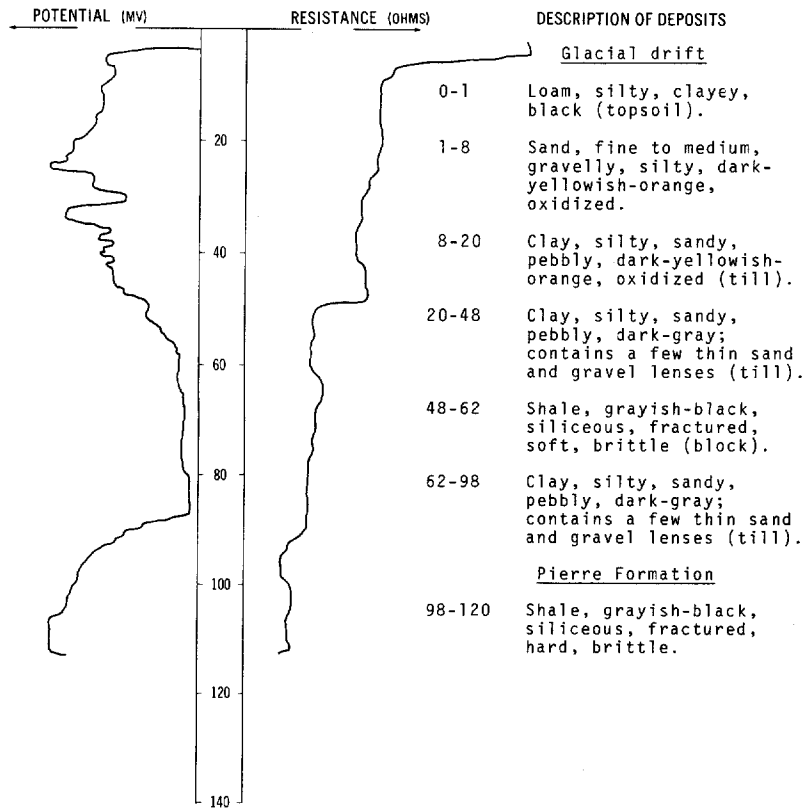
NDSWC 9083

LOCATION: 155-063-17BBB

DATE DRILLED: September 1974

ALTITUDE: 1482  
(FT, MSL)

DEPTH: 120  
(FT)



## 155-063-18DDD

Test hole 121

(Log modified from Paulson and Akin, 1964, p. 139)

Altitude: 1465 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil, black-----	2	2
	Till, light-brown-----	15	17
	Till, gray-----	63	80
Pierre Formation:			
	Shale, gray-----	30	110

## 155-063-19CDD

Test hole 123

(Log modified from Paulson and Akin, 1964, p. 139)

Altitude: 1464 feet

Glacial drift:			
	Topsoil, black-----	2	2
	Till, light-brown-----	13	15
	Till, gray-----	15	30
	Sand, coarse; gravel, fine, gray; mainly detrital shale, well sorted-----	7	37
	Till, gray-----	19	56
Pierre Formation:			
	Shale, gray-----	4	60

## 155-063-19DDC

NDSWC 9082

Altitude: 1465 feet

Glacial drift:			
	Loam, silty, sandy, black (topsoil)-----	1	1
	Clay, silty, sandy, pebbly, grayish- orange, oxidized (till)-----	3	4
	Clay, silty, sandy, pebbly, dark- yellowish-orange, oxidized (till)-----	10	14
	Clay, silty, sandy, pebbly, dark- gray; contains a few thin sand and gravel lenses (till)-----	26	40
Pierre Formation:			
	Shale, grayish-black, siliceous, fractured, soft, brittle-----	20	60

## 155-063-19DDD

Test hole 122

(Log modified from Paulson and Akin, 1964, p. 140)

Altitude: 1465 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-brown-----	13	14
	Till, gray-----	21	35
Pierre Formation:			
	Shale, gray-----	35	70

155-063-21DCC  
 Test hole 120  
 (Log modified from Paulson and Akin, 1964, p. 140)

Altitude: 1463 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil, black-----	2	2
	Till, light-brown-----	10	12
	Till, gray-----	18	30
Pierre Formation:			
	Shale, gray-----	20	50

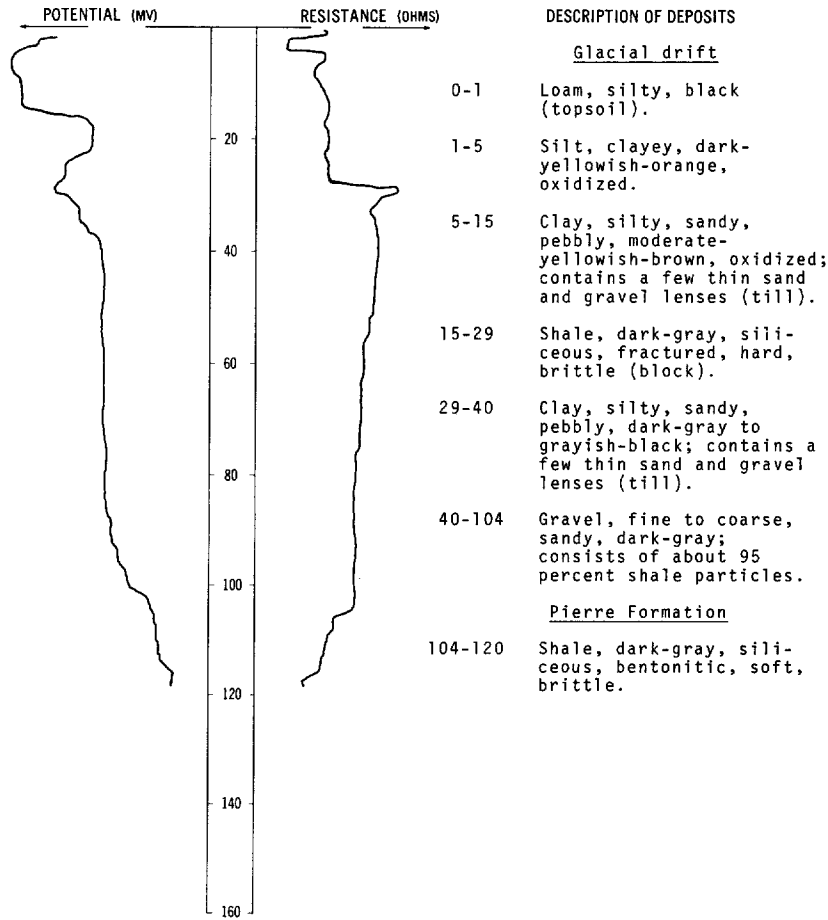
NDSWC 9084

LOCATION: 155-063-22CCC

DATE DRILLED: September 1974

ALTITUDE: 1474  
 (FT, MSL)

DEPTH: 120  
 (FT)



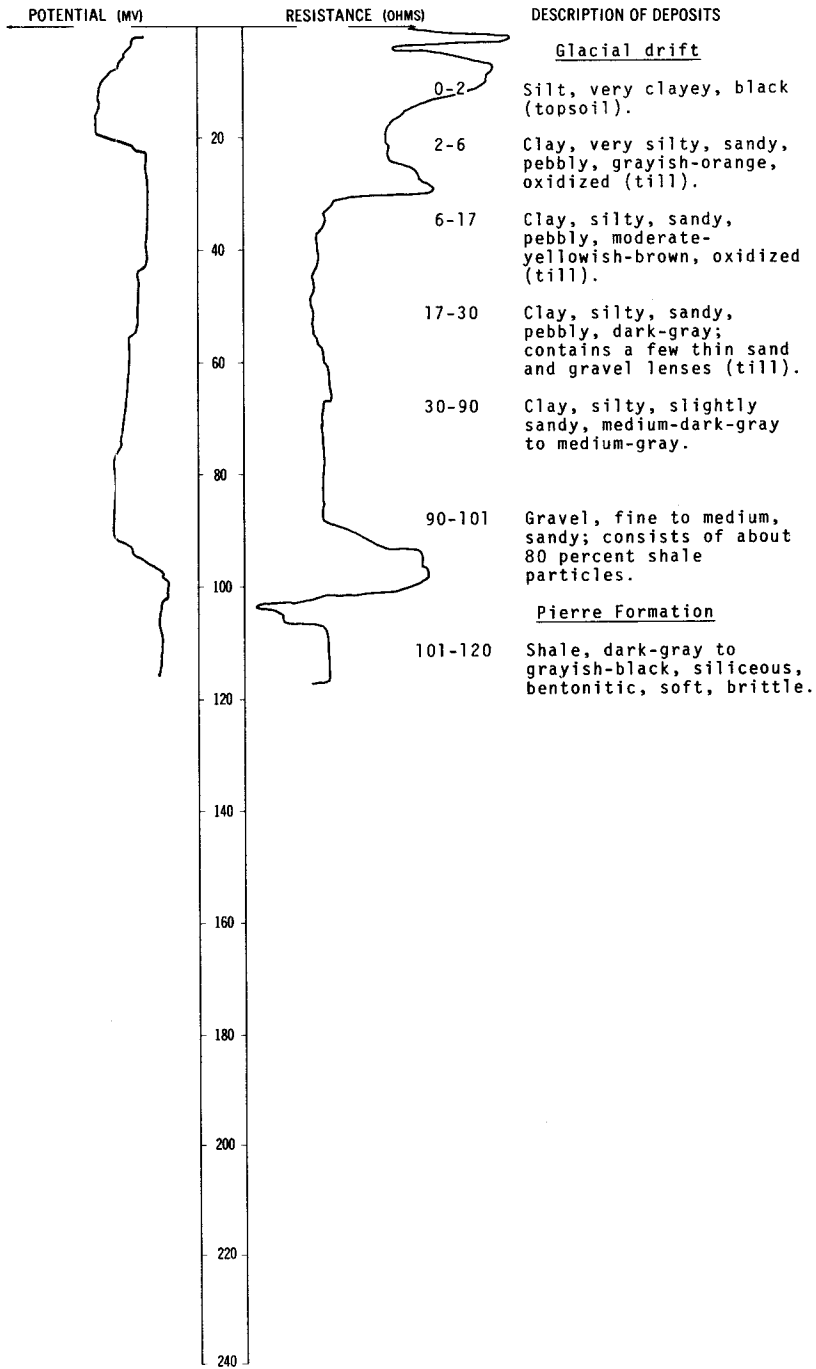
NDSWC 9085

LOCATION: 155-063-23DDA

DATE DRILLED: September 1974

ALTITUDE: 1475  
(FT. MSL)

DEPTH: 120  
(FT)

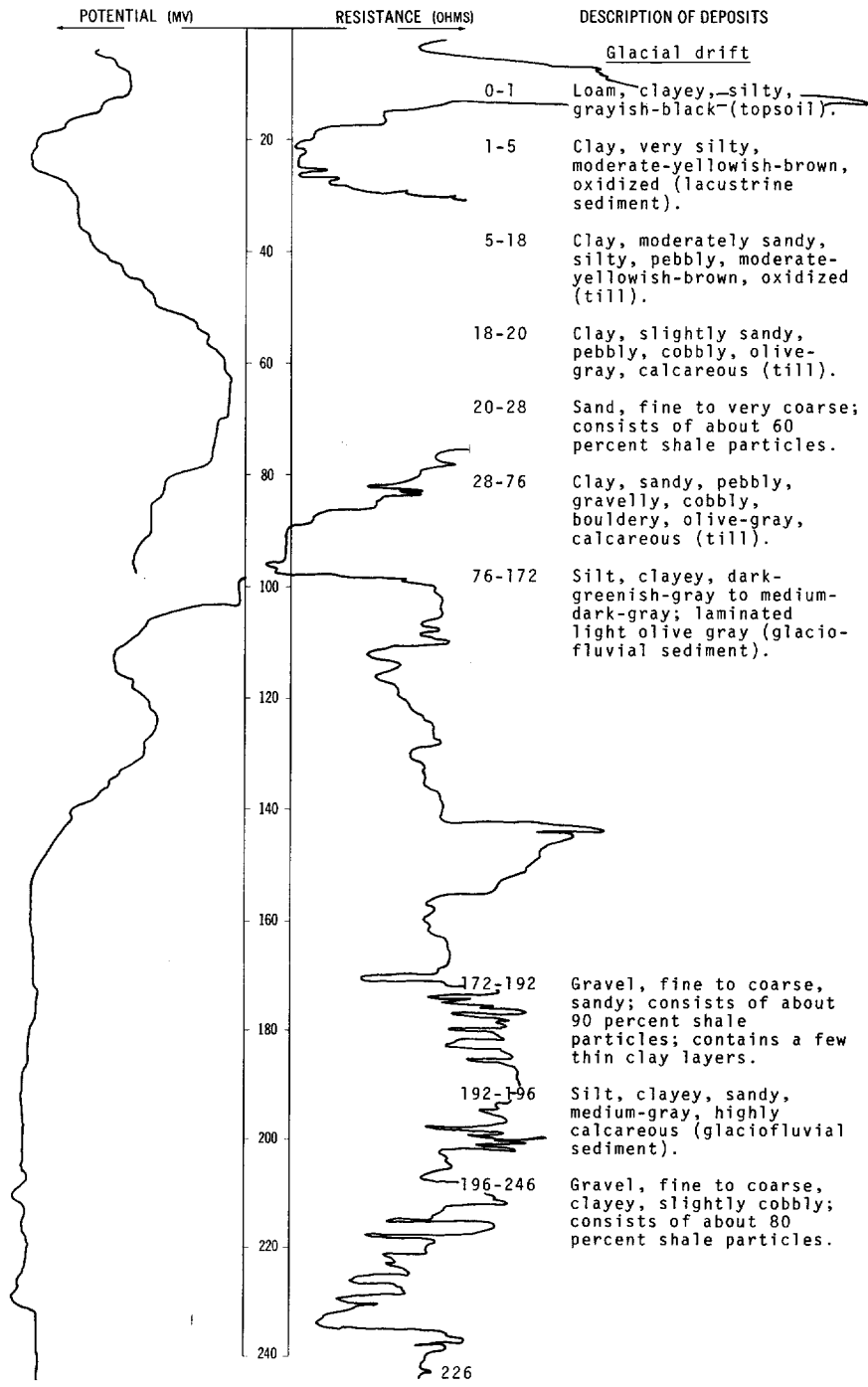


LOCATION: 155-063-25AAA

DATE DRILLED: August 1973

ALTITUDE: 1475  
(FT. MSL)

DEPTH: 385  
(FT)





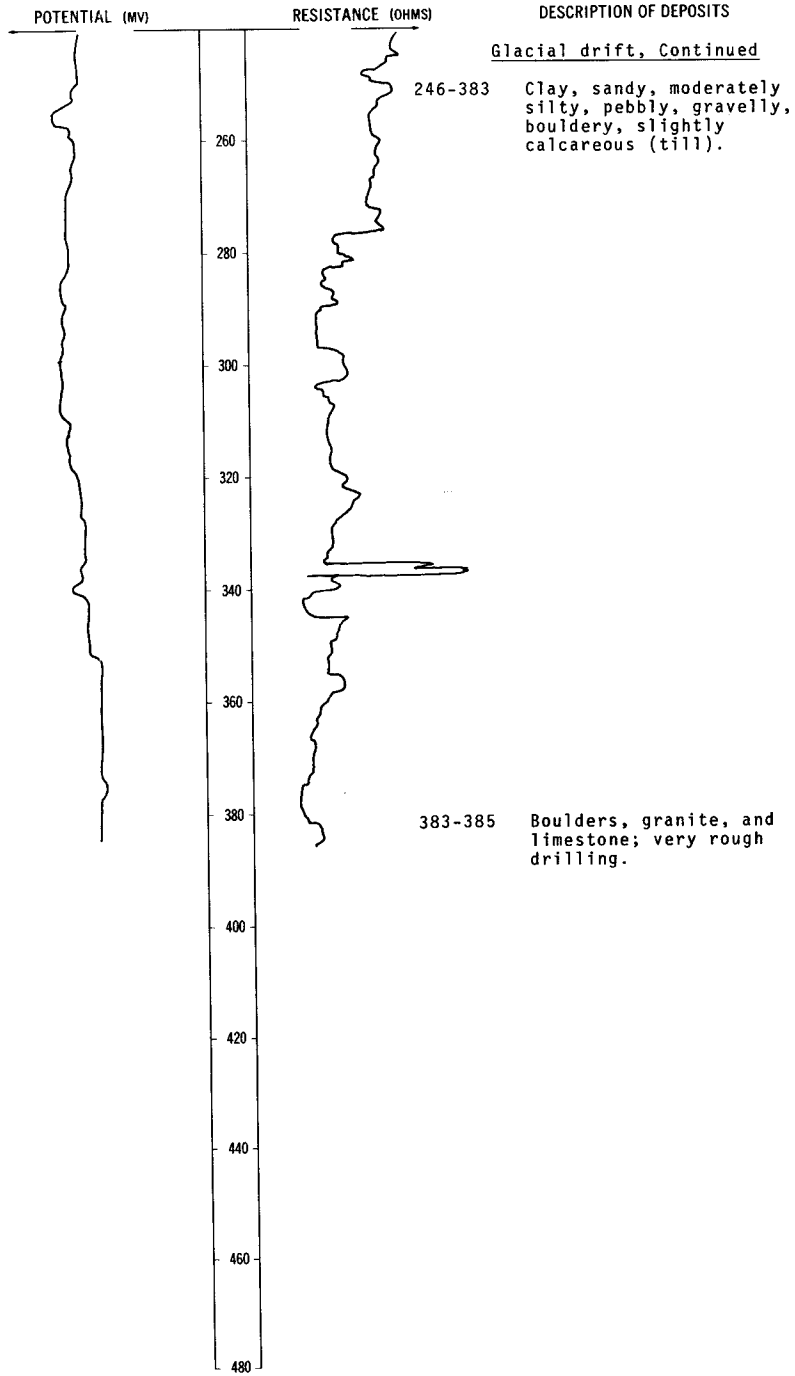
NDSWC 8795, Continued

LOCATION: 155-063-25AAA

DATE DRILLED: August 1973

ALTITUDE: 1475  
(FT, MSL)

DEPTH: 385  
(FT)



155-063-27BBB  
 Test hole 119  
 (Log modified from Paulson and Akin, 1964, p. 140)

Altitude: 1473 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	2	2
	Till or clay, light-brown-----	2	4
	Sand and gravel, light-brown-----	3	7
	Till, light-brown-----	9	16
	Sand and gravel, very clayey, light-brown-----	9	25
	Till, gray-----	14	39
	Sand, fine to medium; gravel, fine, clayey, poorly sorted, gray-----	6	45
	Gravel, fine to coarse, well- sorted-----	60	105
Pierre Formation:			
	Shale, gray-----	30	135

155-063-29ABA  
 Test hole 124  
 (Log modified from Paulson and Akin, 1964, p. 141)

Altitude: 1462 feet

Glacial drift:			
	Topsoil, black-----	2	2
	Till, light-brown-----	16	18
	Till, gray-----	13	31
	Sand and gravel, gray-----	1	32
	Till, gray; gravelly towards bottom-----	37	69
Pierre Formation:			
	Shale, gray-----	11	80

155-063-29CCC  
 Test hole 125  
 (Log modified from Paulson and Akin, 1964, p. 141)

Altitude: 1462 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-brown-----	17	18
	Till, gray-----	23	41
	Sand, medium to coarse; gravel, fine to coarse; mainly detrital clayey shale; coarser towards bottom-----	16	57
	Till, gray-----	27	84
Pierre Formation:			
	Shale, gray-----	6	90

155-064-01BBB  
NDSWC 9055

Altitude: 1467 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, silty, clayey, black (topsoil)-----	1	1
	Silt, clayey, dark-yellowish-orange, oxidized; mottled medium gray-----	3	4
	Clay, silty, sandy, pebbly, moderate-yellowish-brown, oxidized; contains a few thin sand and gravel lenses (till)-----	15	19
	Clay, silty, sandy, pebbly, dark-gray, dense; contains a few thin sand and gravel lenses (till)-----	11	30
Pierre Formation:			
	Shale, dark-gray, siliceous, bentonitic, hard, brittle-----	30	60

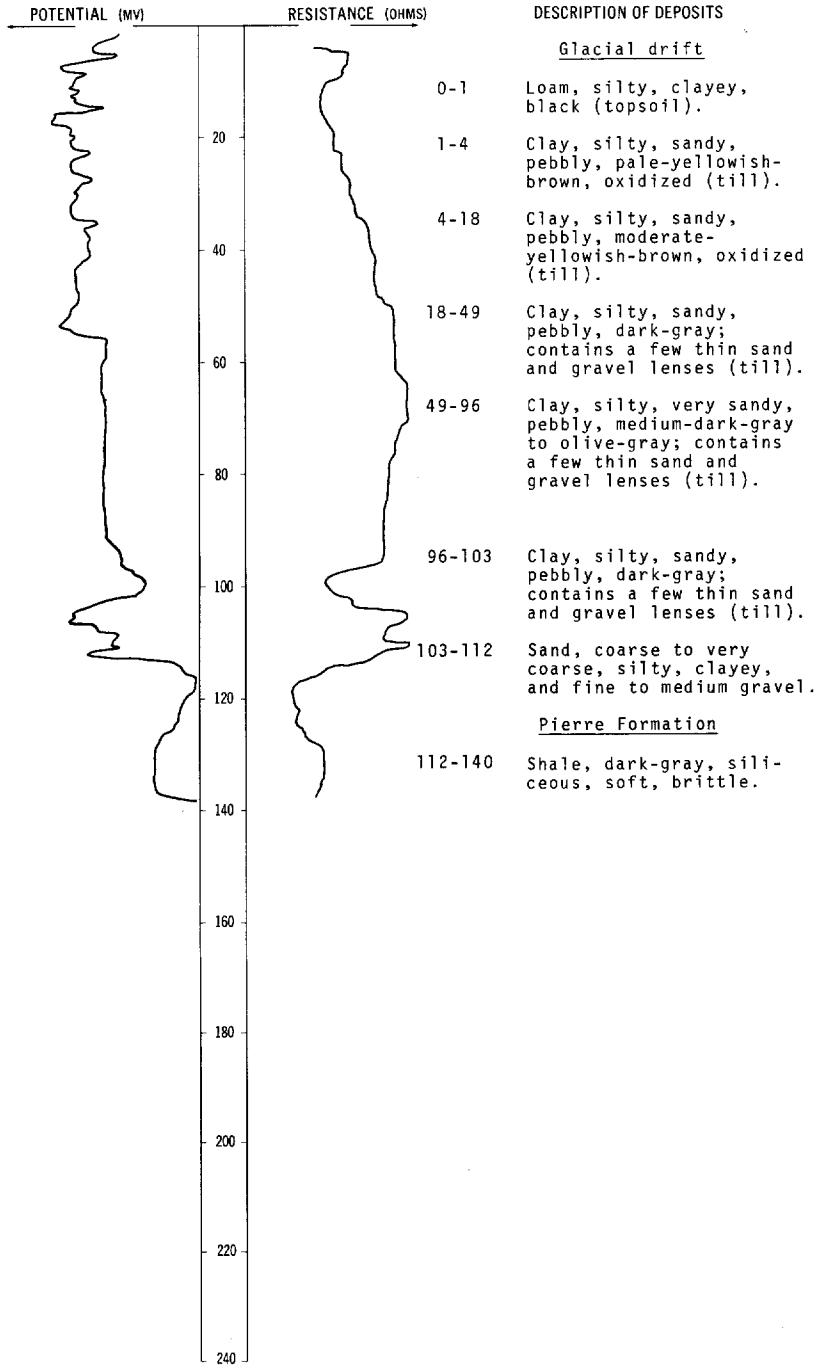
155-064-03AAA  
NDSWC 8820

Altitude: 1462 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, clayey, silty, grayish-black (topsoil)-----	1	1
	Silt, clayey, dusky-yellow, oxidized (glaciolacustrine sediment)-----	4	5
	Clay, moderately silty, slightly sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	10	15
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	8	23
	Gravel, fine to coarse-----	1	24
	Clay, moderately silty, pebbly, olive-gray, calcareous (till)-----	5	29
	Gravel, fine to medium-----	2	31
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	32	63
	Gravel, fine to medium, slightly sandy; consists of about 90 percent shale particles-----	26	89
	Silt, very sandy, medium-dark-gray, calcareous-----	9	98
	Gravel, medium to coarse; consists mostly of angular reworked shale of Pierre Formation-----	2	100
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle-----	20	120

LOCATION: 155-064-03CCC  
 ALTITUDE: 1459  
 (FT, MSL)

DATE DRILLED: August 1974  
 DEPTH: 140  
 (FT)



155-064-04AAA2  
(Log modified from Holbeck Well Service)

Altitude: 1463 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Soil, black-----	2.5	2.5
	Clay, yellow-----	11.5	14
	Clay, sandy, blue-----	15	29
Pierre Formation:			
	Shale-----	98	127

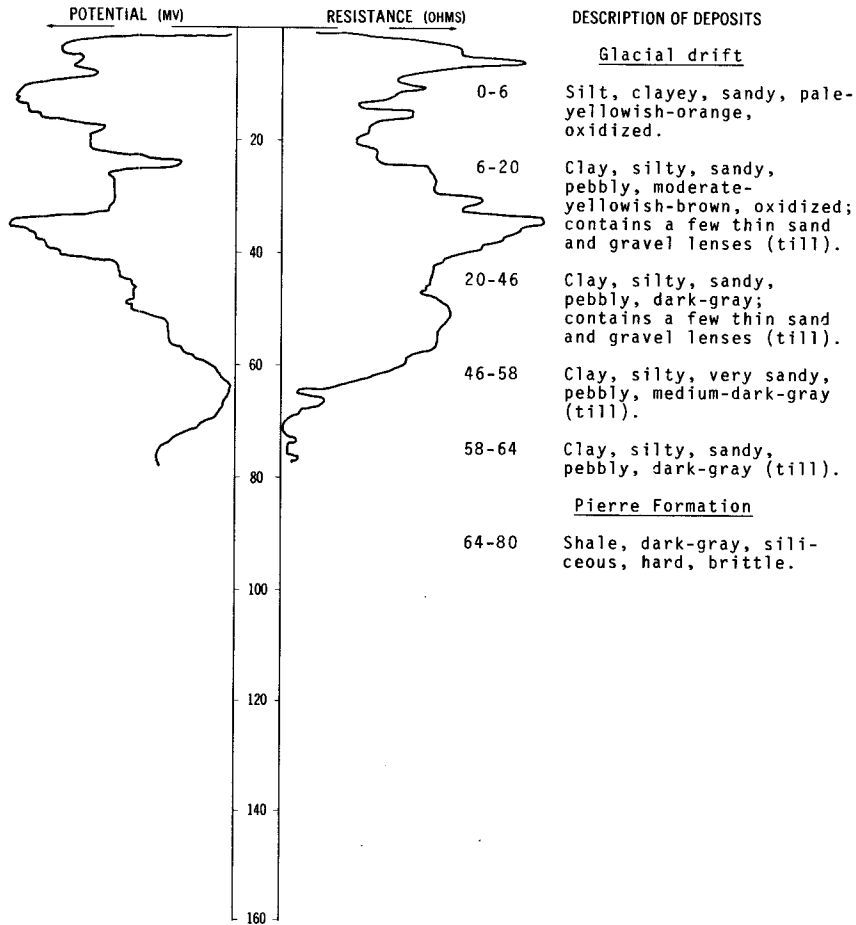
NDSWC 9043

LOCATION: 155-064-058BB

DATE DRILLED: August 1974

ALTITUDE: 1462  
(FT, MSL)

DEPTH: 80  
(FT)



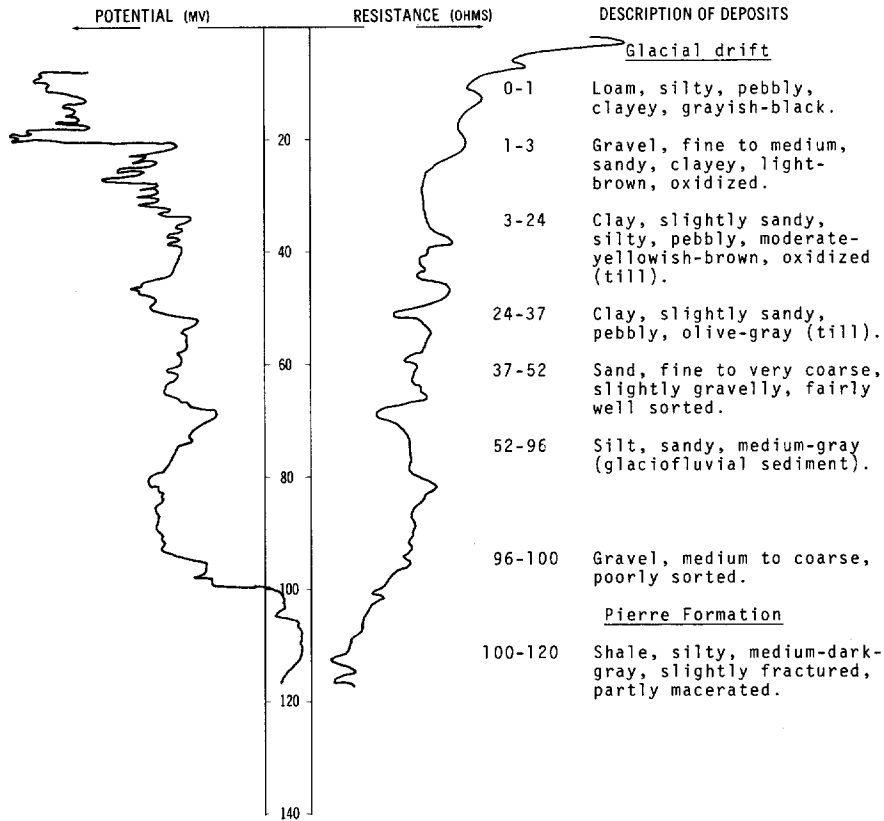
NDSWC 8841

LOCATION: 155-064-07DDD

DATE DRILLED: August 1973

ALTITUDE: 1474  
(FT, MSL)

DEPTH: 120  
(FT)



155-064-09DAD  
Test hole 141

(Log modified from Paulson and Akin, 1964, p. 141)

Altitude: 1458 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil, black-----	2	2
	Till or clay, gray-----	1	3
	Till or clay, light-brown-----	2	5
	Till, light-brown-----	15	20
	Till, brown-----	9	29
	Till, gray-----	96	125
Pierre Formation:			
	Shale, gray-----	5	130

155-064-10ADA

Test hole 142

(Log modified from Paulson and Akin, 1964, p. 142)

Altitude: 1463 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-brown-----	25	26
	Till, gray-----	44	70
	Till, sandy, gravelly, gray-----	30	100
Pierre Formation:			
	Shale, gray-----	4	104

155-064-10DDD

Test hole 148

(Log modified from Paulson and Akin, 1964, p. 142)

Altitude: 1463 feet

Glacial drift:			
	Topsoil, black-----	2	2
	Till or clay, light-gray-----	2	4
	Till, light-brown-----	14	18
	Till, dark-brown-----	4	22
	Till, gray-----	15	37
	Sand and gravel, very clayey, gray-----	4	41
	Till, very sandy, gravelly, gray-----	29	70
	Till, gray-----	36	106
Pierre Formation:			
	Shale, gray-----	2	108

155-064-11AAD1

Test hole 144

(Log modified from Paulson and Akin, 1964, p. 142)

Altitude: 1462 feet

Glacial drift:			
	Topsoil, black-----	2	2
	Till, light-brown-----	12	14
	Sand and gravel, light-brown-----	3	17
	Till, gray-----	38	55
Pierre Formation:			
	Shale, gray-----	3	58

155-064-11BDA  
 Test hole 143  
 (Log modified from Paulson and Akin, 1964, p. 143)

Altitude: 1465 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till or clay, gray-----	2	3
	Till, light-brown-----	13	16
	Sand and gravel, light-brown-----	2	18
	Boulder-----	2	20
	Till, gray-----	10	30
Pierre Formation:			
	Shale, gray-----	10	40

155-064-12ADA  
 Test hole 145  
 (Log modified from Paulson and Akin, 1964, p. 143)

Altitude: 1469 feet

Glacial drift:			
	Topsoil, black-----	2	2
	Till, light-brown-----	16	18
	Till, gray-----	5	23
	Sand, coarse; gravel, fine, very clayey, gray; mainly detrital shale-----	5	28
	Sand, coarse; gravel, fine, gray, well-sorted; mainly detrital shale-----	8	36
	Limestone, boulder-----	1	37
	Till, gray-----	62	99
Pierre Formation:			
	Shale, gray-----	8	107

155-064-16BBA  
 Test hole 150  
 (Log modified from Paulson and Akin, 1964, p. 143)

Altitude: 1472 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Sand, medium, clayey, light-gray-----	2	3
	Till, light-brown-----	16	19
	Till, gray-----	8	27
	Sand, fine to coarse, gray, well-sorted; mainly detrital shale-----	20	47
Pierre Formation:			
	Shale, gray-----	23	70



155-064-21AAA

Test hole 140

(Log modified from Paulson and Akin, 1964, p. 144)

Altitude: 1474 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till or clay, light-gray-----	1	2
	Till, light-brown-----	11	13
	Till, gray-----	19	32
Pierre Formation:			
	Shale, gray-----	8	40

155-064-22CCC

Test hole 137

(Log modified from Paulson and Akin, 1964, p. 144)

Altitude: 1481 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-brown-----	14	15
	Sand and gravel, gray-brown; about one-third detrital shale, very clayey-----	4	19
	Till, gray-----	5	24
Pierre Formation:			
	Shale, gray-----	6	30

155-064-22CDD

Test hole 139

(Log modified from Paulson and Akin, 1964, p. 144)

Altitude: 1480 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till or clay, gray-----	2	3
	Till, light-brown-----	11	14
	Sand and gravel, very clayey, gray-brown-----	5	19
	Till, gray-----	5	24
Pierre Formation:			
	Shale, gray-----	16	40

155-064-22DDC

Test hole 138

(Log modified from Paulson and Akin, 1964, p. 145)

Altitude: 1471 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	2	2
	Sand, fine to medium, clayey, light-brown-----	2	4
	Sand, medium to coarse, slightly clayey-----	1	5
	Till, light-brown-----	13	18
	Sand and gravel, light-brown-----	3	21
	Till, light-brown-----	3	24
	Till, gray-----	4	28
	Sand and gravel, gray-----	4	32
	Till, gray-----	38	70
Pierre Formation:			
	Shale, gray-----	50	120

155-064-23DAA

Test hole 149

(Log modified from Paulson and Akin, 1964, p. 145)

Altitude: 1461 feet

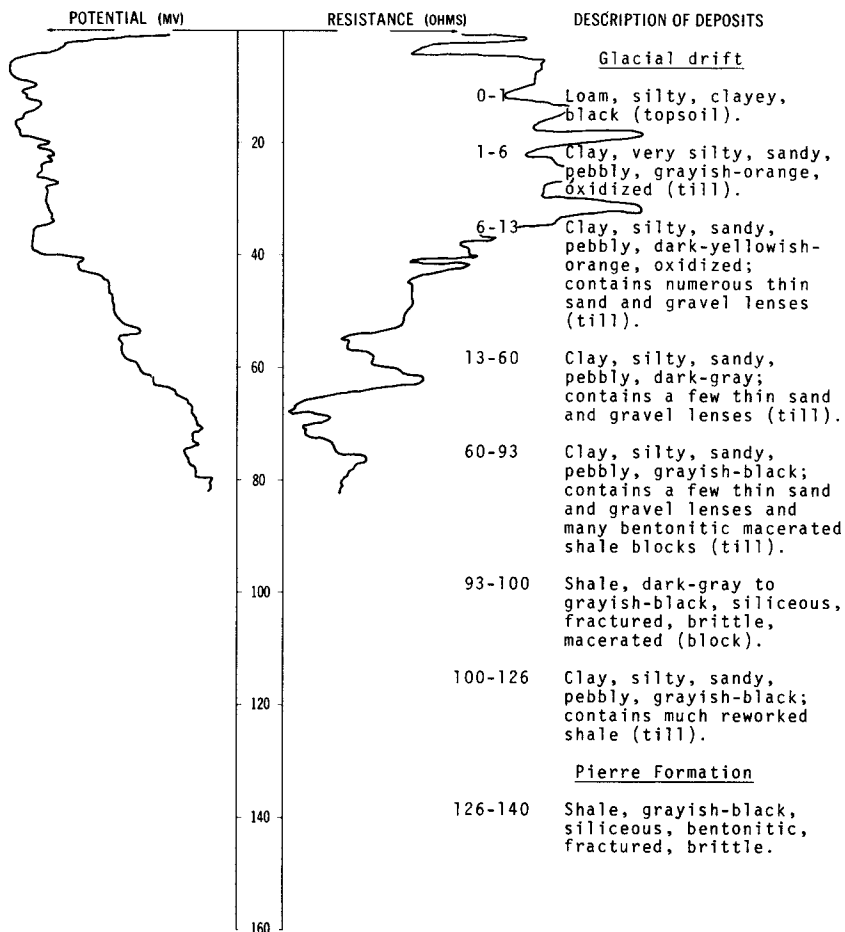
Glacial drift:			
	Topsoil, black-----	1	1
	Till or clay, gray-----	3	4
	Till, light-brown-----	11	15
	Till, gray-----	3	18
	Sand and gravel, gray-----	4	22
	Till, gray-----	8	30
	Sand, gray, medium, very clayey-----	6	36
	Sand, coarse; gravel, fine, very clayey, gray-----	3	39
Pierre Formation:			
	Shale, gray-----	11	50

LOCATION: 155-064-27AAB

DATE DRILLED: September 1974

ALTITUDE: 1468  
(FT, MSL)

DEPTH: 140  
(FT)



155-064-27CCC  
Test hole 136

(Log modified from Paulson and Akin, 1964, p. 145)

Altitude: 1498 feet

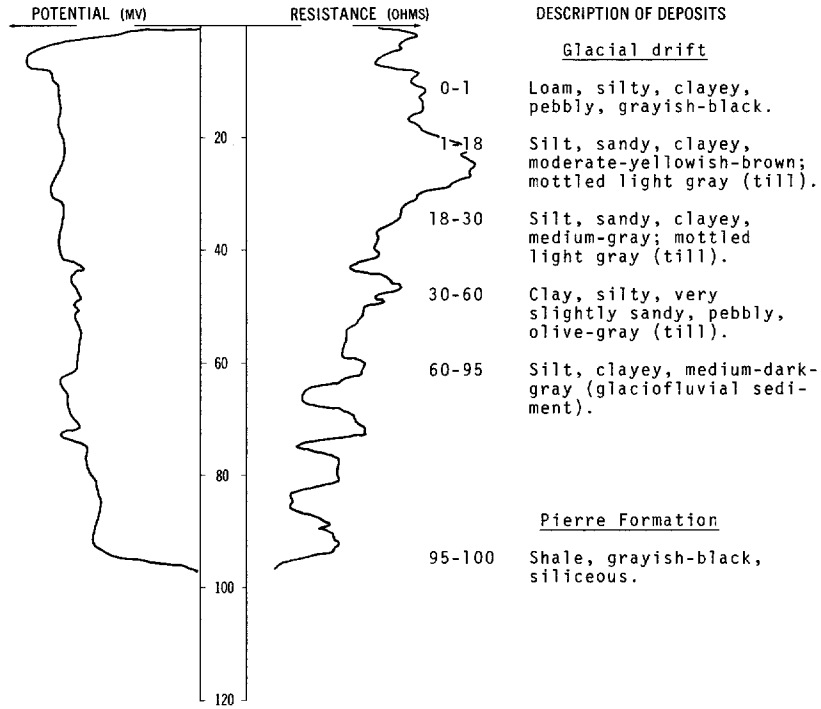
Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil, black-----	2	2
	Till, light-brown-----	8	10
	Till, brown-----	8	18
Pierre Formation:			
	Shale, gray-----	12	30

LOCATION: 155-064-29BBB

DATE DRILLED: August 1973

ALTITUDE: 1475  
(FT, MSL)

DEPTH: 100  
(FT)



155-064-34ACC  
Test hole 205

(Log modified from Paulson and Akin, 1964, p. 146)

Altitude: 1464 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil, black-----	1	1
	Till or clay, dark-brown-----	2	3
	Till, light-brown-----	14	17
	Till, gray-----	20	37
	Sand, coarse and medium; gravel, fine, very clayey, gray-----	9	46
	Till, very sandy, gravelly, gray-----	14	60
	Gravel, coarse; sand, coarse, gray; mainly detrital shale, well sorted-----	20	80
	Till, gray, gravelly-----	59	139
Pierre Formation:			
	Shale, gray-----	6	145

155-064-34BCD  
 Test hole 201  
 (Log modified from Paulson and Akin, 1964, p. 146)

Altitude: 1474 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	2	2
	Till, light-brown-----	19	21
	Till, gray-----	22	43
	Sand and gravel, gray-----	2	45
	Till, gray-----	13	58
	Sand, coarse; gravel, fine, gray; mainly detrital shale, very clayey-----	16	74
Pierre Formation:			
	Shale, gray-----	6	80

155-064-34BDD1  
 Test hole 200  
 (Log modified from Paulson and Akin, 1964, p. 147)

Altitude: 1472 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till or clay, gray-----	1	2
	Till, light-brown-----	16	18
	Till, gray-----	19	37
	Sand and gravel, gray-----	1	38
	Till, gray-----	26	64
	Sand, coarse; gravel, fine, shaley, clayey, gray-----	18	82
	Till, gray-----	13	95
	Sand, coarse; gravel, fine, shaley, clayey, gray-----	11	106
	Till, gray-----	32	138
Pierre Formation:			
	Shale, gray-----	7	145

155-064-34BDD2  
 Test hole 204  
 (Log modified from Paulson and Akin, 1964, p. 147)

Altitude: 1472 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-gray-----	1	2
	Till, light-brown-----	18	20
	Till, gray-----	11	31
	Gravel and sand, gray; mainly detrital shale-----	2	33
	Till, gray-----	113	146
Pierre Formation:			
	Shale, gray-----	4	150

155-064-34BDD3  
 Test hole 199  
 (Log modified from Paulson and Akin, 1964, p. 148)

Altitude: 1463 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till, brown-gray-----	2	3
	Till, light-brown-----	14	17
	Till, gray-----	13	30
	Sand and gravel-----	2	32
	Till, gray-----	18	50
	Sand, very coarse; shale and gravel, fine, gray; mainly detrital shale-----	15	65
	Gravel, coarse, gray; mainly detrital shale-----	15	80
	Till, gray-----	48	128
Pierre Formation:			
	Shale, gray-----	7	135

155-064-34BDD4  
 Test hole 198  
 (Log modified from Paulson and Akin, 1964, p. 148)

Altitude: 1462 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till or clay, light-gray-----	5	6
	Till, gray-brown-----	11	17
	Till, gray-----	10	27
	Sand, gray; mainly detrital shale, clayey-----	3	30
	Till, sandy, gray-----	13	43
	Sand and gravel, gray; mainly detrital shale-----	27	70
	Sand and gravel, clayey, gray; mainly detrital shale-----	15	85
	Gravel and sand, gray; mainly detrital shale-----	5	90
	Till, gray-----	40	130
Pierre Formation:			
	Shale, gray-----	5	135

155-064-34CCC  
 Test hole 159  
 (Log modified from Paulson and Akin, 1964, p. 149)

Altitude: 1490 feet

Glacial drift:			
	Topsoil, black-----	2	2
	Sand, coarse and medium, brown-----	3	5
	Till, brown-----	19	24
	Sand, very coarse, shaley, gray-----	5	29
	Till, gray-----	2	31
Pierre Formation:			
	Shale, gray-----	29	60

155-064-34DCD  
 Test hole 202  
 (Log modified from Paulson and Akin, 1964, p. 149)

Altitude: 1470 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Till, light-gray-----	4	5
	Till, light-brown-----	13	18
	Till, gray-----	14	32
	Sand, coarse; gravel, fine, gray; about one-half detrital shale, well sorted-----	5	37
	Till, gray-----	21	58
Pierre Formation:			
	Shale, gray-----	7	65

155-064-34DDC  
 Test hole 151  
 (Log modified from Paulson and Akin, 1964, p. 149)

Altitude: 1458 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Till, brown-----	15	16
	Sand, medium to coarse, shaley, brown-----	3	19
	Till, gray-----	46	65
Pierre Formation:			
	Shale, gray-----	10	75

155-064-35ADC  
 Test hole 155  
 (Log modified from Paulson and Akin, 1964, p. 150)

Altitude: 1463 feet

Glacial drift:			
	Topsoil, black-----	1	1
	Clay, light-brown-----	8	9
	Till, light-brown-----	7	16
	Sand and gravel, very clayey, light-brown-----	6	22
	Till, gray-----	29	51
	Sand and gravel, very clayey, gray-----	3	54
	Till, gray-----	6	60
	Sand and gravel, gray; mainly detrital shale, clayey-----	5	65
	Till, gray-----	50	115
Pierre Formation:			
	Shale, gray-----	5	120

155-064-35BAB  
 Test hole 154  
 (Log modified from Paulson and Akin, 1964, p. 150)

Altitude: 1462 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	2	2
	Till or clay, gray-----	2	4
	Till, light-brown-----	11	15
	Till, gray-----	36	51
	Sand, coarse; gravel, fine, gray; mainly detrital shale, very well sorted-----	9	60
	Sand, coarse; gravel, coarse; mainly detrital shale, very well sorted-----	6	66
	Till, gray-----	50	116
	Till, sandy, gravelly, gray-----	5	121
Pierre Formation:			
	Shale, gray-----	4	125

155-064-35BCD  
 Test hole 153  
 (Log modified from Paulson and Akin, 1964, p. 150)

Altitude: 1458 feet

Glacial drift:			
	Topsoil, black; clay, gray-----	2	2
	Till, light-brown-----	15	17
	Till, gray-----	39	56
	Sand, very coarse; gravel, fine, well-sorted, gray-----	9	65
	Till, gray-----	11	76
Pierre Formation:			
	Shale, gray-----	10	86

155-064-35CCD  
 NDSWC 9076

Altitude: 1463 feet

Glacial drift:			
	Loam, clayey, silty, black (topsoil)-----	1	1
	Silt, clayey, grayish-orange, oxidized-----	7	8
	Silt, clayey, dark-yellowish-orange, oxidized-----	4	12
	Clay, silty, sandy, pebbly, dark- gray; contains numerous gravel and sand lenses (till)-----	33	45
Pierre Formation:			
	Shale, dark-gray, siliceous, hard, brittle-----	35	80



155-064-35CDC  
 Test hole 152  
 (Log modified from Paulson and Akin, 1964, p. 151)

Altitude: 1463 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	2	2
	Clay, gray-brown-----	4	6
	Till, light-brown-----	10	16
	Till, gray-----	2	18
	Sand and gravel, gray-----	2	20
	Till, gray-----	31	51
Pierre Formation:			
	Shale, gray-----	9	60

155-065-08DDD  
 NDSWC 8831

Altitude: 1456 feet

Glacial drift:			
	Loam, clayey, silty, black (topsoil)-----	1	1
	Clay, moderately sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	14	15
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	7	22
	Clay, moderately sandy, gravelly, pebbly, olive-gray, calcareous (till)-----	18	40
	Sand, fine to very coarse; consists of about 30 percent shale particles-----	13	53
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle-----	7	60

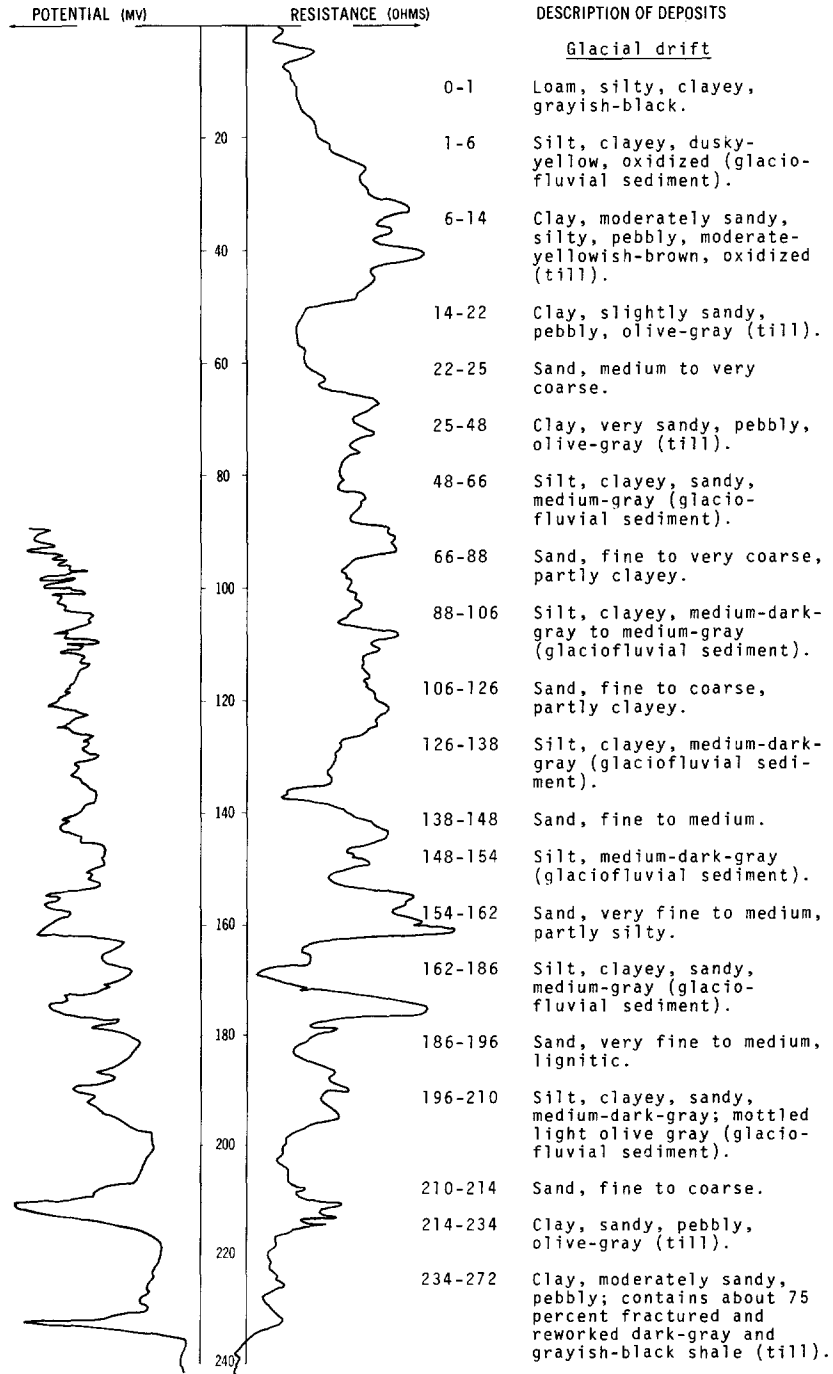
155-065-09ADD4  
 (Log modified from Peterson Well Co.)

Altitude: 1465 feet

Glacial drift:			
	Dirt, black-----	1	1
	Clay, sandy-----	7	8
	Clay, heavy-----	9	17
	Till-----	32	49
Pierre Formation:			
	Shale-----	1	50
	Shale and clay, soft-----	22	72

LOCATION: 155-065-20CCC  
 ALTITUDE: 1450  
 (FT, MSL)

DATE DRILLED: August 1973  
 DEPTH: 300  
 (FT)



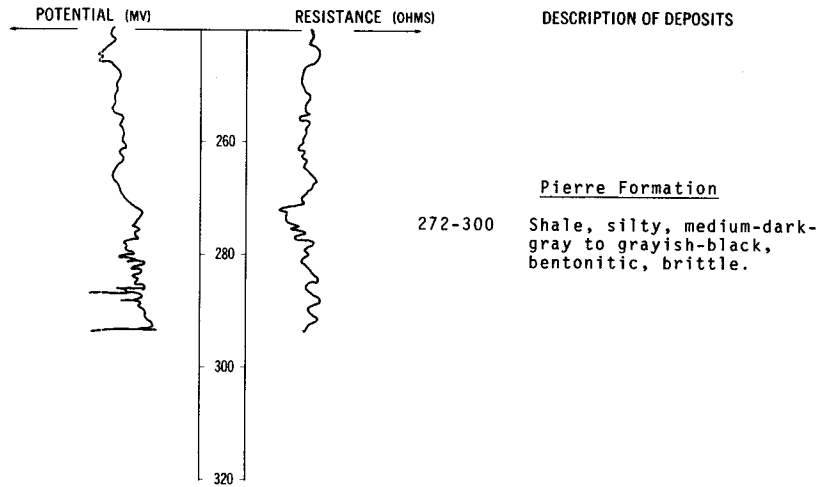
NDSWC 8832, Continued

LOCATION: 155-065-20CCC

DATE DRILLED: August 1973

ALTITUDE: 1450  
(FT, MSL)

DEPTH: 300  
(FT)



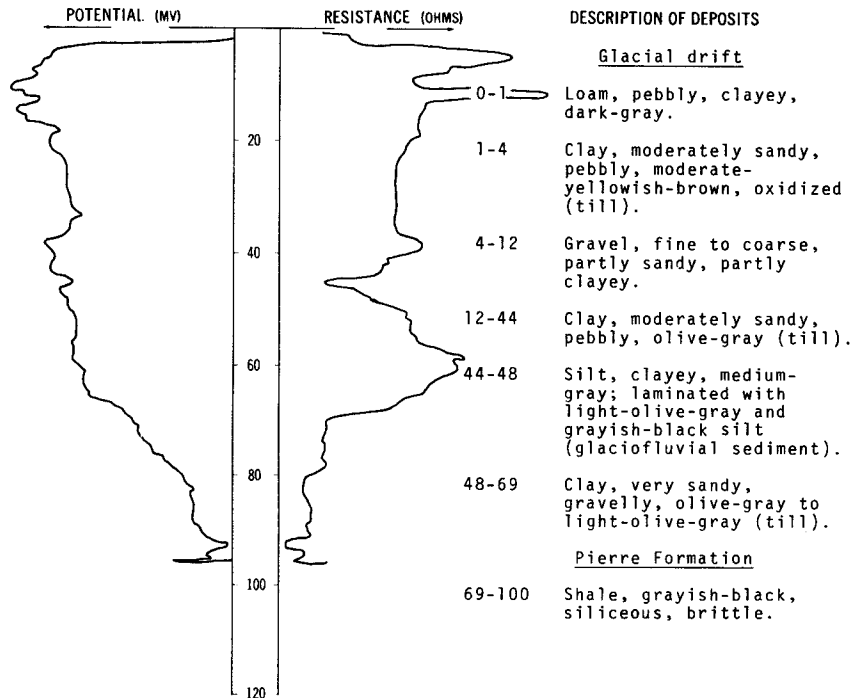
NDSWC 8840

LOCATION: 155-065-23AAA

DATE DRILLED: August 1973

ALTITUDE: 1461  
(FT, MSL)

DEPTH: 100  
(FT)



155-065-28AAA  
NDSWC 8833

Altitude: 1474 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Loam, pebbly, grayish-black-----	1	1
	Sand, fine to very coarse, gravelly, light-brown, oxidized-----	7	8
	Clay, moderately sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	15	23
	Clay, slightly sandy, pebbly, olive- gray (till)-----	12	35
	Gravel, fine to coarse, loose-----	3	38
	Clay, sandy, pebbly, gravelly, olive- gray (till)-----	40	78
	Clay, moderately sandy, pebbly, bouldery, cobbly, medium-dark-gray; contains much reworked shale from Pierre Formation-----	40	118
Pierre Formation:			
	Shale, silty, medium-dark-gray, partly macerated-----	22	140

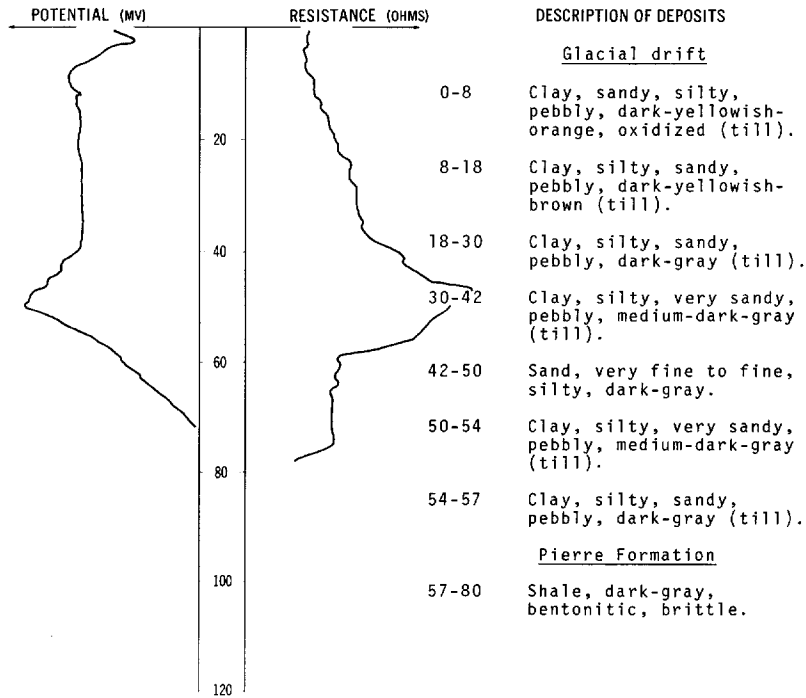
NDSWC 9031

LOCATION: 155-065-29AAA2

DATE DRILLED: August 1974

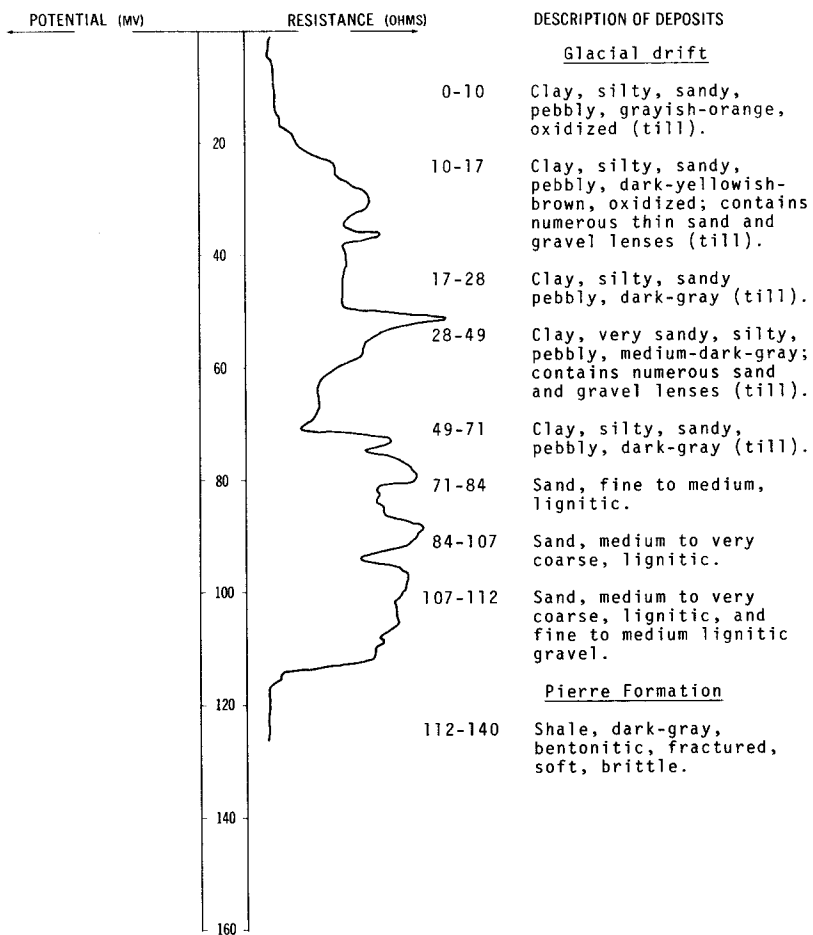
ALTITUDE: 1462  
(FT, MSL)

DEPTH: 80  
(FT)



LOCATION: 155-065-30BBB  
 ALTITUDE: 1453  
 (FT, MSL)

DATE DRILLED: August 1974  
 DEPTH: 140  
 (FT)



155-065-35BAC  
 Test hole 651  
 (Log modified from Paulson and Akin, 1964, p. 151)

Altitude: 1585 feet

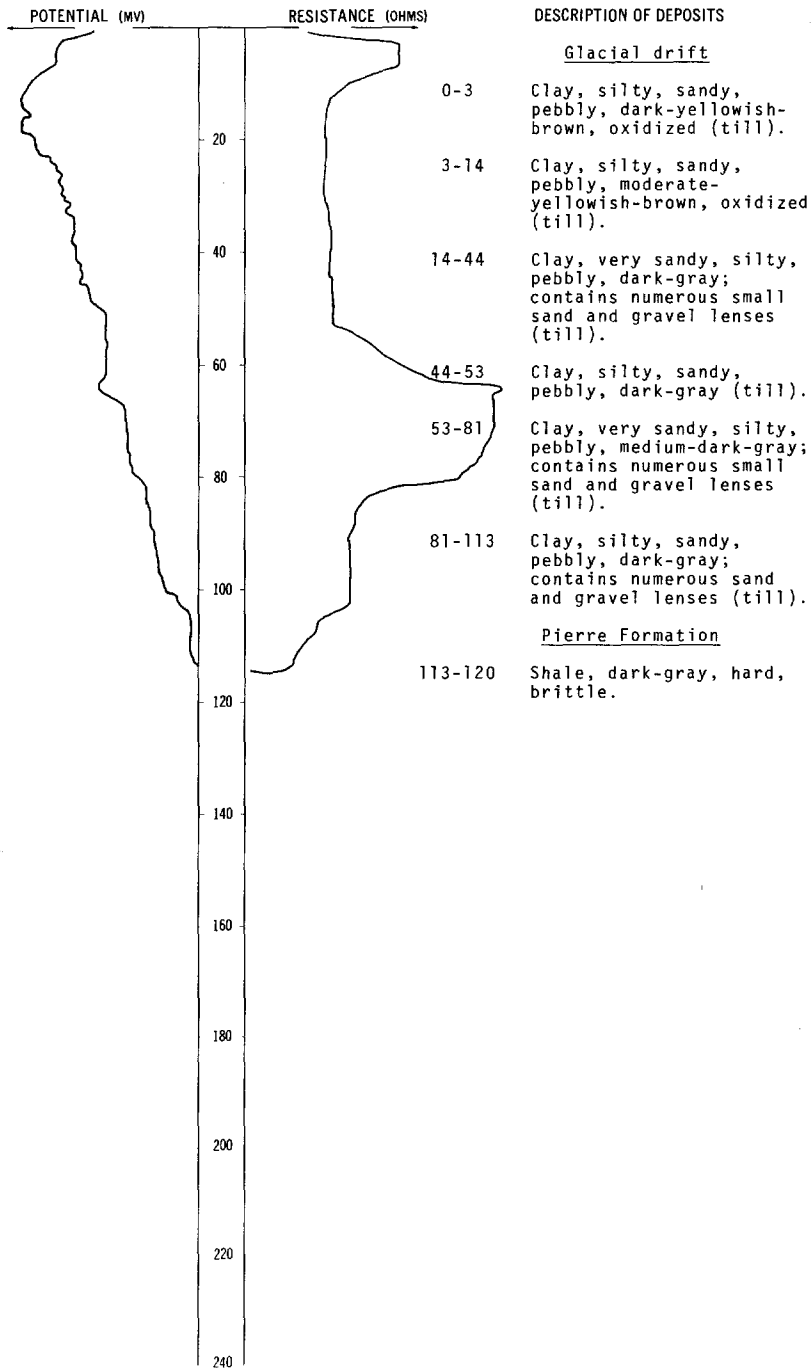
Geologic source	Material	Thickness (feet)	Depth (feet)
<u>Glacial drift:</u>			
	Till, yellowish-gray-----	40	40
	Till, light-gray-----	12	52
	Shale, silty, light-gray (block)-----	8	60

LOCATION: 155-065-35CCC

DATE DRILLED: August 1974

ALTITUDE: 1478  
(FT. MSL)

DEPTH: 120  
(FT)

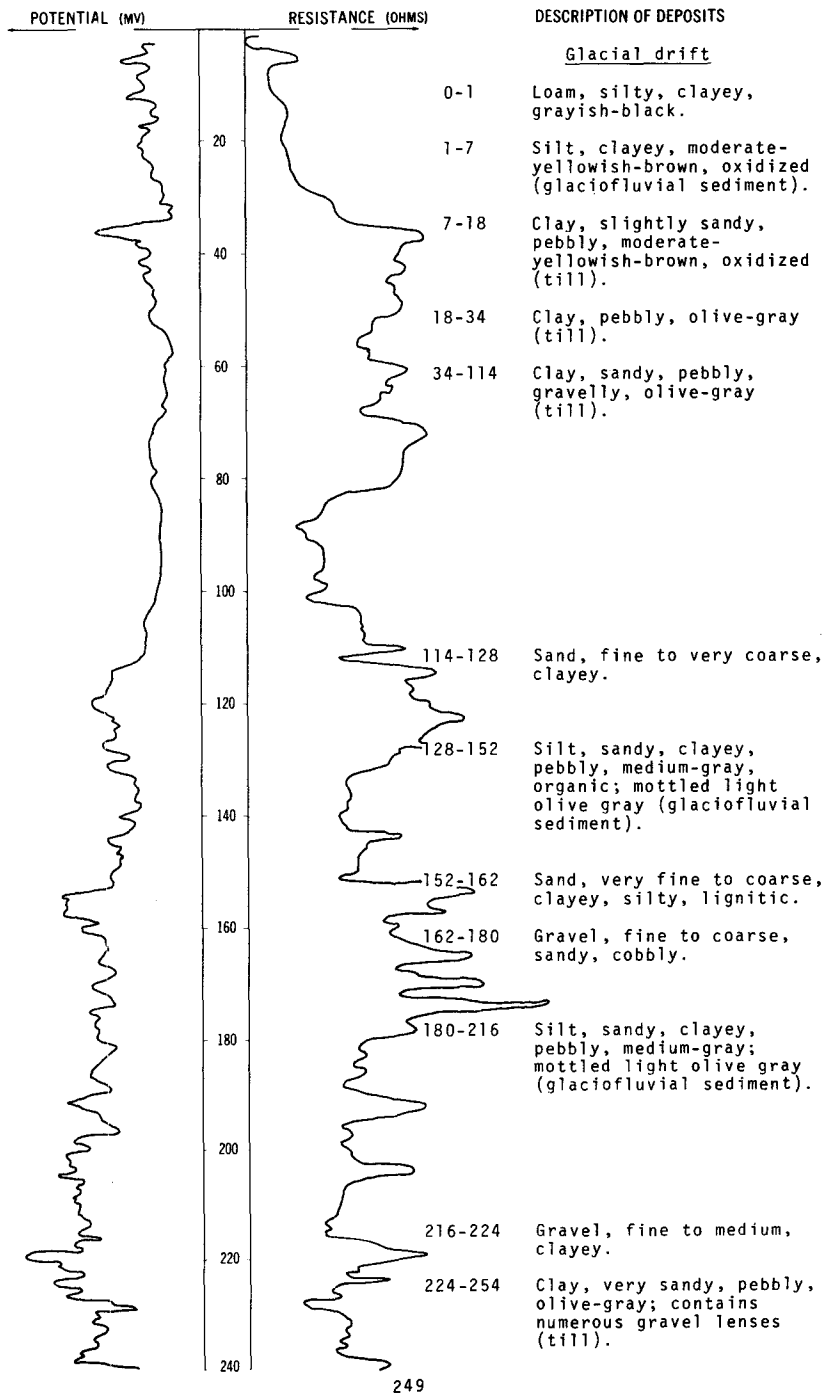


LOCATION: 155-066-02CCC

DATE DRILLED: August 1973

ALTITUDE: 1450  
(FT. MSL)

DEPTH: 320  
(FT)



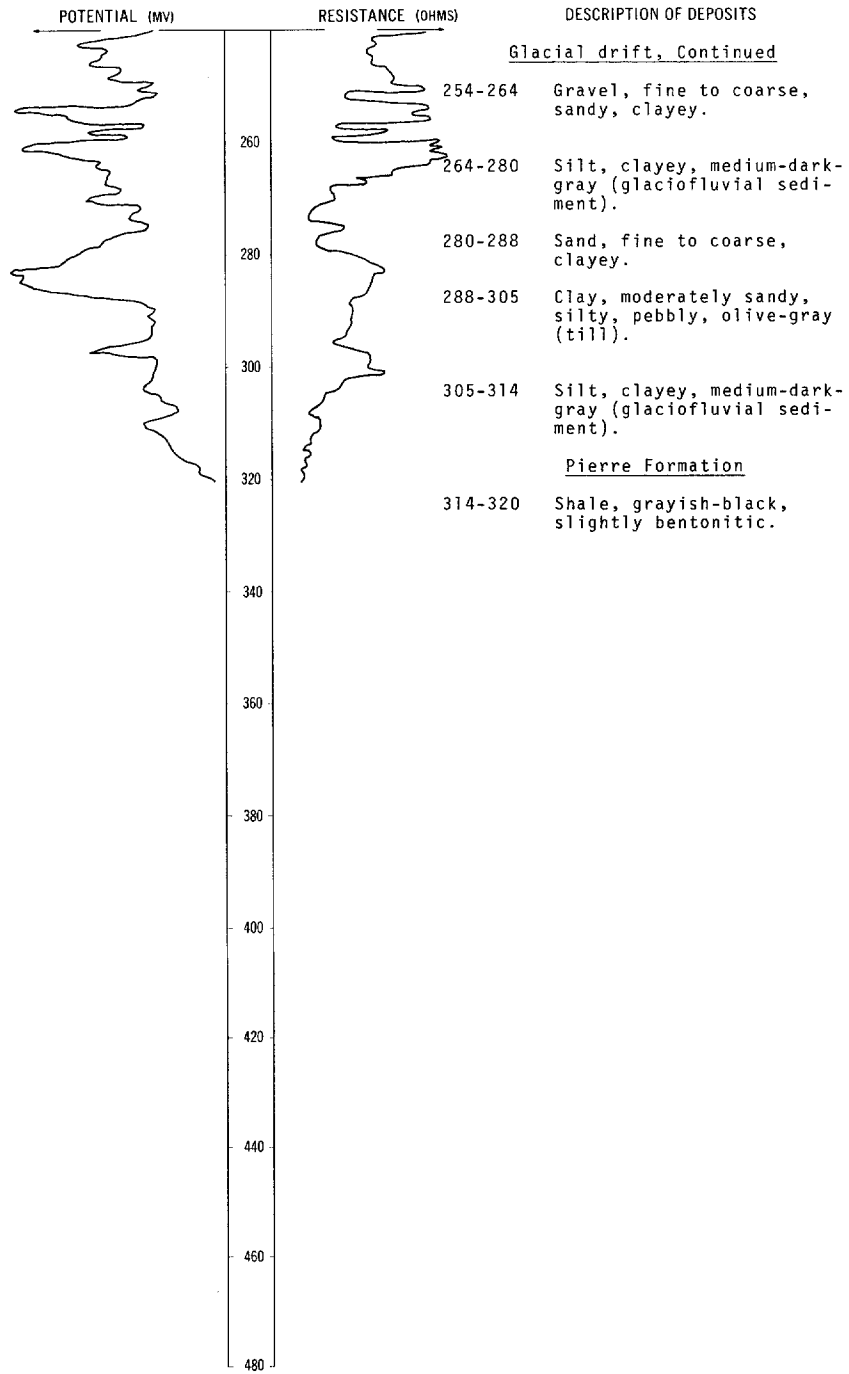
NDSWC 8830, Continued

LOCATION: 155-066-02CCC

DATE DRILLED: August 1973

ALTITUDE: 1450  
(FT, MSL)

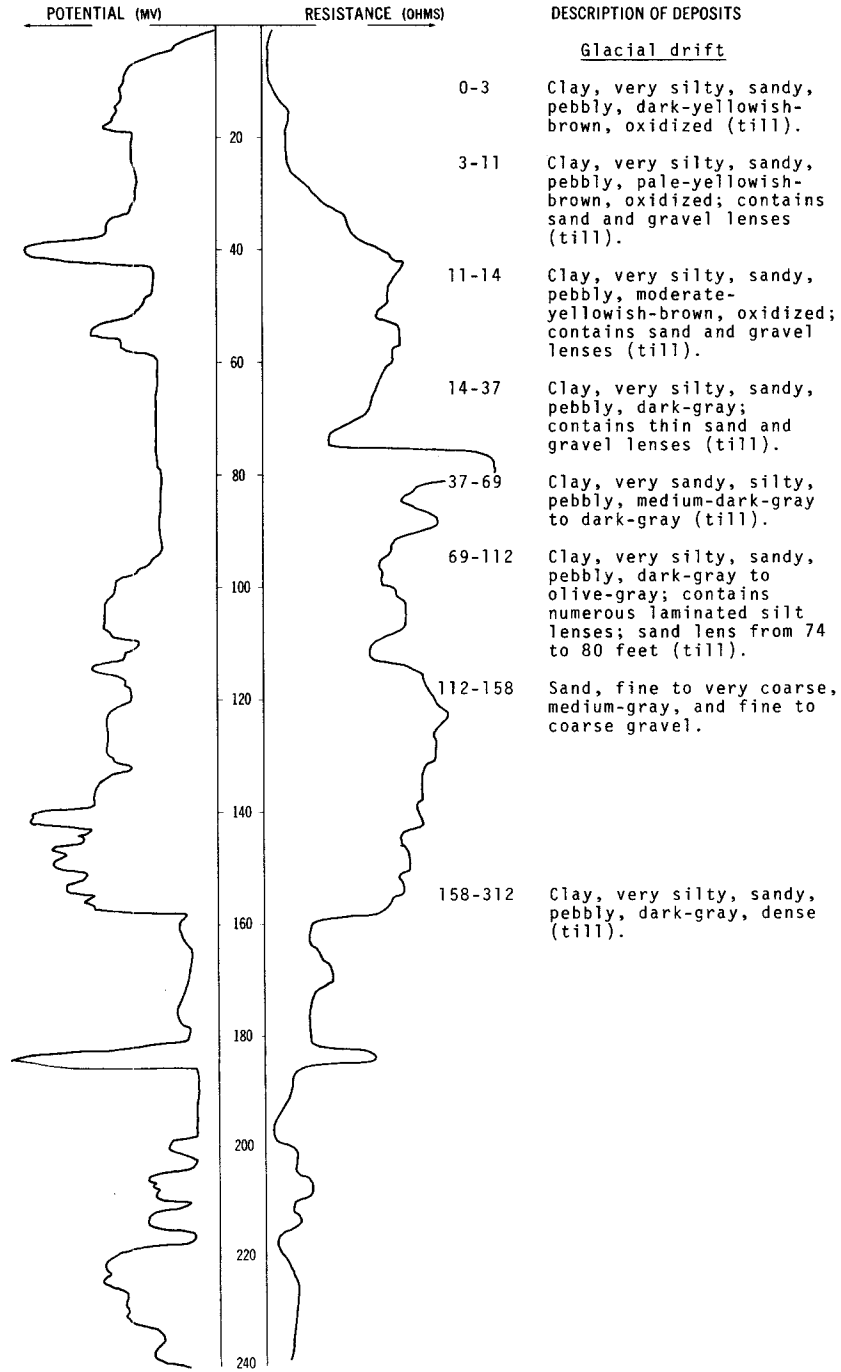
DEPTH: 320  
(FT)





LOCATION: 155-066-03BBB  
 ALTITUDE: 1447  
 (FT, MSL)

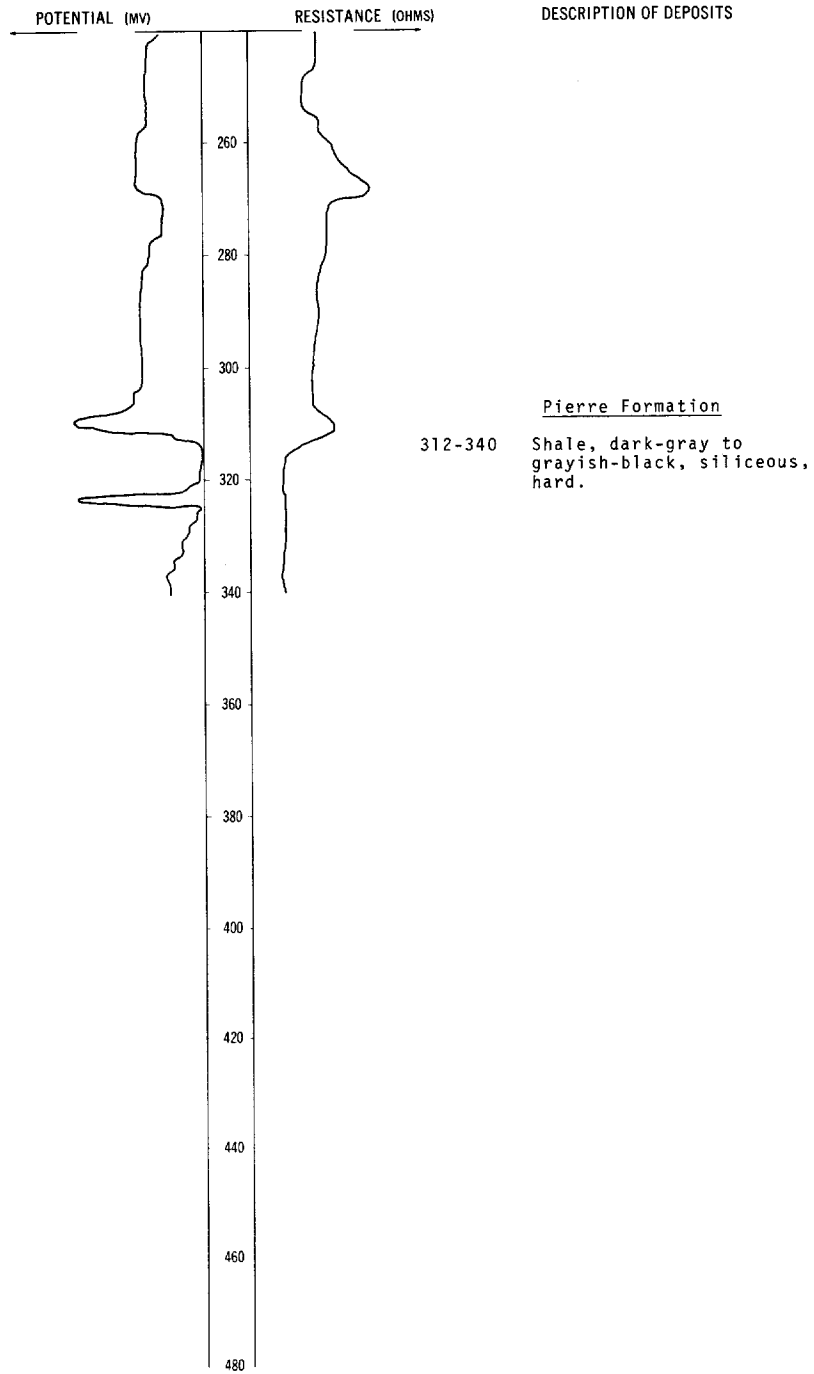
DATE DRILLED: August 1974  
 DEPTH: 340  
 (FT)



NDSWC 9037, Continued

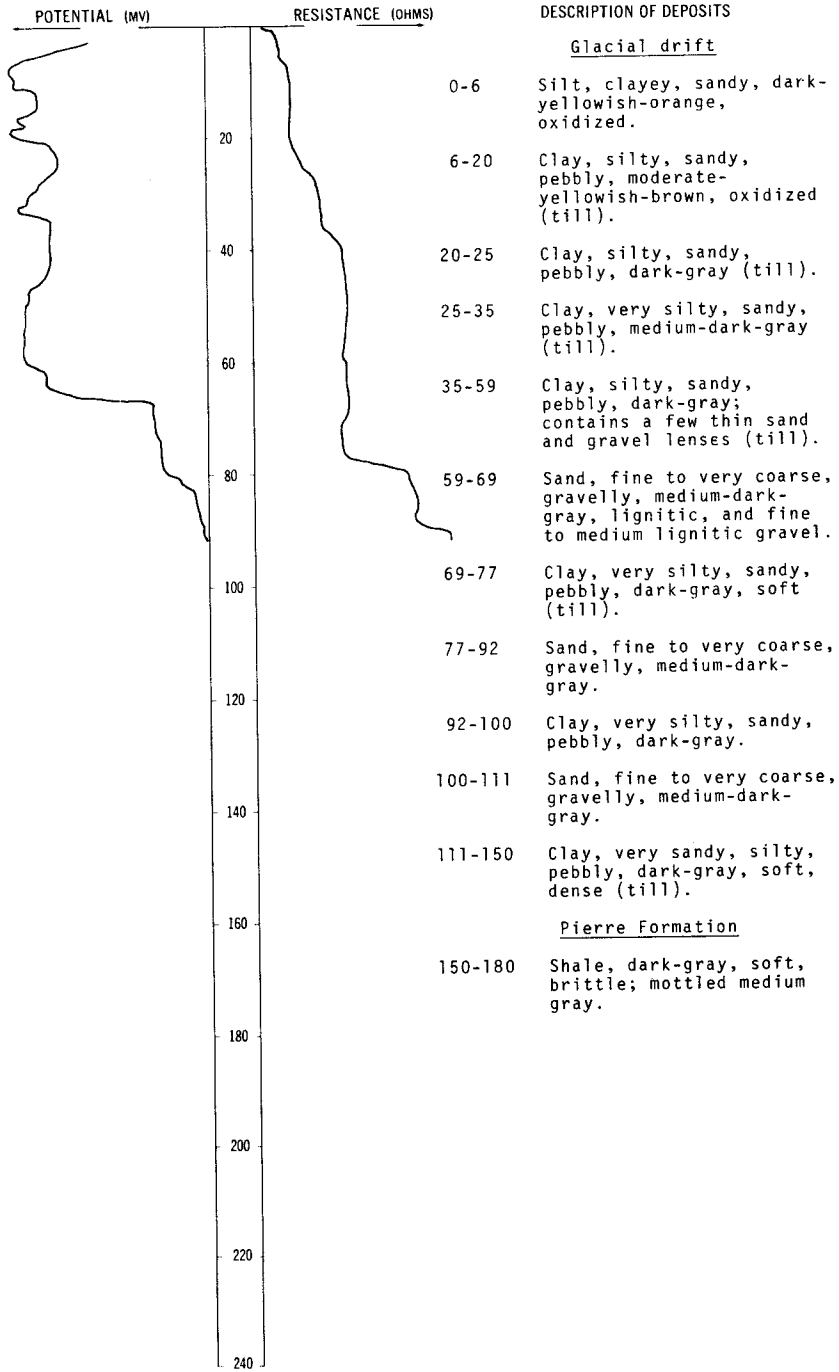
LOCATION: 155-066-03BBB  
ALTITUDE: 1447  
(FT, MSL)

DATE DRILLED: August 1974  
DEPTH: 340  
(FT)



LOCATION: 155-066-04BAB  
 ALTITUDE: 1450  
 (FT, MSL)

DATE DRILLED: August 1974  
 DEPTH: 180  
 (FT)



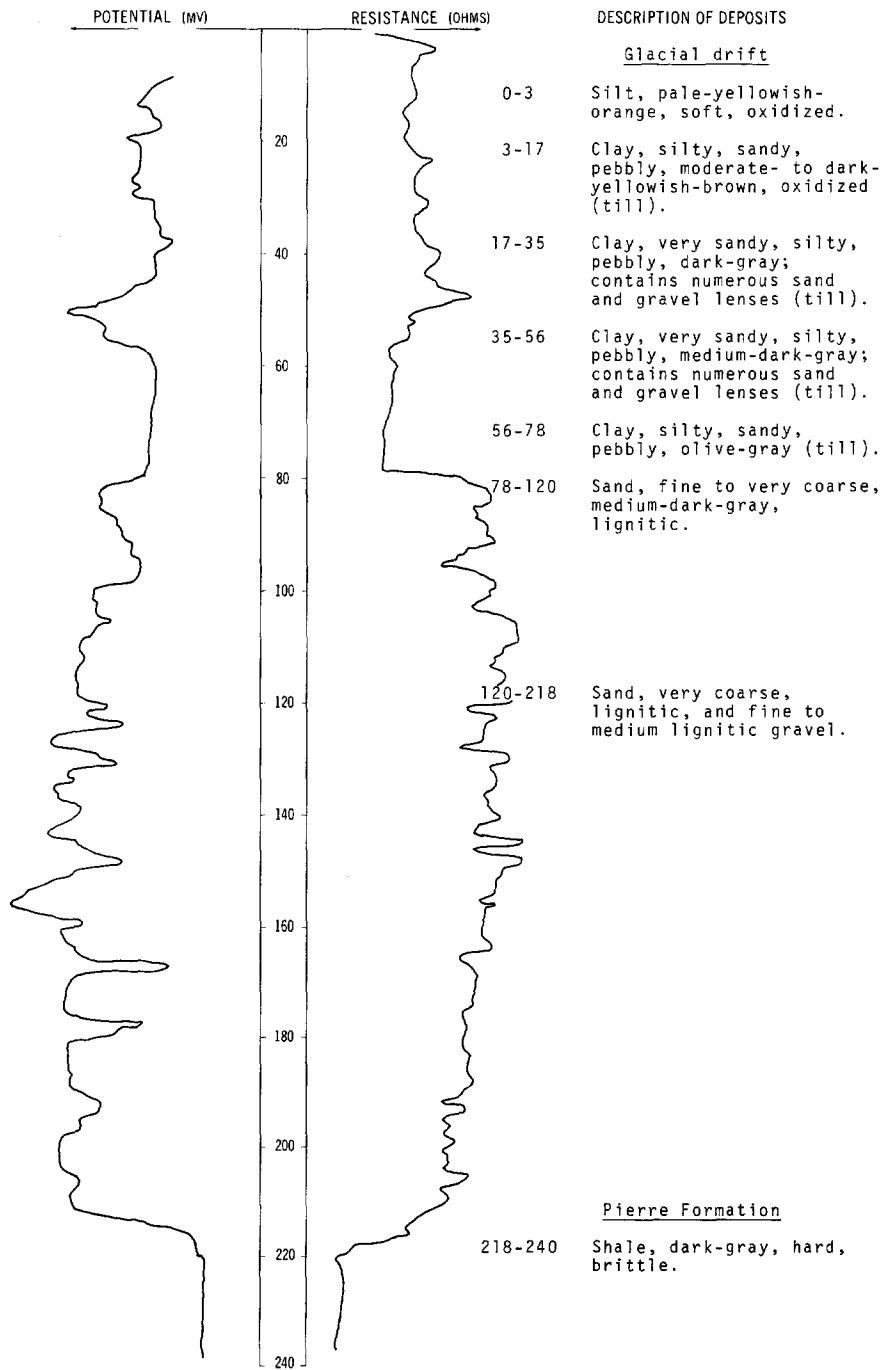
NDSWC 9035

LOCATION: 155-066-04CCC

DATE DRILLED: August 1974

ALTITUDE: 1450  
(FT, MSL)

DEPTH: 240  
(FT)



155-066-06CCC2  
(Log from C. A. Simpson and Son)

Altitude: 1455 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil-----	2	2
	Clay, yellow-----	16	18
	Clay, blue-----	17	35
	Sand, fine, clayey-----	45	80
	Clay, blue-----	14	94
	Gravel-----	5	99
	Clay, blue-----	--	99

155-066-06CDB  
(Log from C. A. Simpson and Son)

Altitude: 1453 feet

Glacial drift:			
	Topsoil-----	1	1
	Clay, yellow-----	17	18
	Clay, blue-----	11	29
	Sand and gravel-----	30	59
	Sand, fine-----	16	75
	Clay, sandy, blue-----	15	90
	Sand-----	12	102

155-066-07AAA  
 Test hole 347  
 (Log modified from Paulson and Akin, 1964, p. 151)

Altitude: 1447 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, black-----	1	1
	Clay and silt, sandy, light-brown-----	2	3
	Sand, fine to medium-----	26	29
	Till, gray-----	17	46
	Sand, coarse and very coarse, clayey and gravelly, gray-----	4	50
	Till, gray-----	26	76
	Till, gray; numerous pieces of detrital lignite-----	14	90
	Till, gray-----	9	99
	Till, gray; numerous pieces of detrital lignite-----	8	107
	Till, gray-----	36	143
Pierre Formation:			
	Shale, gray-----	7	150

155-066-07BBA2  
 (Log modified from Holbeck Well Service)

Altitude: 1452 feet

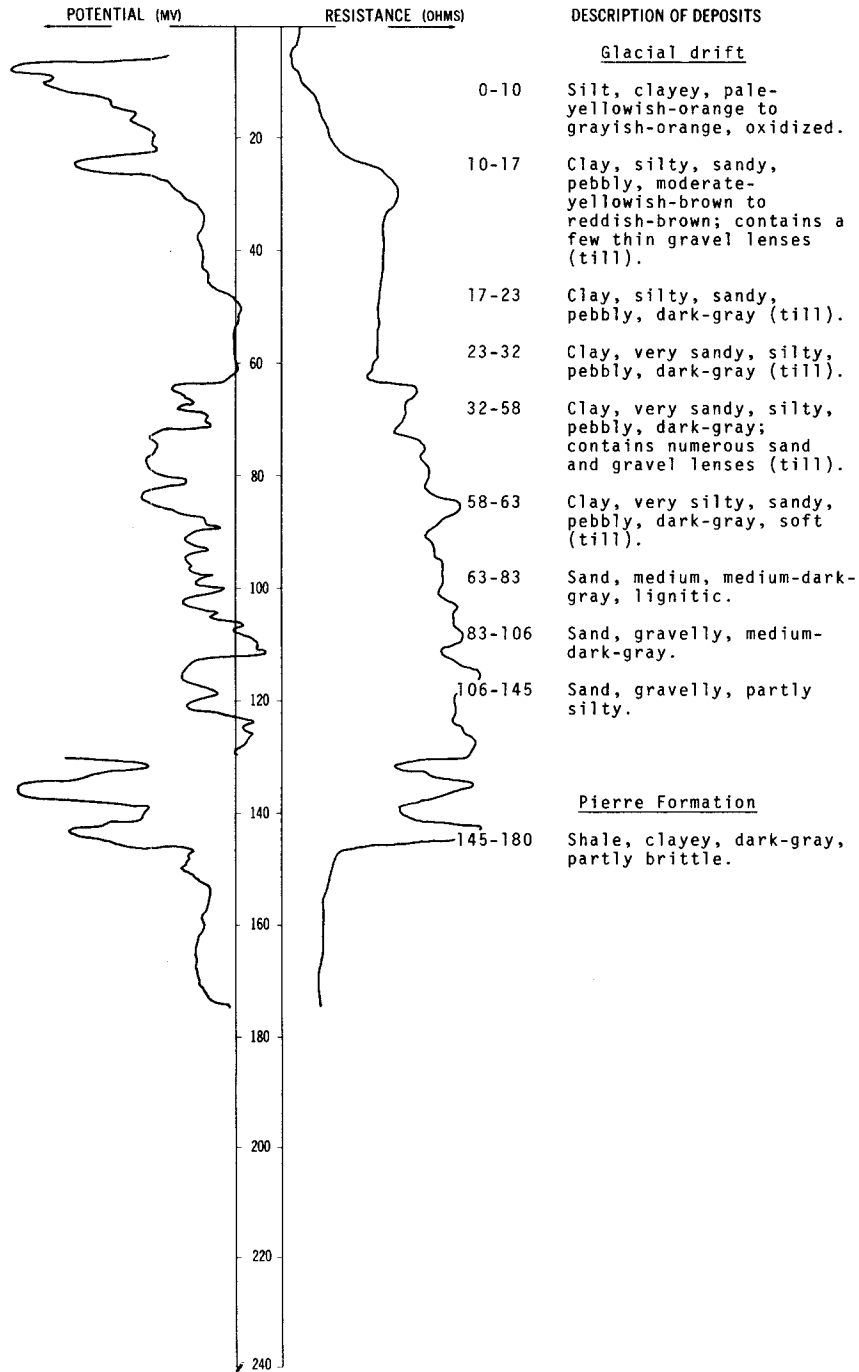
Glacial drift:			
	Fill-----	2	2
	Clay, yellow, soft-----	20	22
	Clay, sandy, blue-----	48	70
	Clay and gravel-----	23	93
	Hardpan, gravelly-----	6	99
	Clay, blue-----	33	132
Pierre Formation:			
	Slate (shale)-----	48	180

LOCATION: 155-066-09AAA

ALTITUDE: 1450  
(FT, MSL)

DATE DRILLED: August 1974

DEPTH: 180  
(FT)

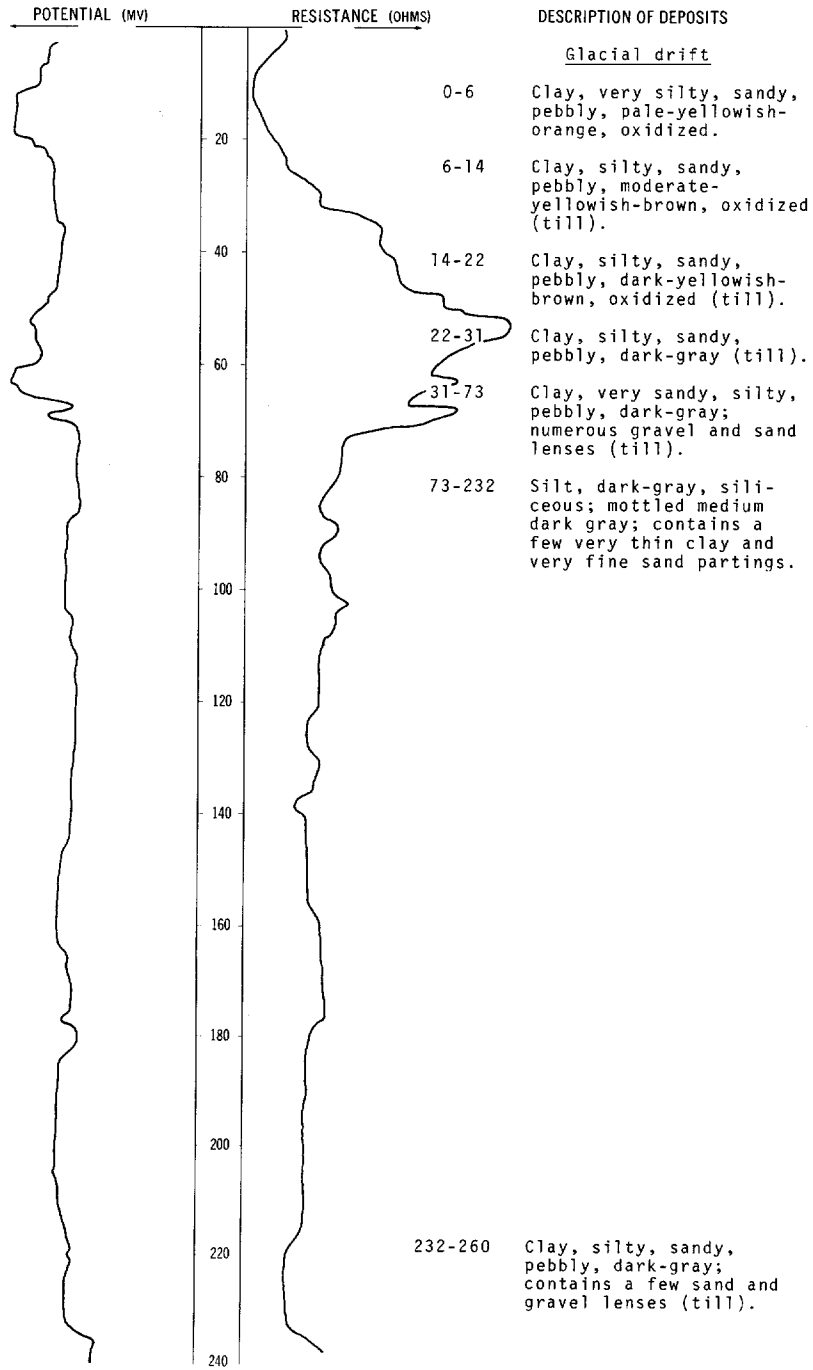


LOCATION: 155-066-11AAA

DATE DRILLED: August 1974

ALTITUDE: 1453  
(FT, MSL)

DEPTH: 320  
(FT)





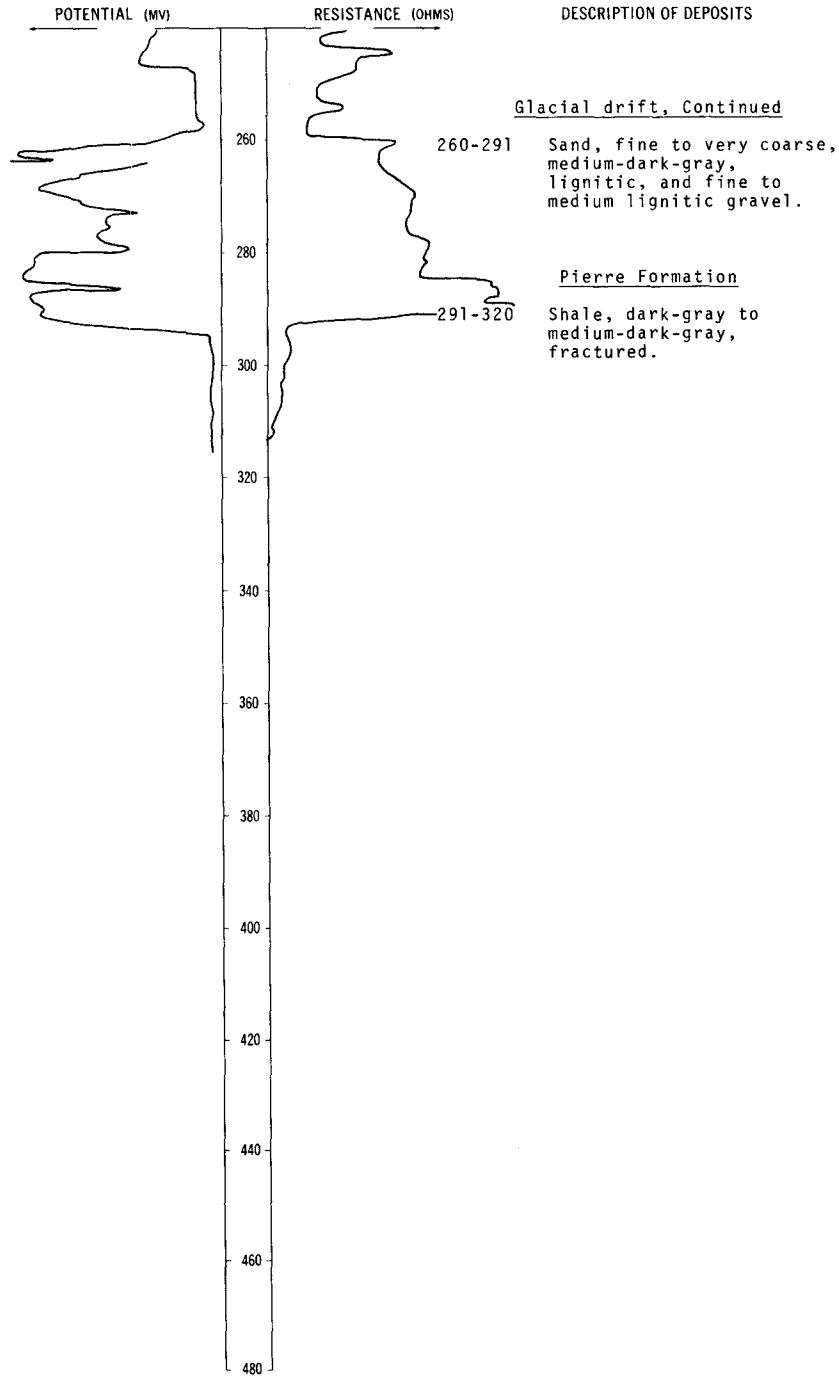
NDSWC 9033, Continued

LOCATION: 155-066-11AAA

DATE DRILLED: August 1974

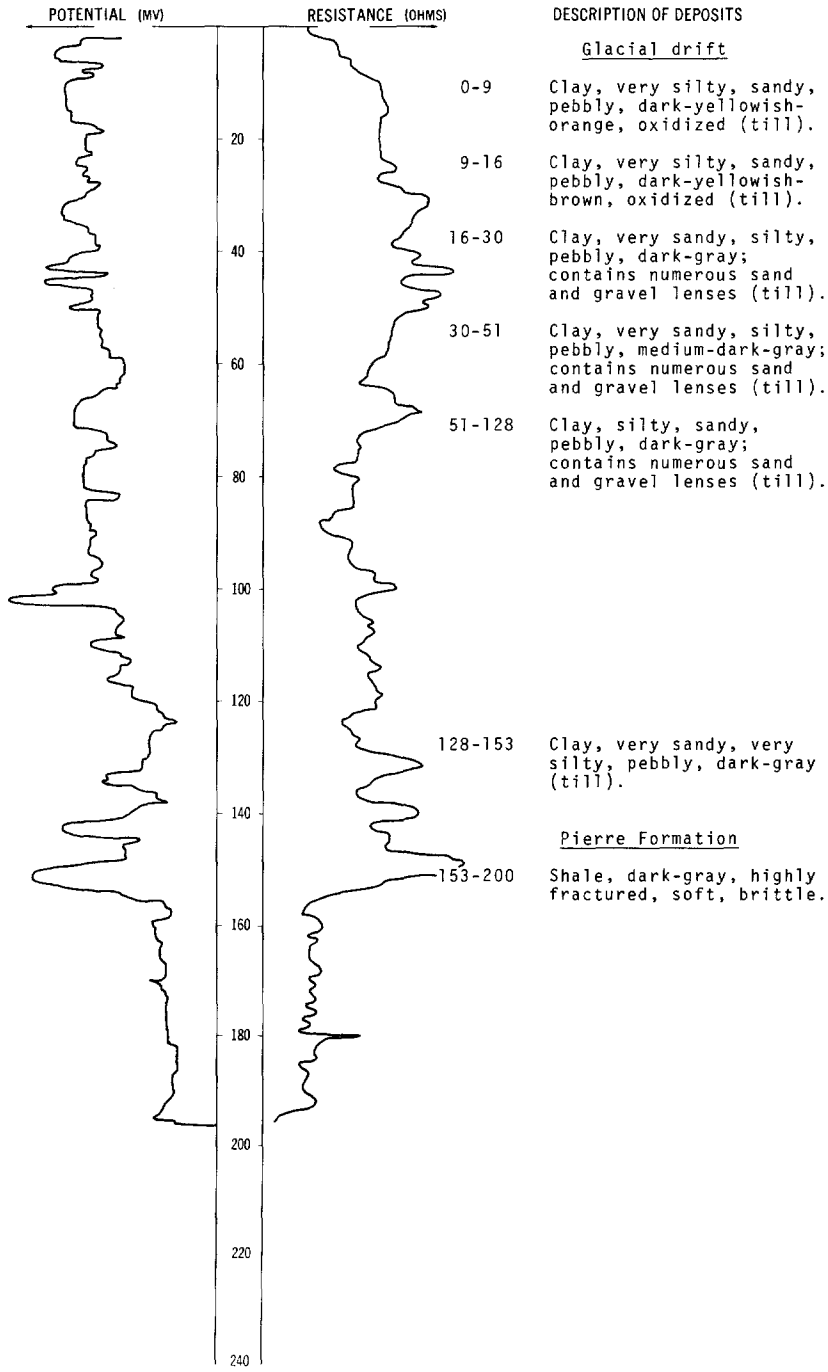
ALTITUDE: 1453  
(FT. MSL)

DEPTH: 320  
(FT)



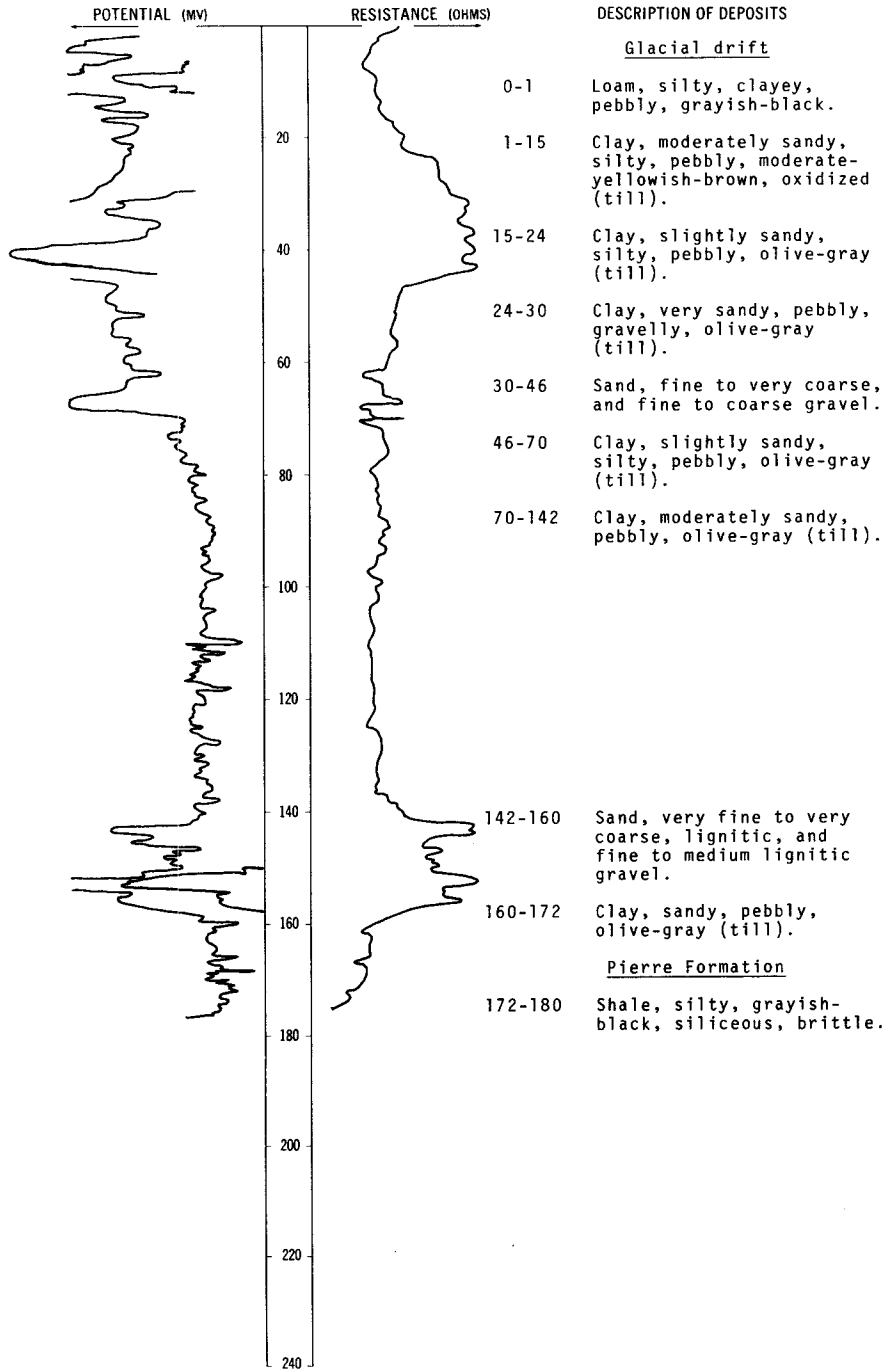
LOCATION: 155-066-13CCC  
ALTITUDE: 1457  
(FT, MSL)

DATE DRILLED: August 1974  
DEPTH: 200  
(FT)



LOCATION: 155-066-21ABA  
 ALTITUDE: 1454  
 (FT. MSL)

DATE DRILLED: September 1973  
 DEPTH: 180  
 (FT)



155-066-25BBB2  
(Log from Holbeck Well Service)

Altitude: 1460 feet

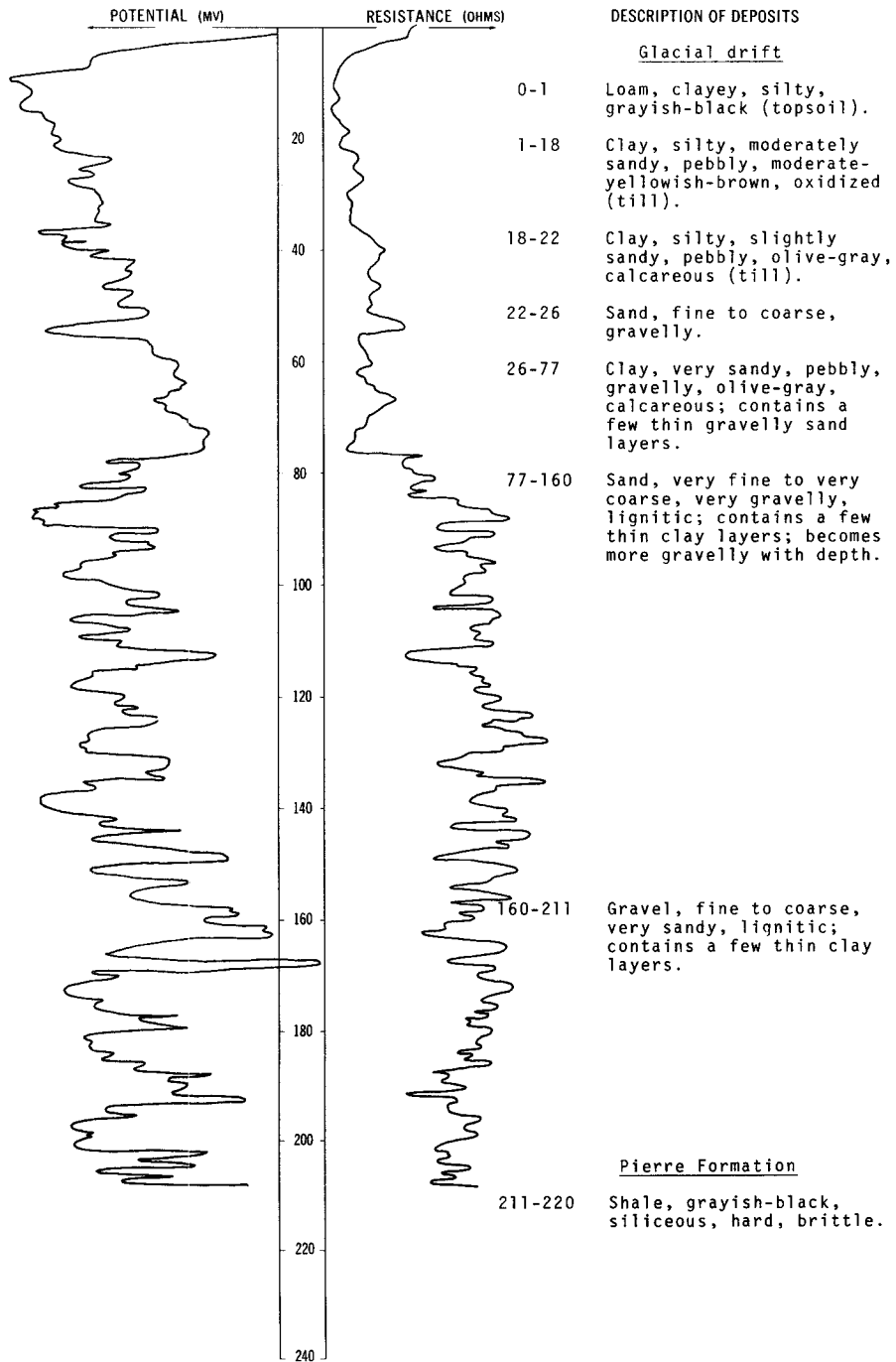
<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil-----	1	1
	Clay, yellow-----	35	36
	Clay, gravelly, blue-----	22	58
	Gravel and sand-----	15	73

LOCATION: 155-066-26CCC2

DATE DRILLED: September 1973

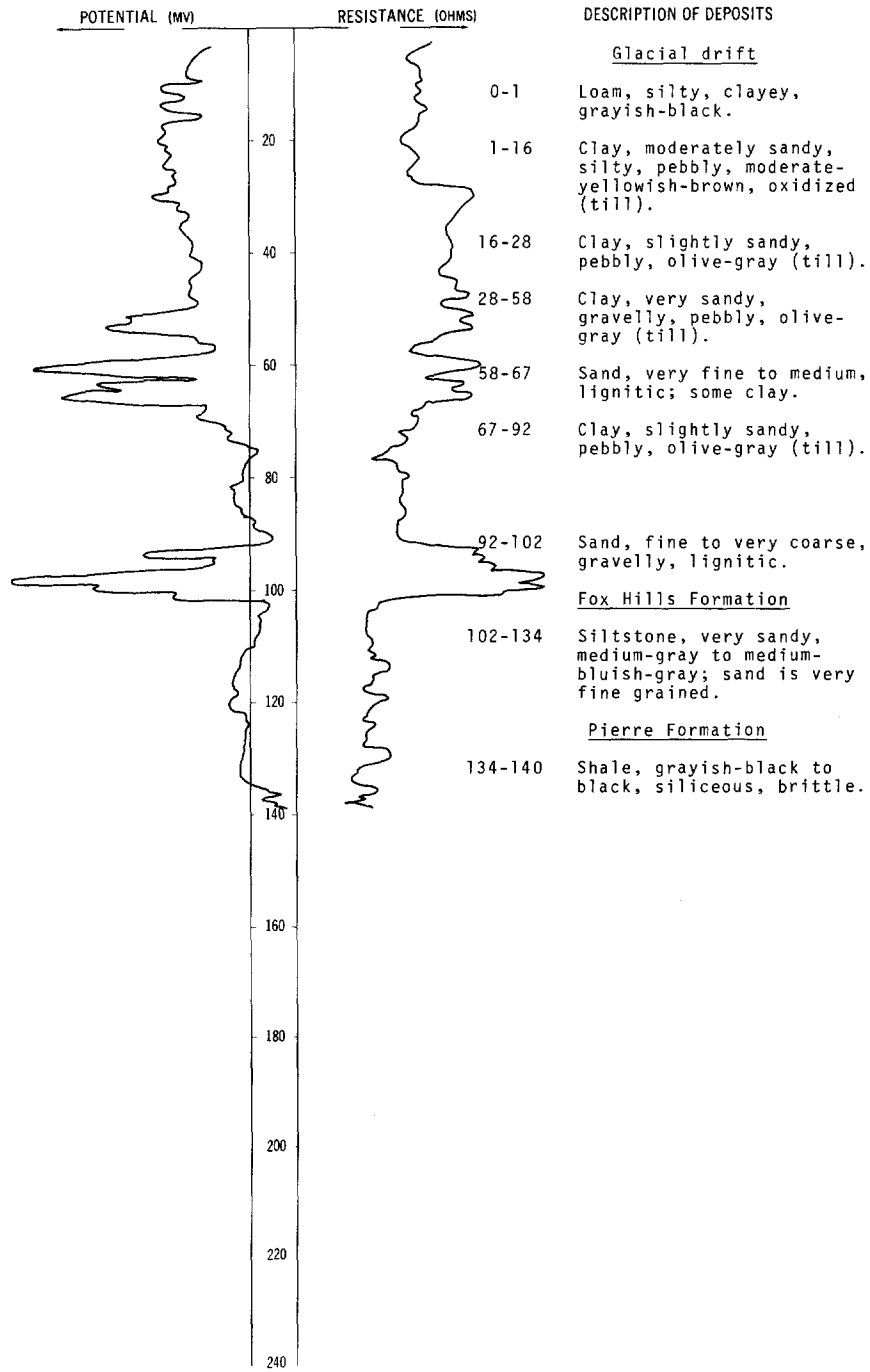
ALTITUDE: 1461  
(FT, MSL)

DEPTH: 220  
(FT)



LOCATION: 155-066-29CCC  
 ALTITUDE: 1455  
 (FT, MSL)

DATE DRILLED: September 1973  
 DEPTH: 140  
 (FT)

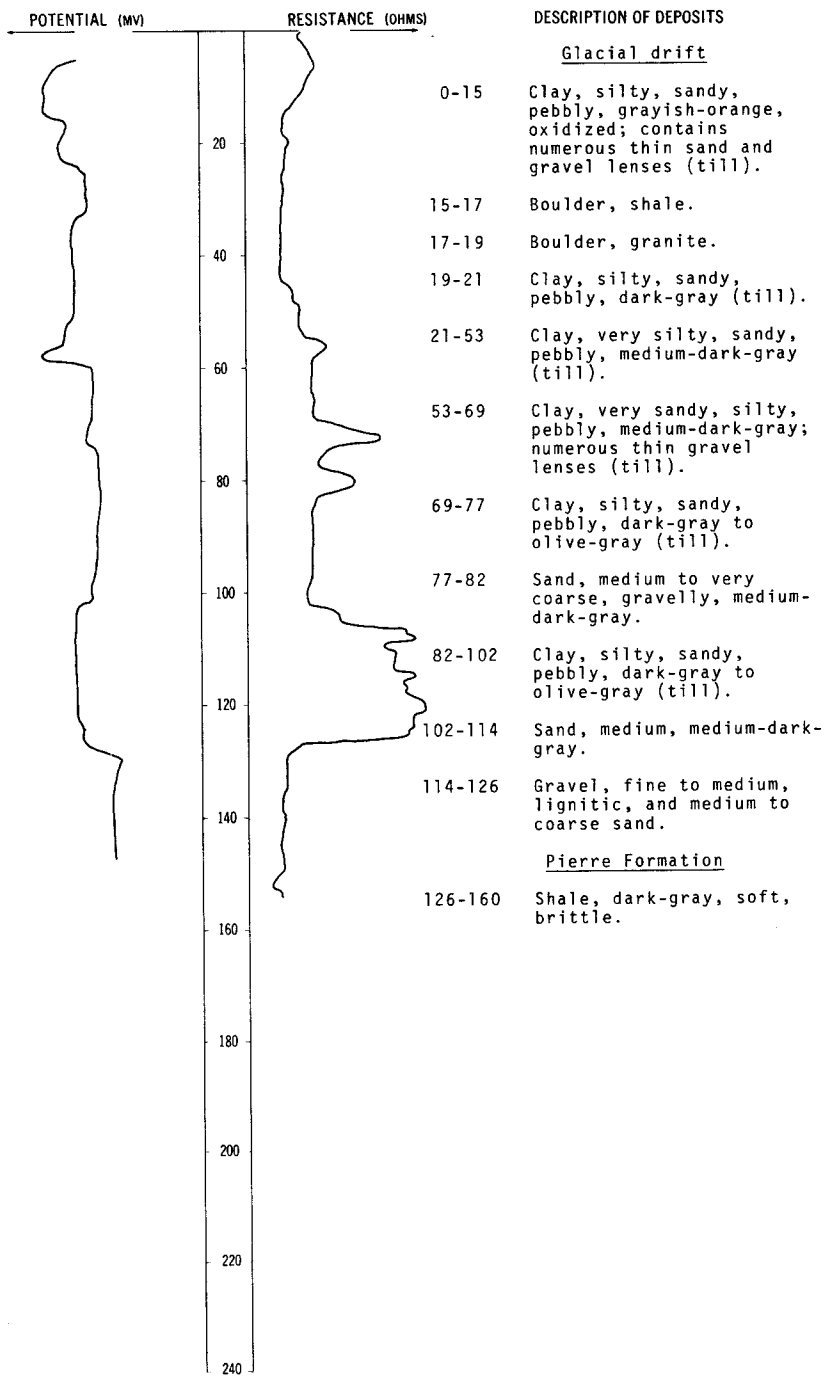


LOCATION: 155-066-32AAA

ALTITUDE: 1472  
(FT, MSL)

DATE DRILLED: August 1974

DEPTH: 160  
(FT)

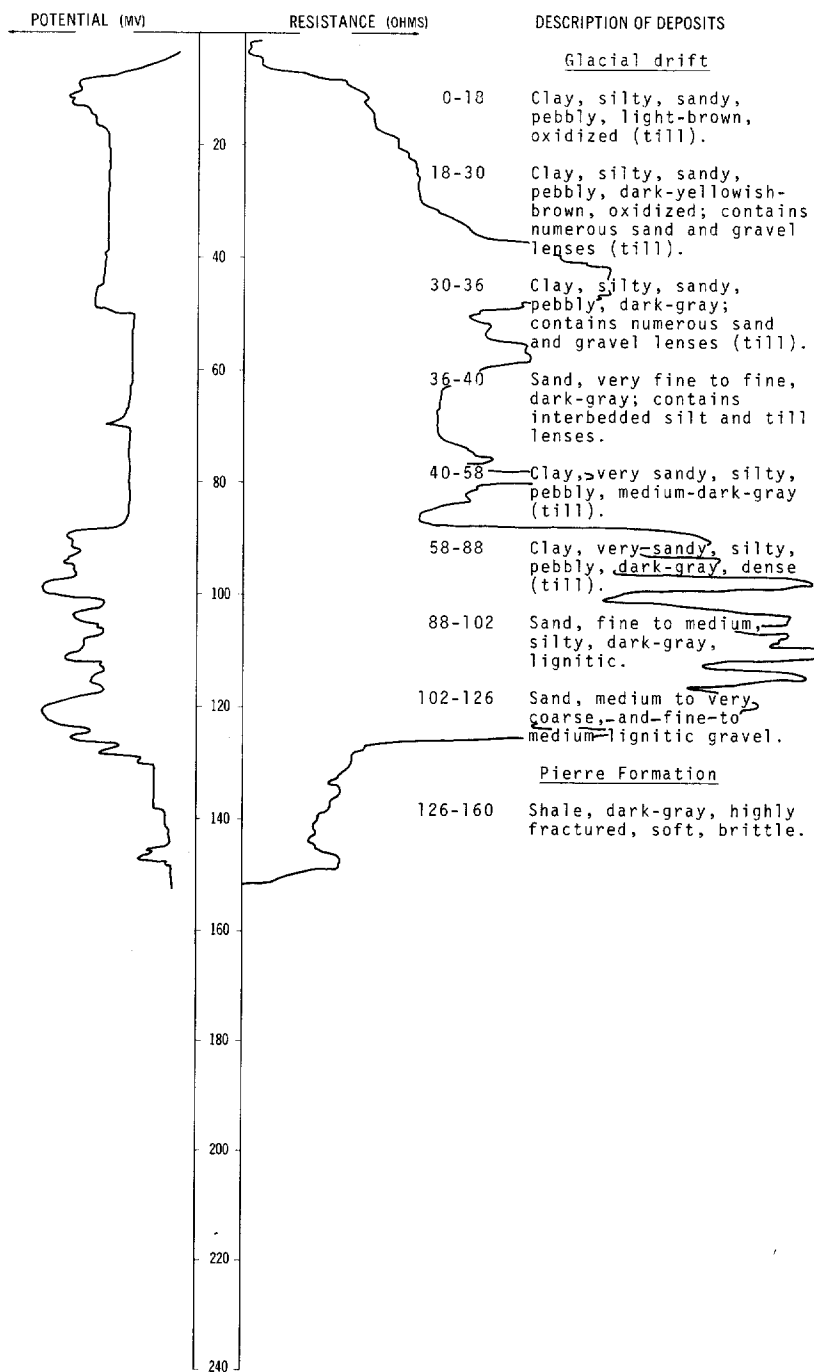


LOCATION: 155-066-34CCC

DATE DRILLED: August 1974

ALTITUDE: 1460  
(FT, MSL)

DEPTH: 160  
(FT)





156-060-05ACD  
USAF 2026

Altitude: 1517 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, silty, sandy, black-----	2	2
	Clay, silty, sandy, gravelly, brown and gray-----	6	8
	Silt and clay, sandy, gravelly, brown-----	6	14
	Clay, silty, sandy, gravelly, gray-----	7	21
Pierre Formation:			
	Shale, dark-gray, slightly to moderately fractured-----	109	130

156-060-05DBA  
USAF 26

Altitude: 1517 feet

Glacial drift:			
	Silt, clayey, sandy, black-----	2	2
	Silt, clayey, sandy, brown; with gray mottling-----	6	8
	Silt, sandy, clayey, gravelly, brown-----	10	18
	Clay, sandy, silty, gravelly, gray-----	6	24
	Shale and silt; angular shale fragments in dark-gray clayey silt matrix-----	4	28
Pierre Formation:			
	Shale, silty, dark-gray; moderately to highly fractured from 28 to 37, moderately fractured from 37 to 78, fissile to crumbly from 78 to 88, and moderately fractured from 88 to 130 feet-----	102	130

156-060-08BCC  
NDSWC 8032  
(Log from Naplin, 1974, p. 21)

Altitude: 1519 feet

Glacial drift:			
	Topsoil, silty, clayey, pebbly, brownish-black-----	1	1
	Clay, silty, moderately sandy, pebbly, a few cobbles and boulders, moderate-yellowish- brown, moderately cohesive, slightly plastic, oxidized (till)-----	18	19
	Clay, silty, slightly sandy, pebbly, olive-gray, cohesive, slightly plastic, calcareous (till)-----	10	29
Pierre Formation:			
	Shale, siliceous, grayish-black to black, indurated, noncalcareous, not fractured-----	11	40

156-060-11CCC  
 NDSWC 5997  
 (Log from Naplin, 1974, p. 22)

Altitude: 1530 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, clayey, grayish-black-----	1	1
	Clay, silty, moderately sandy, pebbly, a few cobbles and boulders, moderate-yellowish-brown, slightly cohesive, moderately plastic, oxidized (till)-----	19	20
	Clay, silty, slightly sandy, pebbly, occasional cobbles and boulders, olive-gray, cohesive, slightly plastic, calcareous (till)-----	12	32
Pierre Formation:			
	Shale, siliceous, grayish-black to black, noncalcareous, not fractured-----	8	40

156-060-14DCC  
 NDSWC 5996  
 (Log from Naplin, 1974, p. 22)

Altitude: 1541 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, clayey, pebbly, dark-brown-----	1	1
	Gravel, sandy, clayey, fine to coarse, angular to rounded, poorly sorted, mostly carbonates, well oxidized-----	6	7
	Clay, silty, moderately sandy, pebbly, moderate-yellowish-brown, slightly cohesive, moderately plastic, oxidized (till)-----	15	22
	Clay, silty, slightly sandy, pebbly, gravelly, olive-gray, cohesive, moderately plastic (till)-----	10	32
Pierre Formation:			
	Shale, siliceous, grayish-black to black, noncalcareous, not fractured-----	8	40

156-060-19CCC  
 NDSWC 8033  
 (Log from Naplin, 1974, p. 23)

Altitude: 1511 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, clayey, pebbly, brownish-black-----	1	1
	Clay, silty, moderately sandy, pebbly, a few cobbles and boulders, moderate-yellowish-brown, cohesive, slightly plastic, oxidized (till)-----	21	22
	Clay, silty, slightly sandy, pebbly, a few cobbles, olive-gray, cohesive, moderately plastic, calcareous (till)-----	20	42
Pierre Formation:			
	Shale, siliceous, grayish-black to black, indurated, noncalcareous, not fractured-----	18	60

156-060-20CCD  
 NDSWC 5991  
 (Log from Naplin, 1974, p. 23)

Altitude: 1513 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, clayey, pebbly, dark-brown-----	1	1
	Clay, silty, moderately sandy, pebbly, a few cobbles, moderate-yellowish-brown, slightly cohesive, moderately plastic, oxidized (till)-----	15	16
	Clay, silty, slightly sandy, pebbly, a few cobbles and boulders, olive-gray, cohesive, moderately plastic, calcareous (till)-----	24	40
Pierre Formation:			
	Shale, siliceous, grayish-black to black, brittle to moderately soft, noncalcareous, not fractured-----	20	60

156-060-21AAA  
 NDSWC 5998  
 (Log from Naplin, 1974, p. 24)

Altitude: 1525 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, clayey, pebbly, grayish-black-----	1	1
	Clay, silty, moderately sandy, pebbly, a few cobbles, moderate-yellowish-brown, slightly cohesive, moderately plastic, oxidized (till)-----	19	20
	Clay, silty, slightly sandy, pebbly, olive-gray, cohesive, moderately plastic, calcareous (till)-----	5	25
Pierre Formation:			
	Shale, siliceous, grayish-black to black, brittle to moderately soft, noncalcareous, not fractured-----	15	40

156-060-24CCC2  
 NDSWC 5995  
 (Log from Naplin, 1974, p. 24)

Altitude: 1529 feet

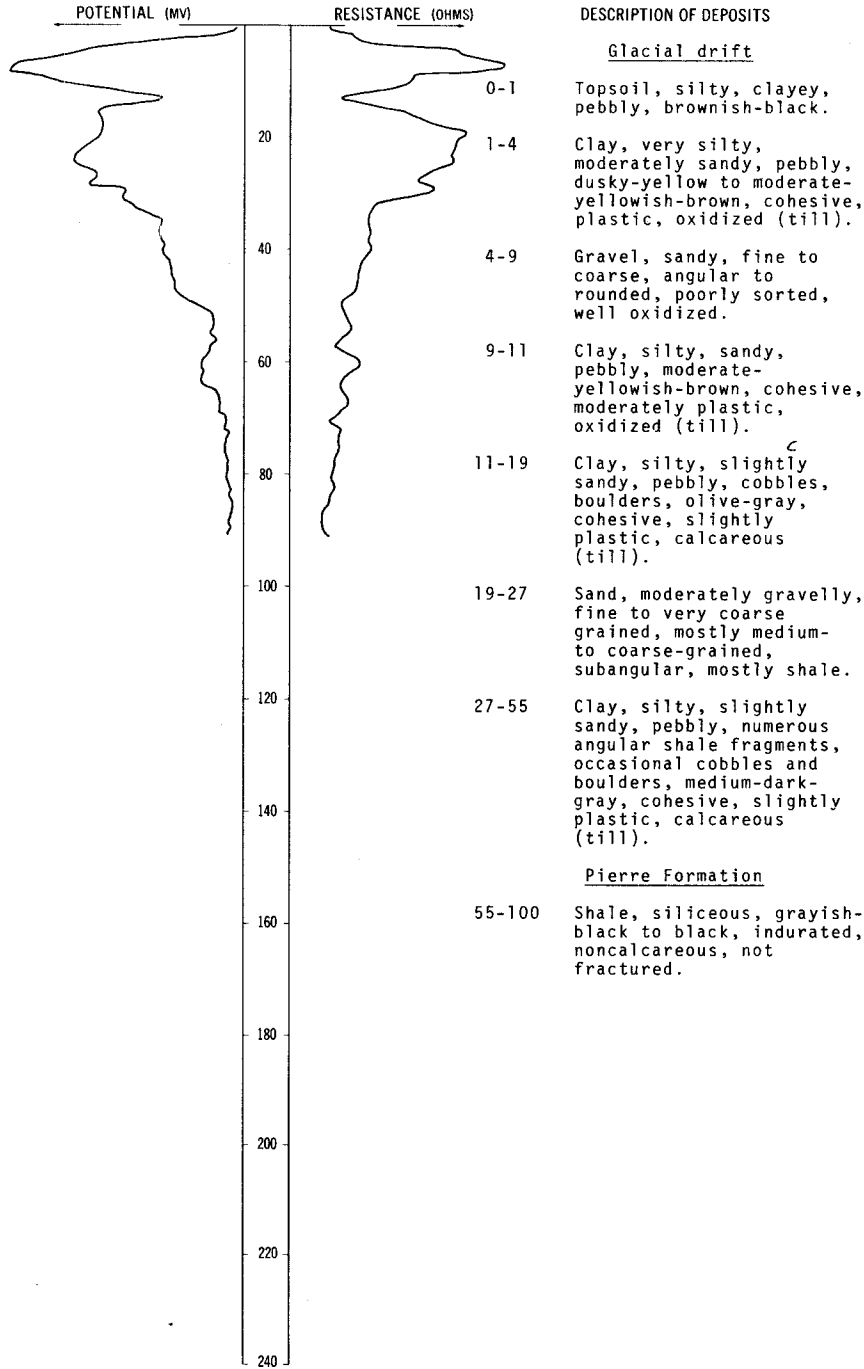
Glacial drift:			
	Topsoil, sandy, gravelly, silty, dark-brown-----	1	1
	Sand, slightly gravelly, slightly clayey, fine to very coarse grained, moderately well sorted, subrounded, oxidized-----	11	12
	Clay, silty, slightly sandy, pebbly, a few cobbles, olive-gray, cohesive, moderately plastic, calcareous (till)-----	12	24
Pierre Formation:			
	Shale, siliceous, grayish-black to black, noncalcareous, brittle to moderately soft, not fractured-----	16	40

LOCATION: 156-060-28ACD2

DATE DRILLED: July 1971

ALTITUDE: 1524  
 (FT, MSL)

DEPTH: 100  
 (FT)



156-060-29CCB  
 NDSWC 5990  
 (Log from Naplin, 1974, p. 26)

Altitude: 1504 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, very sandy, clayey, dark-brown-----	1	1
	Sand, slightly gravelly, fine to very coarse grained, mostly medium- to coarse-grained, subangular to subrounded, moderately well sorted, slightly oxidized-----	14	15
	Clay, silty, slightly sandy, pebbly, olive-gray, cohesive, moderately plastic, calcareous (till)-----	10	25
Pierre Formation:			
	Shale, siliceous, grayish-black to black, noncalcareous, not fractured-----	15	40

156-060-29DAA  
 NDSWC 5983  
 (Log from Naplin, 1974, p. 27)

Altitude: 1521 feet

Glacial drift:			
	Topsoil, silty, clayey, grayish-black-----	1	1
	Clay, silty, moderately sandy, pebbly, a few cobbles, moderate-yellowish-brown, slightly cohesive, moderately plastic, oxidized (till)-----	14	15
	Clay, silty, slightly sandy, pebbly, occasional cobbles and boulders, olive-gray, cohesive, moderately plastic, calcareous (till)-----	29	44
Pierre Formation:			
	Shale, siliceous, grayish-black to black, brittle to moderately soft, noncalcareous, very slightly fractured-----	16	60

156-060-29DCC  
 NDSWC 5992  
 (Log from Naplin, 1974, p. 27)

Altitude: 1518 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, clayey, pebbly, brownish-black-----	1	1
	Clay, silty, moderately sandy, pebbly, moderate-yellowish-brown, slightly cohesive, moderately plastic, oxidized (till)-----	19	20
	Clay, silty, slightly sandy, pebbly, a few cobbles, olive-gray, cohesive, moderately plastic, calcareous (till)----	21	41
Pierre Formation:			
	Shale, siliceous, grayish-black to black, brittle to moderately soft, noncalcareous, not fractured-----	19	60

156-060-30DCD  
 NDSWC 5985  
 (Log from Naplin, 1974, p. 28)

Altitude: 1504 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, clayey, sandy, grayish-black-----	1	1
	Clay, silty, moderately sandy to sandy, pebbly, dusky-yellow, slightly cohesive, moderately plastic, oxidized (till)-----	4	5
	Sand, fine- to coarse-grained, slightly clayey, subangular, poorly sorted, oxidized-----	1	6
	Clay, moderately sandy, pebbly, moderate-yellowish-brown, cohesive, plastic, oxidized (till)-----	3	9
	Clay, silty, slightly sandy, pebbly, olive-gray, moderately cohesive, slightly plastic, calcareous (till)-----	2	11
	Sand, moderately gravelly, fine to very coarse grained, subangular to rounded, fair sorting-----	2	13
	Clay, silty, moderately sandy, pebbly, a few cobbles, olive-gray, cohesive, slightly plastic, calcareous (till)-----	7	20
	Sand, gravelly, fine to very coarse grained, subangular, fair sorting-----	1	21
	Clay, silty, slightly sandy, pebbly, a few cobbles, olive-gray, cohesive, moderately plastic, calcareous (till)----	14	35
Pierre Formation:			
	Shale, siliceous, grayish-black to black, very slightly fractured, noncalcareous-----	25	60

156-060-31AAA  
 NDSWC 5984  
 (Log from Naplin, 1974, p. 29)

Altitude: 1503 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, clayey, grayish-black-----	1	1
	Clay, silty, moderately sandy, pebbly, dusky-yellow to moderate-yellowish-brown, slightly cohesive, plastic, oxidized (till)-----	11	12
	Clay, silty, slightly sandy, pebbly, occasional cobbles, olive-gray, cohesive, moderately plastic, calcareous (till)-----	13	25
Pierre Formation:			
	Shale, siliceous, grayish-black to black, brittle to moderately soft, noncalcareous, very slightly fractured-----	15	40

156-060-34ABA  
 USAF 27

Altitude: 1527 feet

Glacial drift:			
	Silt, clayey, sandy-----	1	1
	Clay, silty, sandy, gravelly, brown and gray-----	17	18
	Clay and silt, sandy, gravelly, gray-----	5	23
	Clay and fine sand, silty, gravelly, gray-----	5	28
	Clay, silty, sandy, gravelly, dark-gray-----	12	40
	Clay, silty, gravelly, dark-gray-----	22	62
Pierre Formation:			
	Shale, silty, dark-gray-----	68	130

156-060-35BAB  
 NDSWC 5994  
 (Log from Naplin, 1974, p. 29)

Altitude: 1535 feet

Glacial drift:			
	Topsoil, silty, clayey, pebbly, dark-brown-----	1	1
	Clay, silty, moderately sandy, pebbly, moderate-yellowish-brown, slightly cohesive, plastic, oxidized (till)-----	14	15
	Clay, silty, slightly sandy, pebbly, olive-gray, cohesive, moderately plastic, calcareous (till)-----	5	20
	Sand, fine- to coarse-grained, subrounded, fair sorting-----	2	22
Pierre Formation:			
	Shale, siliceous, grayish-black to black, noncalcareous, not fractured-----	18	40



156-061-06ADA  
USAF 46

Altitude: 1512 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Silt, sandy, black-----	2	2
	Clay, sandy, silty, gravelly, brown-----	22	24
	Clay, silty, sandy, gravelly, brownish-gray-----	7	31
	Clay, silty, sandy, gravelly, gray-----	11	42
	Clay, sandy, silty, gray-----	3	45
Pierre Formation:			
	Shale, partly silty, dark-gray, moderately fractured; highly fractured from 45 to 48 feet-----	85	130

156-061-06ADB  
USAF 2046

Altitude: 1514 feet

Glacial drift:			
	Clay, silty, sandy, light-brown-----	2	2
	Silt and clay, sandy, gravelly, brown-----	6	8
	Clay, silty, sandy, gravelly, brown and grayish-brown-----	19	27
	Clay, silty, sandy, gravelly, gray-----	24	51
Pierre Formation:			
	Shale, dark-gray, highly fractured-----	79	130

156-061-11AAA  
NDSWC 8031  
(Log from Naplin, 1974, p. 30)

Altitude: 1513 feet

Glacial drift:			
	Topsoil, silty, sandy, clayey, brownish-black-----	1	1
	Clay, silty, moderately sandy, pebbly, occasional cobbles and boulders, moderate-yellowish-brown, moderately cohesive, slightly plastic, oxidized (till)-----	25	26
	Clay, silty, slightly sandy, pebbly, a few cobbles and boulders, olive-gray, cohesive, moderately plastic, calcareous (till)-----	28	54
Pierre Formation:			
	Shale, siliceous, grayish-black to black, indurated, noncalcareous, not fractured-----	6	60

156-061-19AAA  
NDSWC 8765

Altitude: 1504 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	14	14
	Clay, slightly sandy, silty, pebbly, olive-gray-----	2	16
Pierre Formation:			
	Shale, grayish-black, siliceous, slightly fractured-----	24	40

156-061-23BBB  
NDSWC 8030  
(Log from Naplin, 1974, p. 30)

Altitude: 1516 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, sandy, gravelly, clayey, dark-brown-----	1	1
	Clay, silty, moderately sandy, pebbly, moderate-yellowish-brown, cohesive, slightly plastic, oxidized (till)-----	7	8
	Sand, silty, clayey, very fine to coarse-grained, subangular, well oxidized-----	7	15
	Clay, very silty, slightly sandy, pebbly, moderate-yellowish-brown, cohesive, slightly plastic, oxidized (till)-----	11	26
	Clay, silty, slightly sandy, a few thin sand lenses, boulders, cobbles, olive-gray, moderately cohesive, plastic, calcareous (till)-----	40	66
Pierre Formation:			
	Shale, siliceous, grayish-black to black, indurated, noncalcareous, not fractured-----	14	80

156-061-27CDC  
USAF 2034

Altitude: 1508 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, sandy, silty, brown-----	3	3
	Clay, silty, sandy, gravelly, brown-----	16	19
	Clay, silty, sandy, gravelly, brownish- gray-----	10	29
	Clay, silty, sandy, gravelly, gray-----	4	33
	Clay and shale, dark-gray; hard shale fragments in a very stiff to hard clay matrix-----	7	40
	Silt and shale, gray to dark-gray; hard shale fragments and very dense silt; occasional sand and gravel bed-----	18	58
Pierre Formation:			
	Shale, gray to dark-gray, highly to moderately fractured-----	72	130

156-061-27CDD  
USAF 34

Altitude: 1517 feet

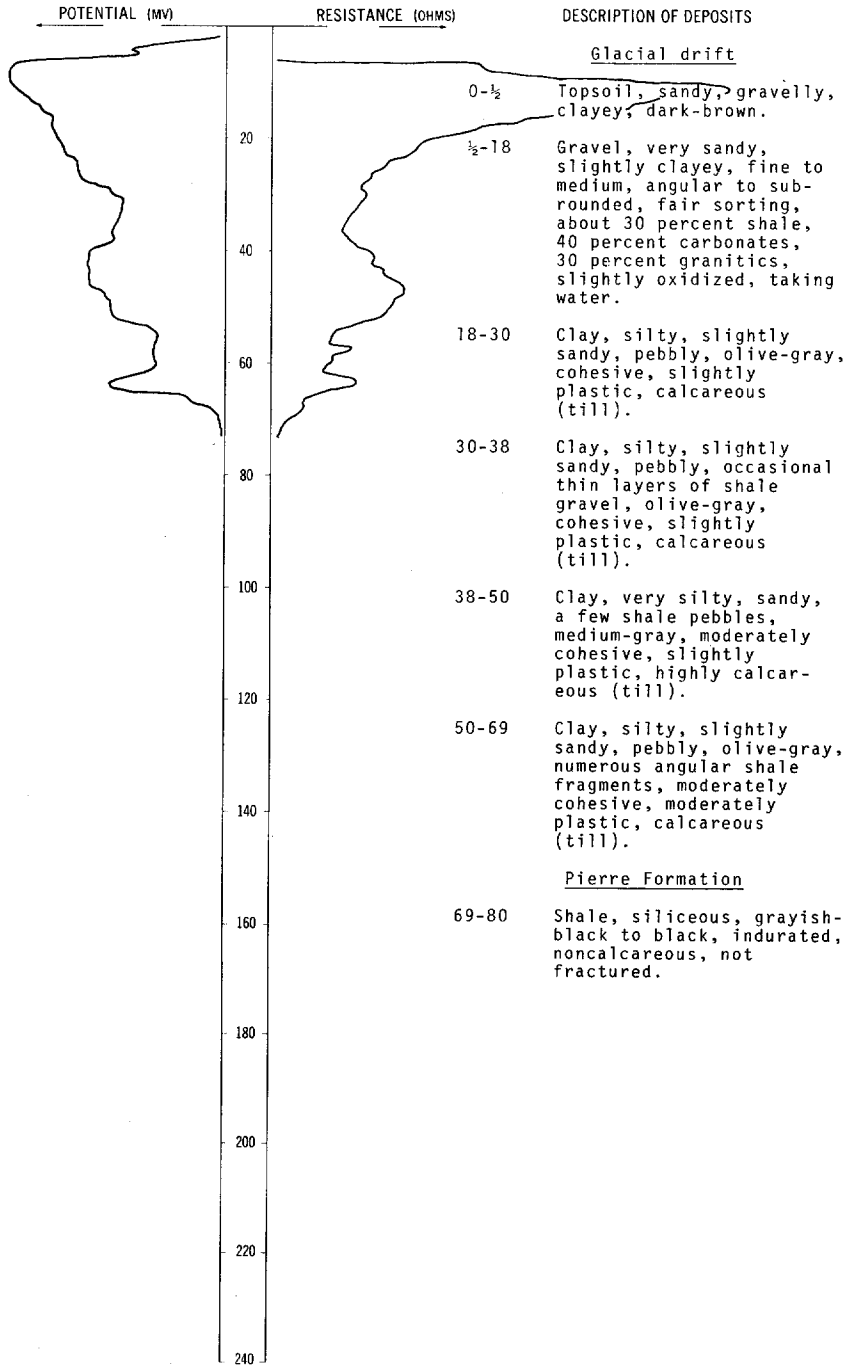
Glacial drift:			
	Silt, clayey, brown-----	2	2
	Sand, fine, silty, gravelly, brown-----	6	8
	Sand, coarse, and gravel, fine, silty, tan-----	6	14
	Clay, sandy, silty, gravelly, brown-----	18	32
	Clay, silty, gravelly, gray-----	6	38
Pierre Formation:			
	Shale and silt; angular fragments of hard dark-gray shale in a matrix of slightly weathered, grayish- brown, dense, clayey silt-----	4	42
	Shale, dark-gray, highly fractured-----	26	68
	Shale, partly silty, dark-gray, moderately fractured-----	62	130

LOCATION: 156-061-34AAA

DATE DRILLED: July 1971

ALTITUDE: 1507  
 (FT, MSL)

DEPTH: 80  
 (FT)

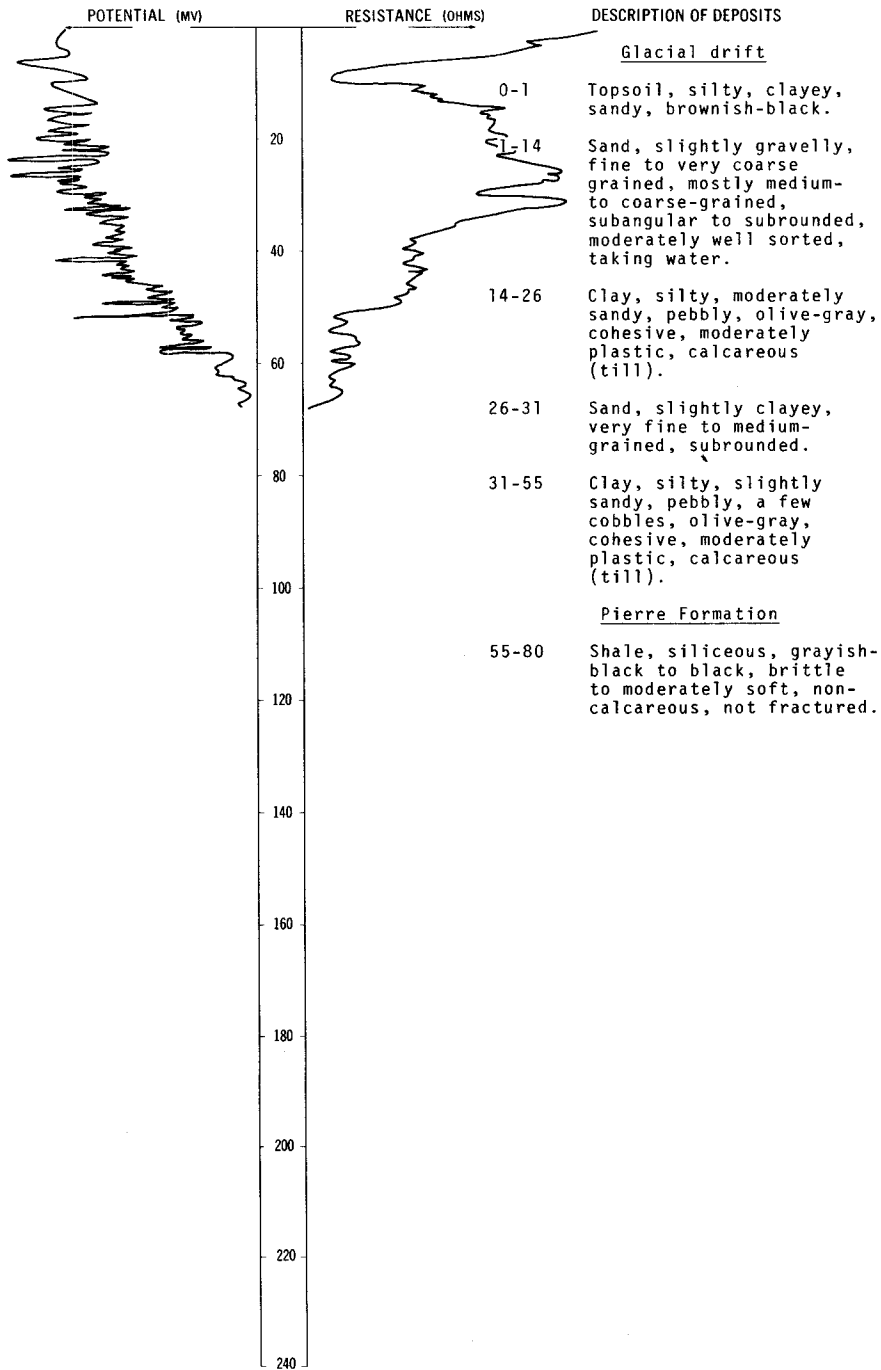


LOCATION: 156-061-35AAA1

DATE DRILLED: June 1971

ALTITUDE: 1502  
(FT, MSL)

DEPTH: 80  
(FT)



156-061-35ABB  
 NDSWC 5988  
 (Log from Naplin, 1974, p. 33)

Altitude: 1501 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, silty, clayey, pebbly, brownish-black-----	1	1
	Clay, silty, moderately sandy, pebbly, moderate-yellowish-brown, slightly cohesive, plastic, oxidized (till)-----	11	12
	Clay, silty, slightly sandy, pebbly, a few cobbles, olive-gray, cohesive, moderately plastic, calcareous (till)----	19	31
	Sand, slightly gravelly, very clayey, silty, fine- to coarse-grained, subrounded-----	6	37
	Clay, silty, slightly sandy, pebbly, olive-gray, cohesive, slightly plastic, calcareous (till)-----	11	48
Pierre Formation:			
	Shale, siliceous, grayish-black to black, noncalcareous, not fractured-----	12	60

156-061-36BAB  
 NDSWC 5989  
 (Log from Naplin, 1974, p. 33)

Altitude: 1502 feet

Glacial drift:			
	Topsoil, silty, clayey, pebbly, dark-brown-----	1	1
	Clay, silty, moderately sandy, pebbly, a few cobbles, moderate-yellowish-brown, moderately cohesive, slightly plastic, oxidized (till)-----	13	14
	Clay, silty, slightly sandy, pebbly, occasional cobbles, olive-gray, cohesive, moderately plastic, calcareous (till)-----	27	41
Pierre Formation:			
	Shale, siliceous, grayish-black to black, noncalcareous, very slightly fractured, brittle to moderately soft-----	19	60

156-061-36BBB  
 NDSWC 5986  
 (Log from Naplin, 1974, p. 34)

Altitude: 1505 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Topsoil, sandy, pebbly, silty, dark-brown-----	1	1
	Sand, slightly gravelly, slightly clayey, fine to very coarse grained, fair sorting, subangular to rounded, taking water-----	13	14
	Clay, very sandy, silty, olive-gray, slightly cohesive, slightly plastic, calcareous (glaciofluvial sediment)-----	6	20
	Sand, slightly gravelly, fine- to coarse-grained, subangular, fair sorting-----	2	22
	Clay, very sandy, silty, olive-gray, cohesive, slightly plastic, calcareous (glaciofluvial sediment)-----	2	24
	Sand, fine- to coarse-grained, subrounded-----	1	25
	Clay, very sandy, silty, medium-gray, cohesive, slightly plastic, calcareous (glaciofluvial sediment)-----	2	27
	Sand, fine- to medium-grained, subrounded-----	1	28
	Clay, silty, moderately sandy, pebbly, olive-gray, cohesive, moderately plastic, calcareous (till)-----	7	35
	Sand, clayey, fine- to coarse-grained, subrounded-----	2	37
	Clay, silty, very sandy, pebbly, cobbles, olive-gray, cohesive, slightly plastic, calcareous (till)-----	18	55
Pierre Formation:			
	Shale, siliceous, grayish-black to black, brittle to moderately soft, noncalcareous, very slightly fractured-----	25	80

156-061-36DDD  
 NDSWC 5999  
 (Log from Naplin, 1974, p. 35)

Altitude: 1501 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Road fill, silty, clayey, brownish-black-----	3	3
	Clay, very silty, moderate-yellowish-brown, slightly cohesive, plastic, laminated, oxidized (glaciofluvial sediment)-----	12	15
	Clay, very silty, olive-gray, slightly cohesive, plastic, laminated (glaciofluvial sediment)-----	8	23
	Clay, silty, slightly sandy, pebbly, olive-gray, cohesive, plastic, calcareous (till)-----	11	34
Pierre Formation:			
	Shale, siliceous, grayish-black to black, brittle to moderately soft, noncalcareous, not fractured-----	6	40

156-062-10AAA  
 NDSWC 8766

Altitude: 1498 feet

Glacial drift:			
	Loam, silty, clayey, black-----	1	1
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	13	14
	Clay, slightly sandy, silty, pebbly, olive-gray (till)-----	4	18
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	22	40



156-062-20BBB  
NDSWC 8791

Altitude: 1495 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, clayey, silty, grayish-black (topsoil)-----	1	1
	Sand, fine to medium, light-brown, oxidized-----	4	5
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	17	22
	Clay, silty, slightly sandy, pebbly, olive-gray (till)-----	5	27
	Boulder, granite-----	.5	27.5
	Clay, sandy, gravelly, olive-gray, calcareous (till)-----	1.5	29
	Sand, fine to very coarse-----	4	33
	Clay, moderately silty, sandy, pebbly, olive-gray, calcareous (till)-----	2	35
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured, brittle-----	25	60

156-062-27DCB  
USAF 2035

Altitude: 1498 feet

Glacial drift:			
	Clay, silty, black-----	3	3
	Clay, silty, sandy, gravelly, brown-----	18	21
	Clay, silty, sandy, gravelly, gray-----	3	24
	Silt, clayey, sandy, gravelly, gray-----	4	28
	Clay, silty, sandy, gravelly, gray-----	6	34
	Sand, fine to medium, clayey, gray-----	4	38
	Clay, silty, sandy, gravelly, gray-----	2	40
	Clay and silt, sandy, gravelly, gray-----	7	47
Pierre Formation:			
	Shale, dark-gray, highly fractured; moderately hard to hard fragments in a silty crushed shale matrix-----	13	60
	Shale, dark-gray, slightly to moderately fractured-----	70	130

156-062-27DCC  
 USAF 35

Altitude: 1502 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, sandy, silty, dark-brown to tan-----	3	3
	Silt and clay, sandy, gravelly, brown-----	5	8
	Clay, sandy, silty, gravelly, partly sandy, brown-----	16	24
	Clay, sandy, silty, gravelly, gray-----	4	28
	Sand, fine, silty, clayey, gravelly, gray-----	8	36
	Silt, clayey, sandy, gravelly, gray-----	11	47
Pierre Formation:			
	Shale, partly silty, dark-gray, moderately fractured-----	83	130

156-063-01CCC  
 NDSWC 9060

Altitude: 1494 feet

Glacial drift:			
	Loam, clayey, silty, sandy, black (topsoil)-----	1	1
	Clay, silty, sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	23	24
	Clay, silty, sandy, pebbly, dark-gray; contains a few thin sand and gravel lenses (till)-----	10	34
Pierre Formation:			
	Shale, dark-gray, siliceous, fractured, hard, brittle-----	26	60

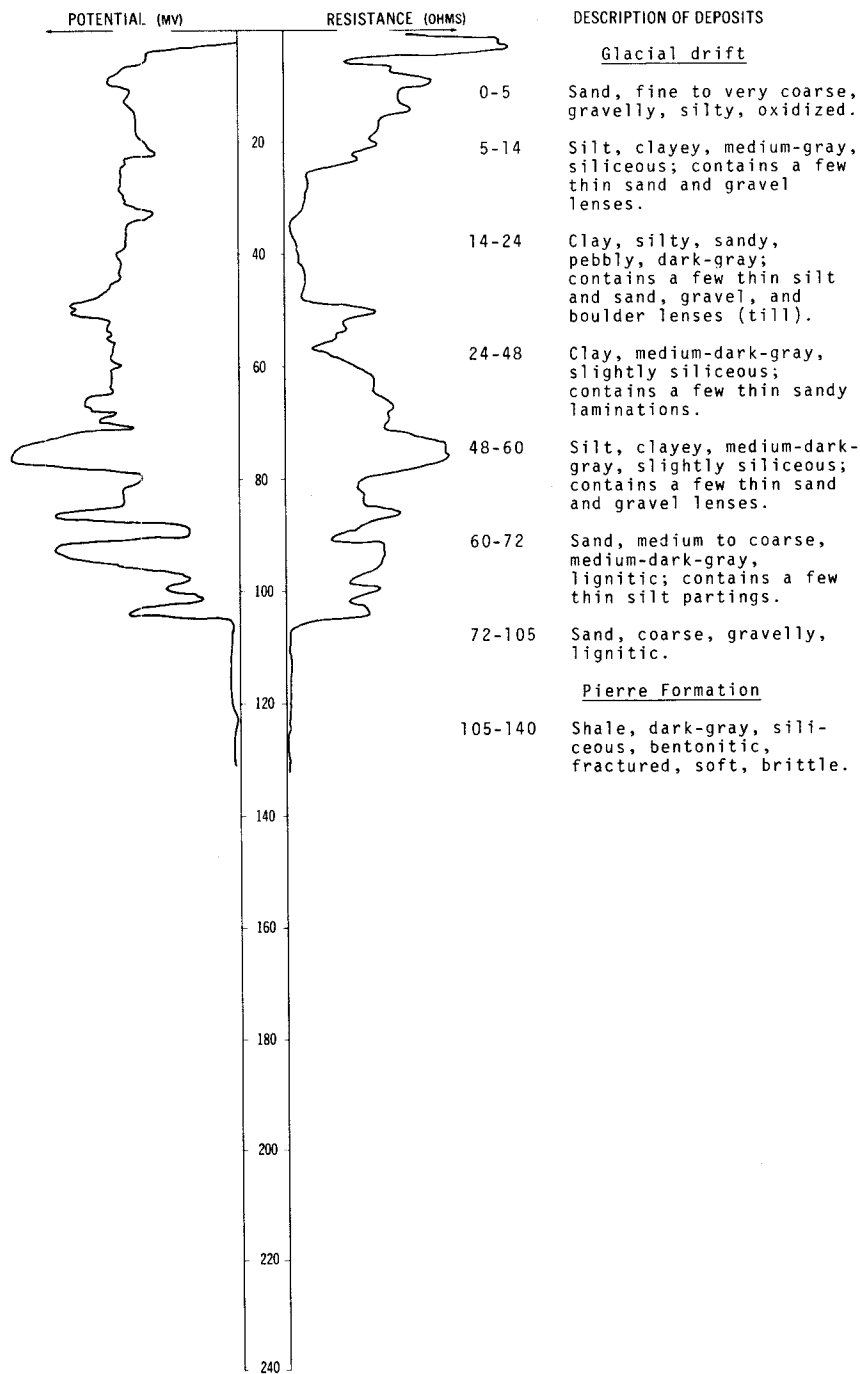
NDSWC 9058

LOCATION: 156-063-10CDD

DATE DRILLED: August 1974

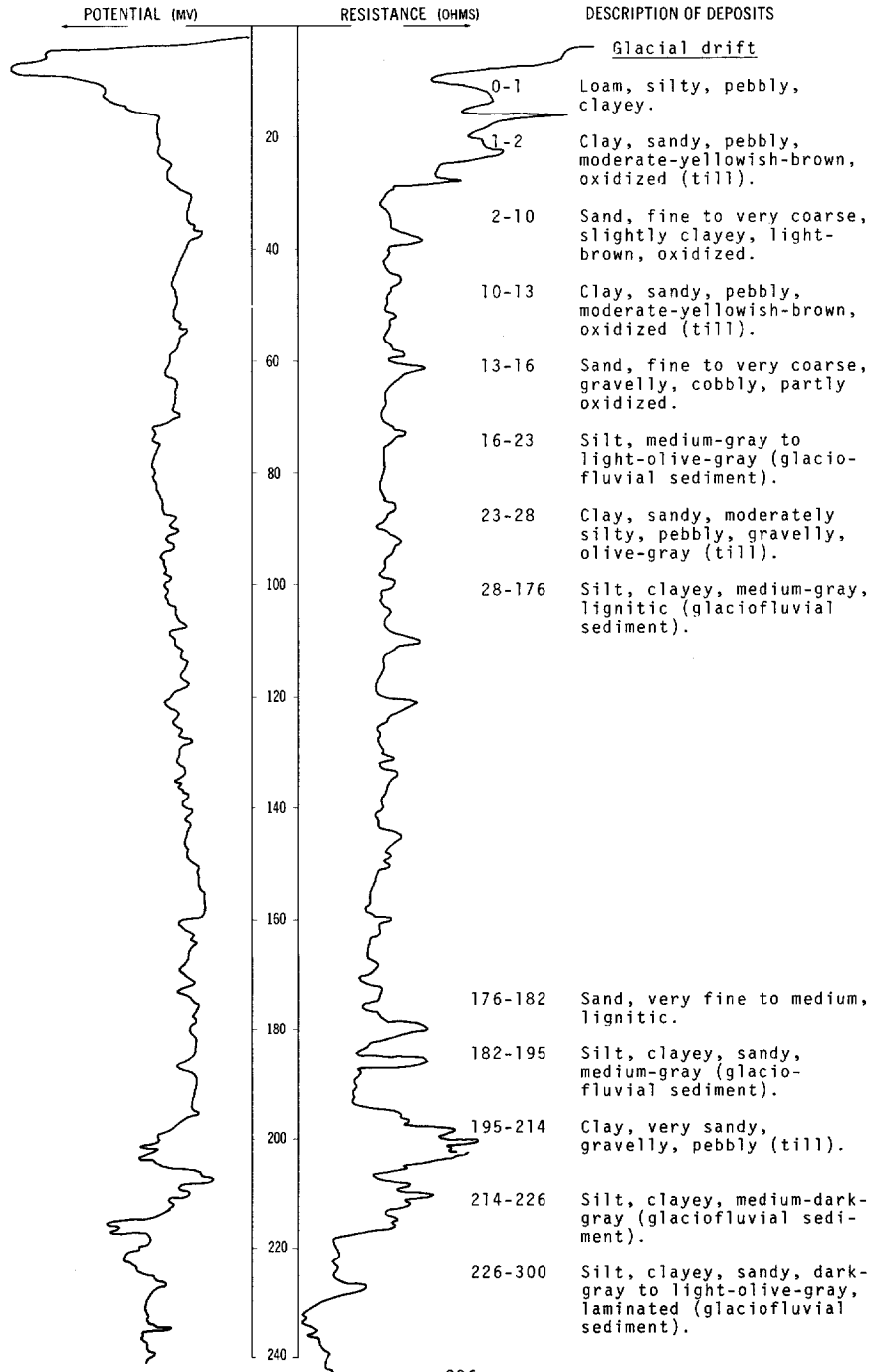
ALTITUDE: 1482  
(FT, MSL)

DEPTH: 140  
(FT)



LOCATION: 156-063-10DD02  
 ALTITUDE: 1485  
 (FT, MSL)

DATE DRILLED: July 1973  
 DEPTH: 400  
 (FT)



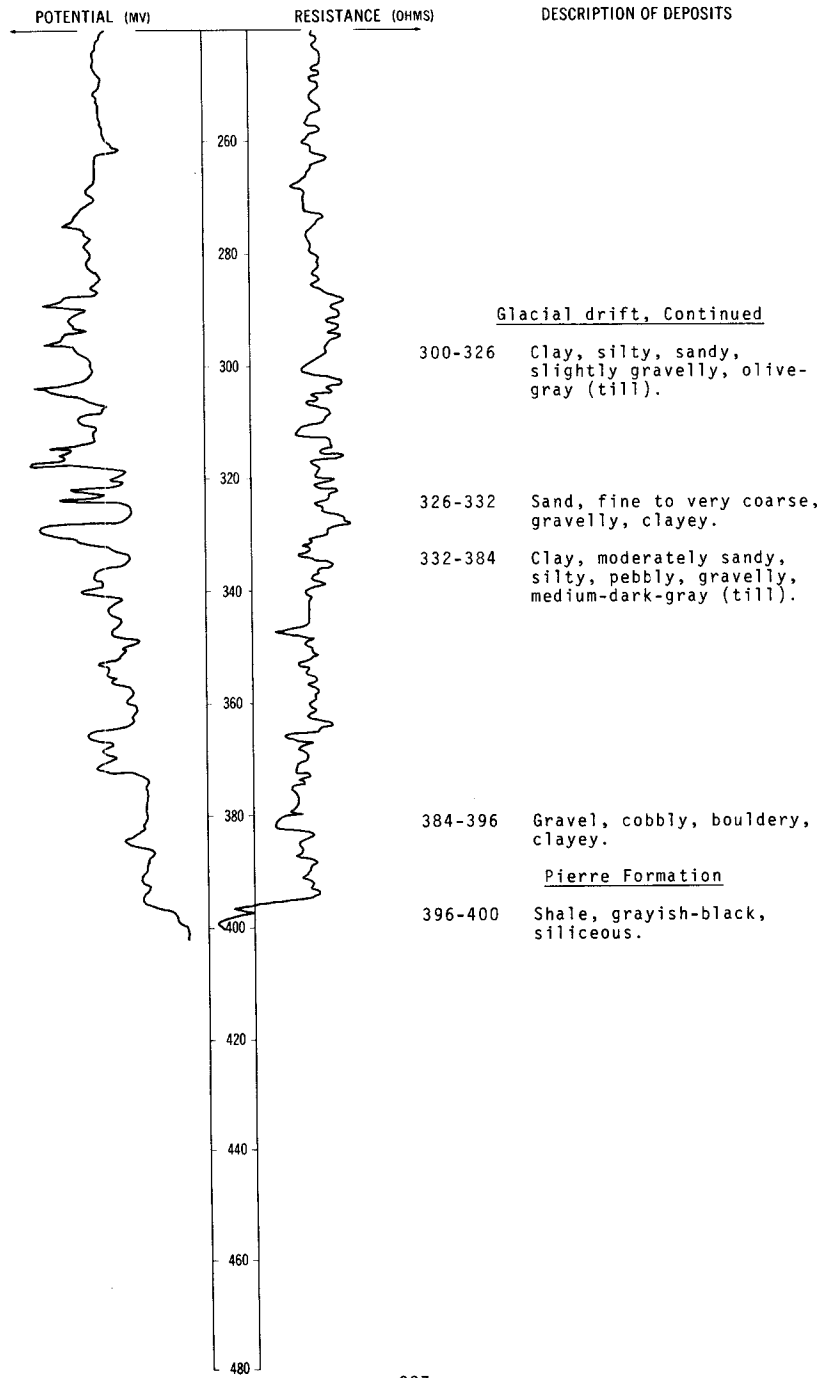
NDSWC 8790, Continued

LOCATION: 156-063-10DDD2

DATE DRILLED: July 1973

ALTITUDE: 1485  
(FT, MSL)

DEPTH: 400  
(FT)



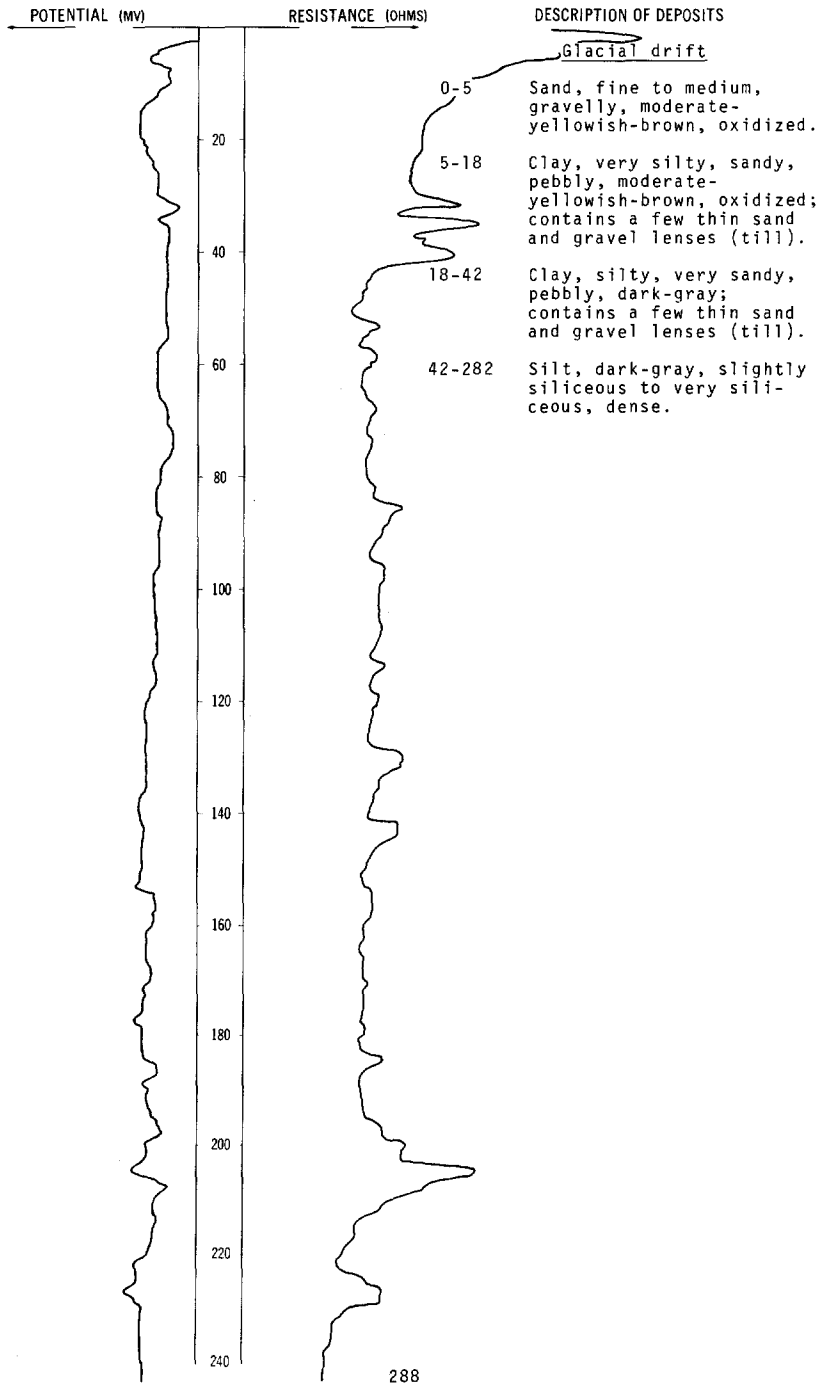
NDSWC 9059

LOCATION: 156-063-11CDD

DATE DRILLED: August 1974

ALTITUDE: 1496  
(FT, MSL)

DEPTH: 580  
(FT)



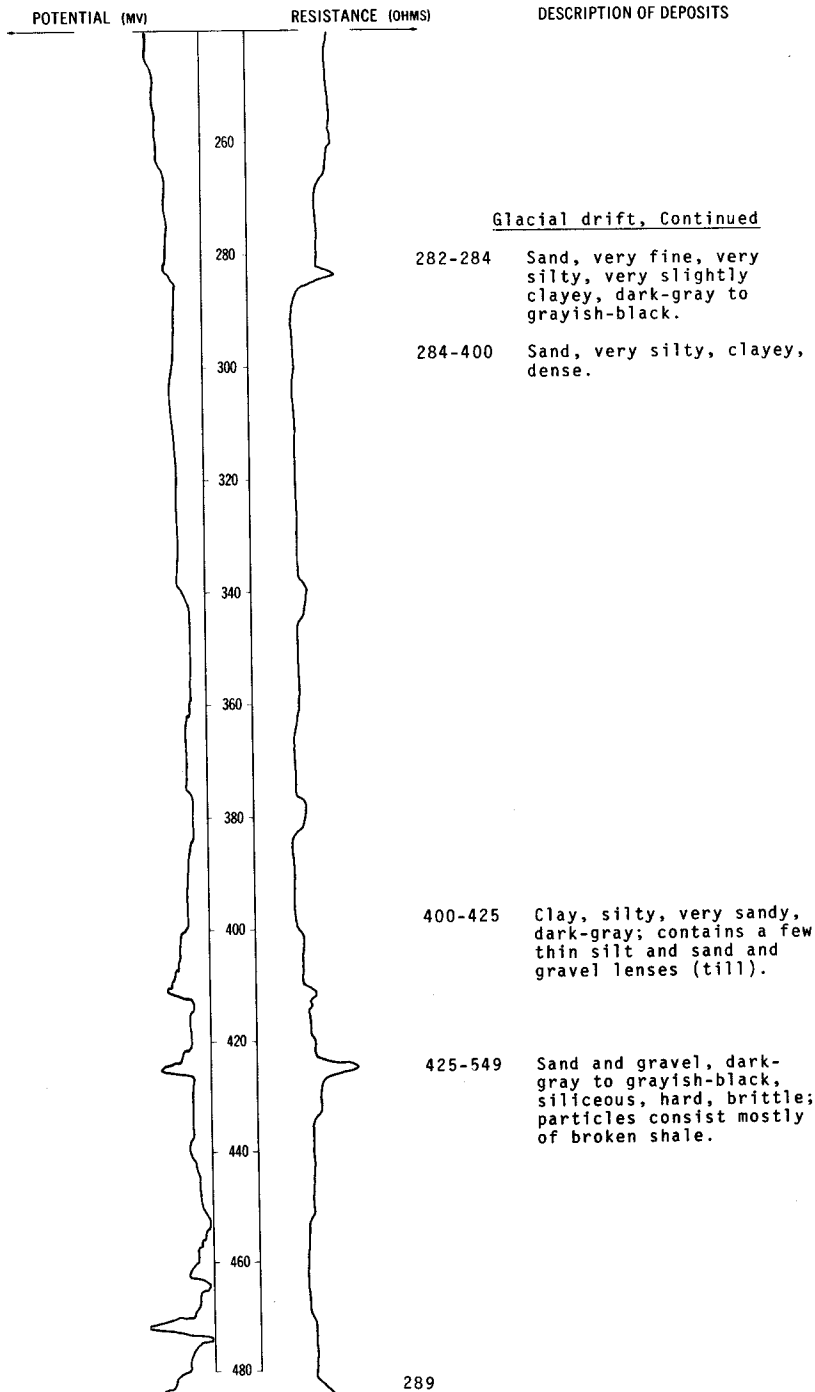
NDSWC 9059, Continued

LOCATION: 156-063-11CDD

DATE DRILLED: August 1974

ALTITUDE: 1496  
(FT, MSL)

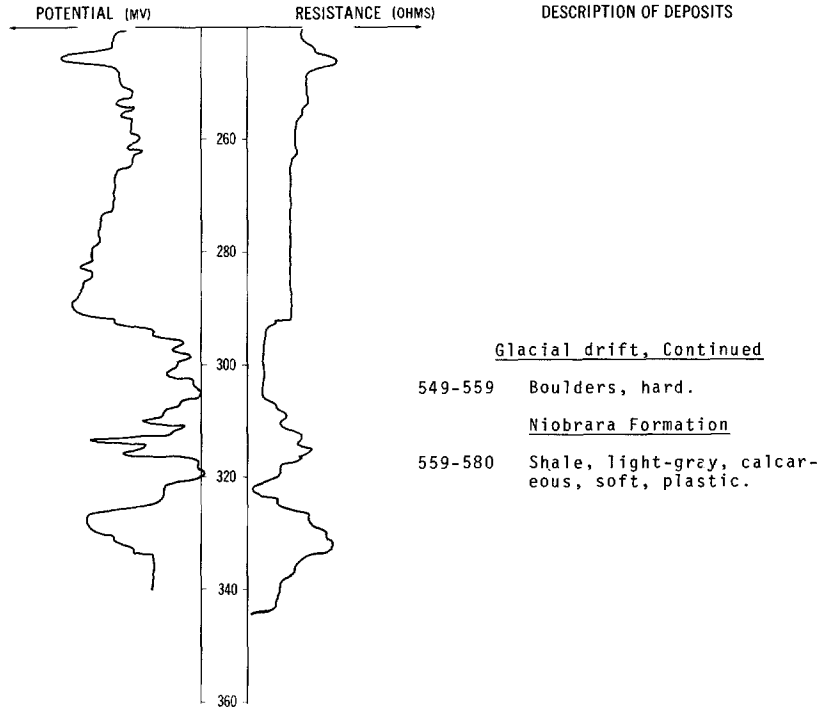
DEPTH: 580  
(FT)



NDSWC 9059, Continued

LOCATION: 156-063-11CDD  
 ALTITUDE: 1496  
 (FT, MSL)

DATE DRILLED: August 1974  
 DEPTH: 580  
 (FT)



156-063-13AAB  
 USAF 45

Altitude: 1492 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, silty, black-----	2	2
	Clay, sandy, silty, gravelly, brown-----	7	9
	Sand, fine, clayey, silty, gravelly, brown-----	5	14
	Clay, sandy, silty, gravelly, brownish-gray-----	10	24
	Shale and silt; angular shale fragments in matrix of soft to very stiff clayey silt-----	17	41
Pierre Formation:			
	Shale, partly silty, dark-gray; highly fractured from 41 to 77 and moderately fractured from 77 to 130 feet-----	89	130



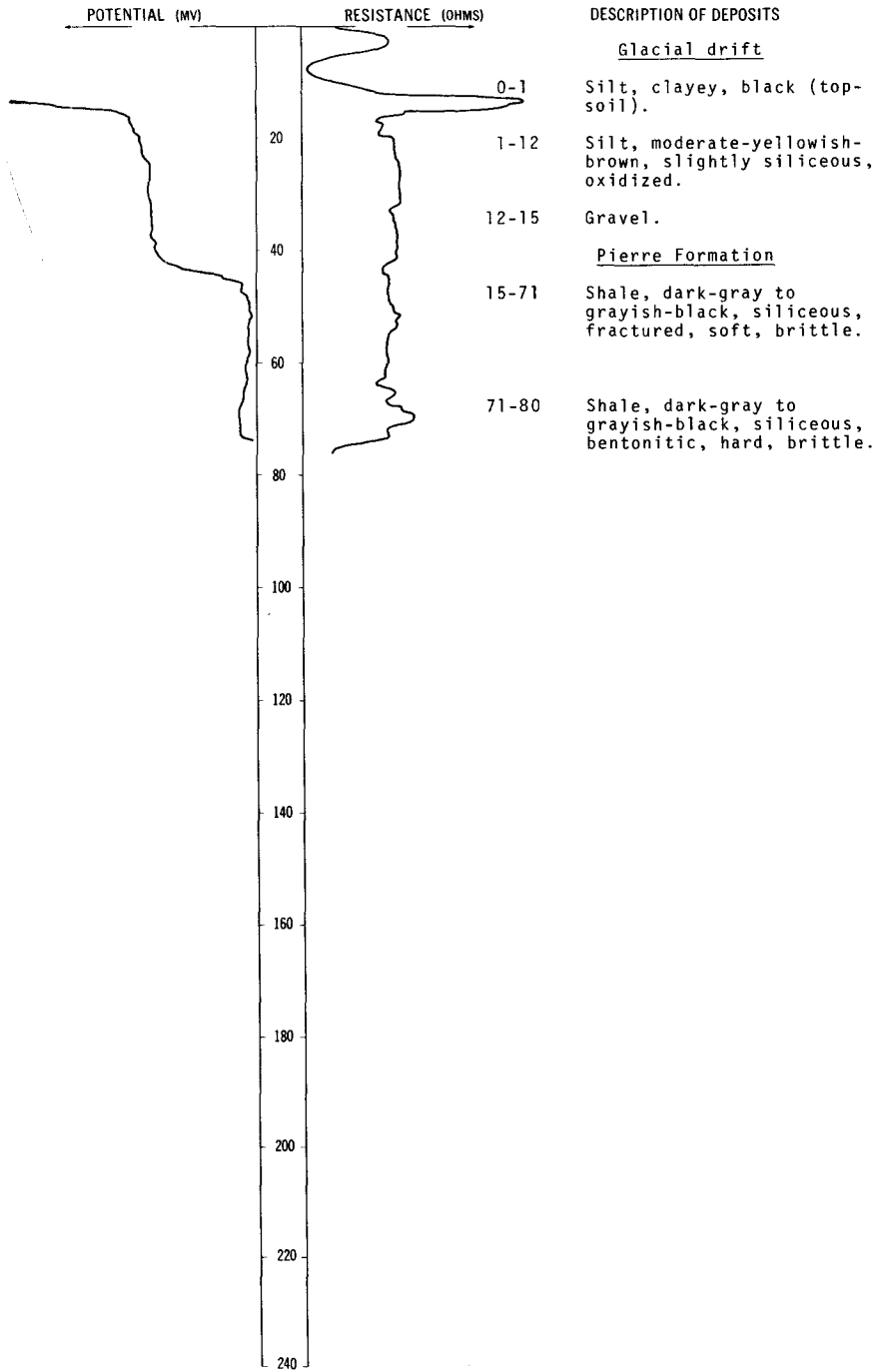
NDSWC 9057

LOCATION: 156-063-21AAA

DATE DRILLED: August 1974

ALTITUDE: 1480  
(FT. MSL)

DEPTH: 80  
(FT)



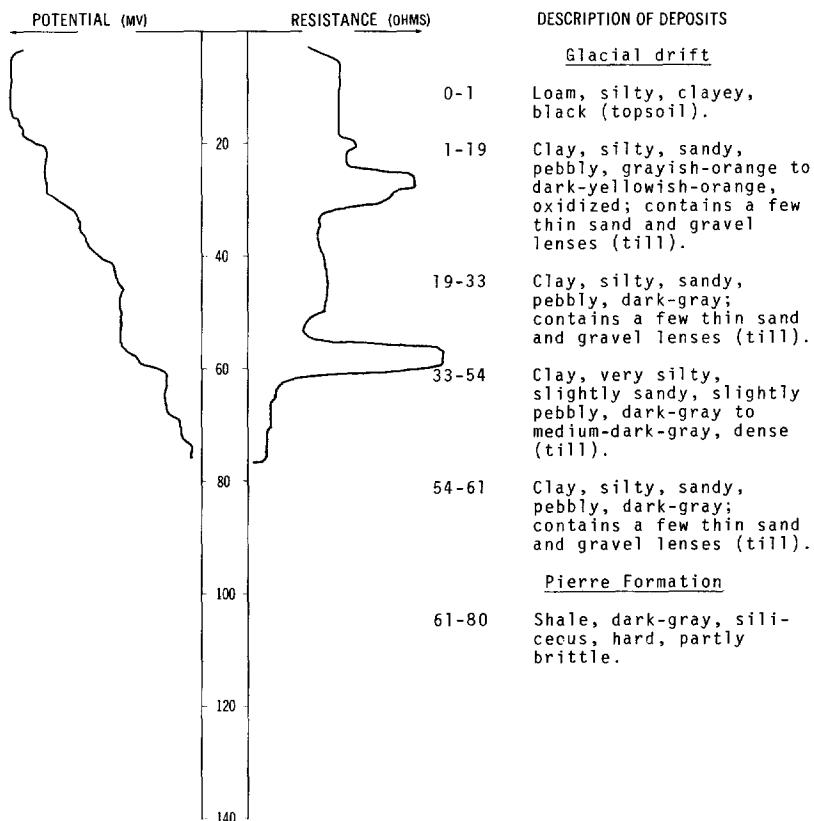
NDSWC 9056

LOCATION: 156-063-28BBB

DATE DRILLED: August 1974

ALTITUDE: 1480  
(FT, MSL)

DEPTH: 80  
(FT)



156-063-29CCC  
NDSWC 8821

Altitude: 1471 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Loam, silty, clayey, grayish-black-----	1	1
	Silt, clayey, sandy, dusky-yellow, oxidized (glaciofluvial sediment)-----	6	7
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	7	14
	Clay, slightly sandy, pebbly, medium-dark-gray (till)-----	4	18
	Gravel, fine to coarse, sandy-----	8	26
	Clay, very sandy, pebbly, gravelly, olive-gray (till)-----	17	43
Pierre Formation:			
	Shale, grayish-black, siliceous-----	17	60

156-064-02DCC  
(Log modified from Holbeck Well Service)

Altitude: 1475 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Soil, black-----	1	1
	Clay, yellow-----	51	52
Pierre Formation:			
	Shale, blue-----	32	84

156-064-118BB  
NDSWC 8786

Altitude: 1484 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Loam, silty, pebbly, clayey, black-----	1	1
	Clay, moderately sandy and silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	23	24
	Clay, slightly sandy, pebbly, olive-gray (till)-----	11	35
	Clay, sandy, gravelly, pebbly, olive-gray (till)-----	5	40
Pierre Formation:			
	Shale, grayish-black, siliceous-----	20	60

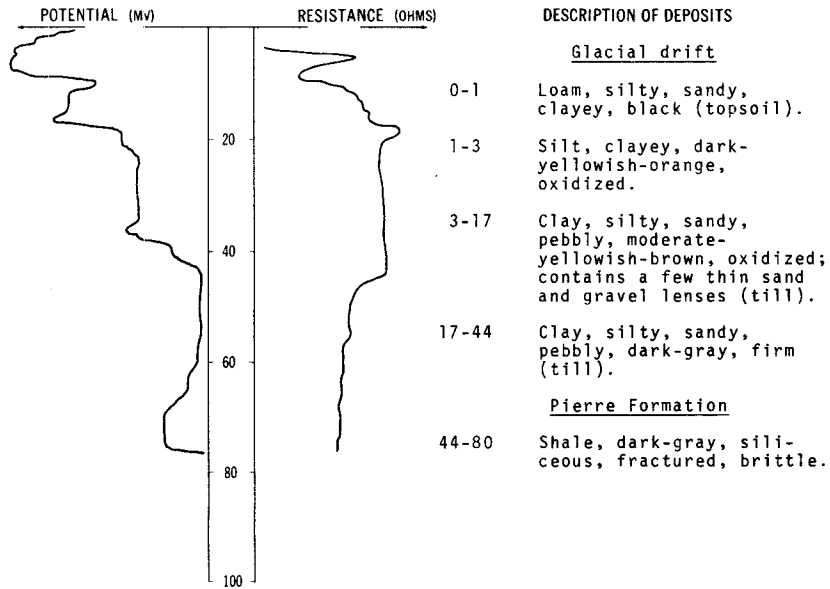
NDSWC 9054

LOCATION: 156-064-27DAD

DATE DRILLED: August 1974

ALTITUDE: 1467  
(FT, MSL)

DEPTH: 80  
(FT)

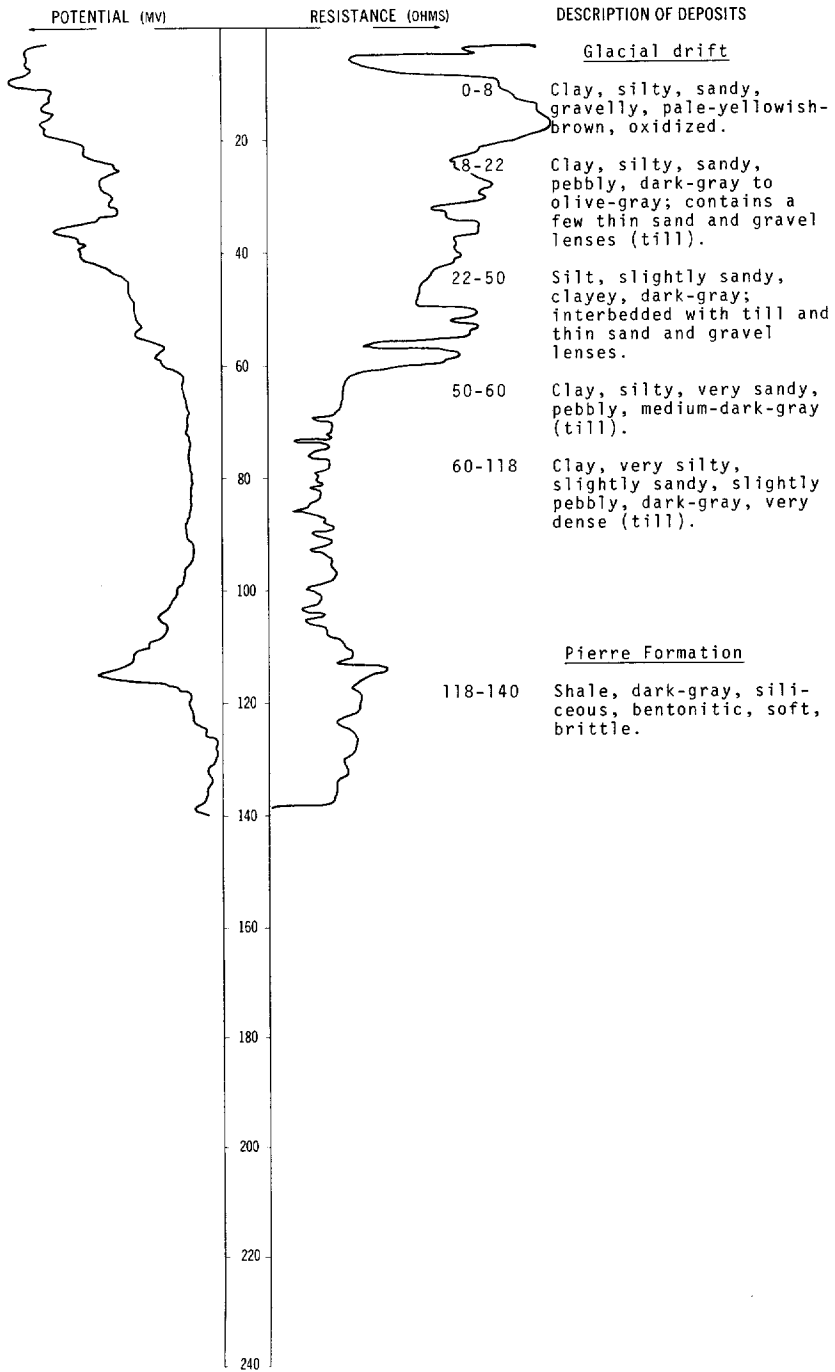


LOCATION: 156-064-30BBB

DATE DRILLED: August 1974

ALTITUDE: 1464  
(FT, MSL)

DEPTH: 140  
(FT)



156-064-30DDD  
NDSWC 8822

Altitude: 1480 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Loam, sandy, pebbly, grayish-black-----	1	1
	Sand, fine to very coarse, clayey, light-brown, oxidized-----	6	7
	Clay, moderately sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	6	13
	Gravel, fine to coarse, sandy, oxidized----	17	30
Pierre Formation:			
	Shale, grayish-black, very slightly fractured-----	10	40

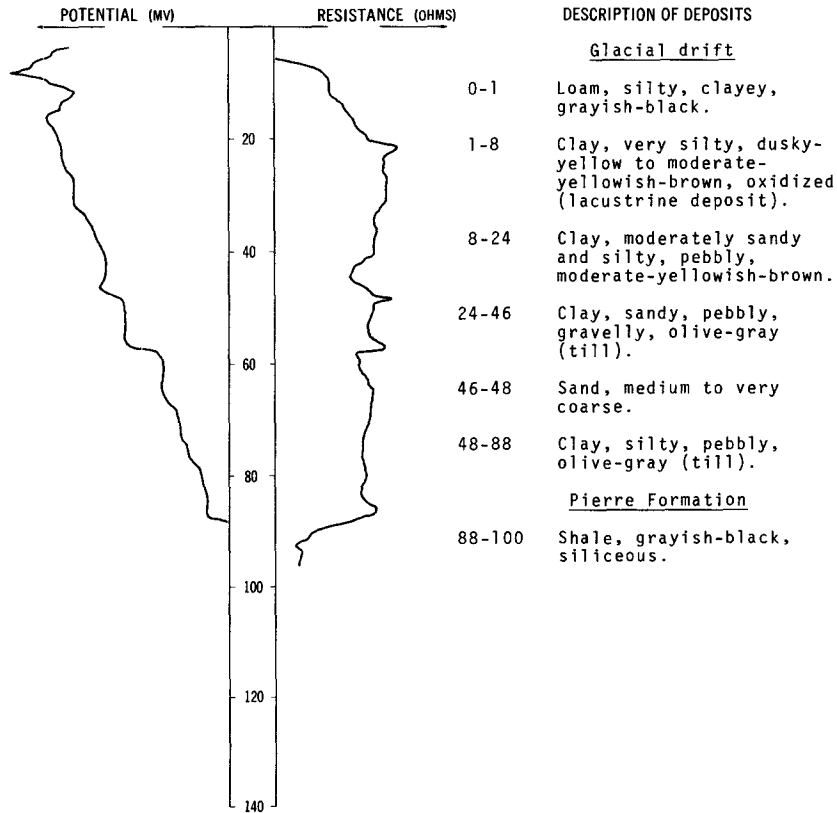
NDSWC 8785

LOCATION: 156-065-02CCC

DATE DRILLED: July 1973

ALTITUDE: 1451  
(FT, MSL)

DEPTH: 100  
(FT)



156-065-10BCC  
(Log modified from Peterson Well Co.)

Altitude: 1461 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Dirt, black-----	1	1
	Clay, yellow-----	17	18
	Clay; shale, soft-----	62	80
Pierre Formation:			
	Shale-----	17	97

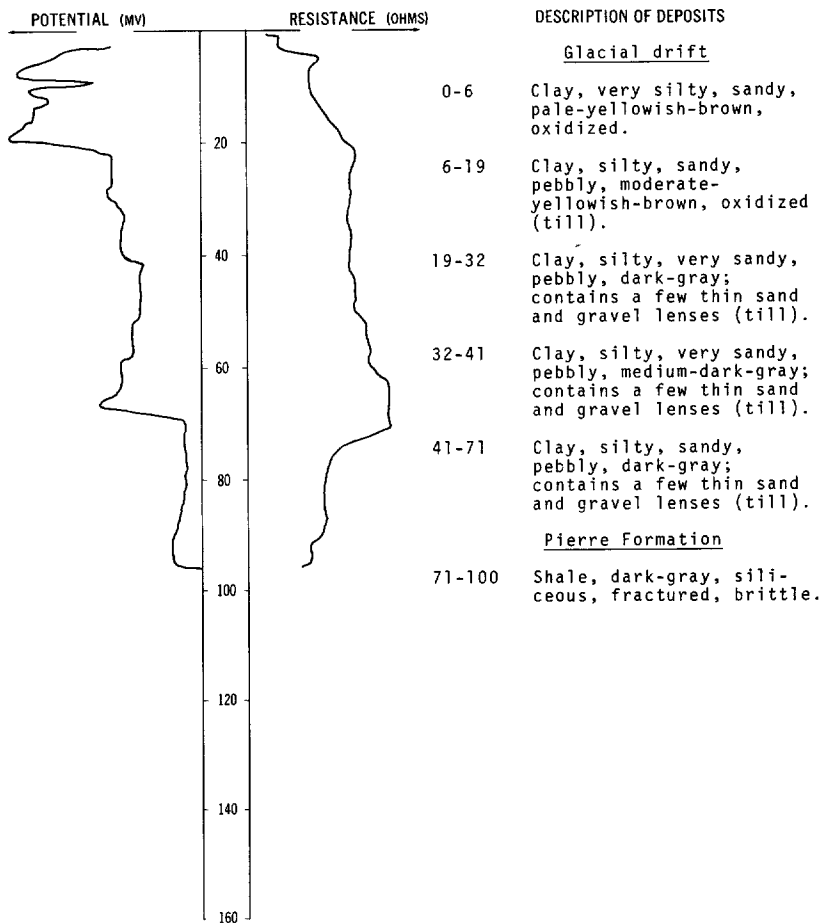
NDSWC 9041

LOCATION: 156-065-15DDD

DATE DRILLED: August 1974

ALTITUDE: 1454  
(Ft, MSL)

DEPTH: 100  
(Ft)



156-065-17CCB  
NDSWC 8824

Altitude: 1456 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Loam, silty, clayey, grayish-black-----	1	1
	Clay, moderately sandy, pebbly, silty, moderate-yellowish-brown to dusky-yellow, oxidized (till)-----	21	22
	Clay, slightly sandy, pebbly, olive-gray (till)-----	18	40
	Gravel, fine to medium-----	12	52
	Clay, very sandy, pebbly, cobbly, light-olive-gray (till)-----	17	69
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle---	11	80

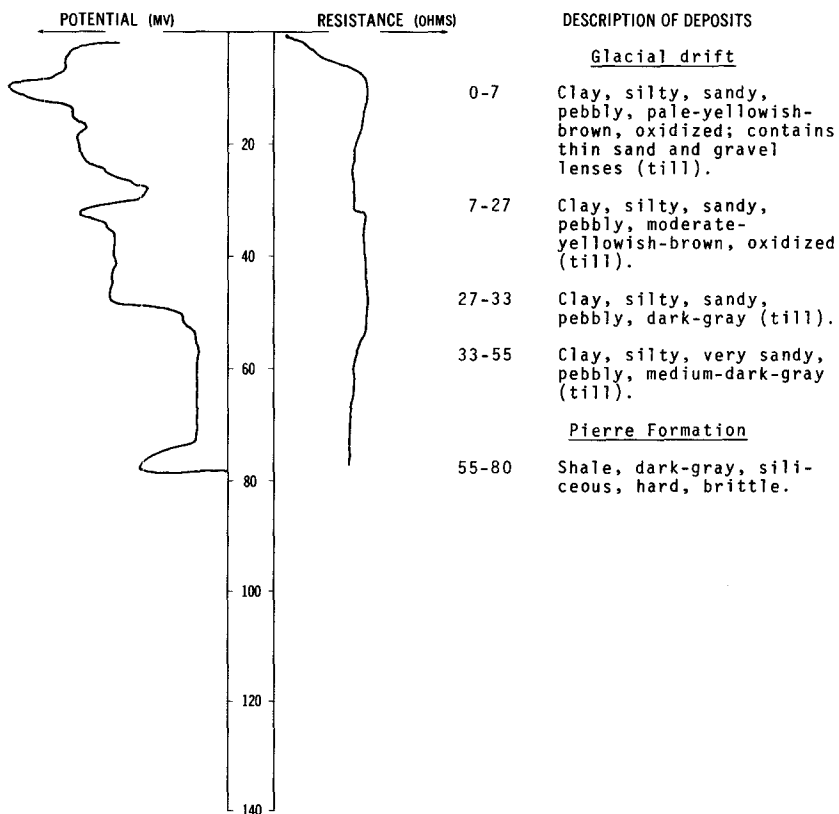
NDSWC 9039

LOCATION: 156-065-21ABB

DATE DRILLED: August 1974

ALTITUDE: 1450  
(FT, MSL)

DEPTH: 80  
(FT)



156-065-22DDD  
NDSWC 8823

Altitude: 1453 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, silty, pebbly, black (topsoil)-----	1	1
	Silt, very clayey, moderate-yellowish-brown, oxidized; laminated dark gray (glaciofluvial sediment)-----	11	12
	Clay, silty, slightly sandy, pebbly, olive-gray, calcareous (till)-----	9	21
	Clay, sandy, pebbly, gravelly, olive-gray, calcareous (till)-----	5	26
	Gravel, medium to coarse-----	2	28
	Clay, moderately sandy, pebbly, slightly gravelly, olive-gray, calcareous (till)-----	12	40
	Gravel, fine to medium, sandy; consists of about 80 percent shale particles-----	29	69
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	36	105
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle---	15	120

156-065-26AAC1  
(Log from Peterson Well Co.)

Altitude: 1458 feet

Glacial drift:			
	Dirt, black-----	1	1
	Clay, yellow-----	17	18
	Clay, sticky, blue-----	32	50
Pierre Formation:			
	Shale, soft-----	50	100

156-065-26AAC2  
(Log from Peterson Well Co.)

Altitude: 1459 feet

Glacial drift:			
	Dirt, black-----	1	1
	Clay, sandy, yellow-----	19	20
	Clay, sandy, blue-----	10	30
Pierre Formation:			
	Shale, soft-----	30	60



156-065-26ABD  
(Log modified from Peterson Well Co.)

Altitude: 1456 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Dirt, black-----	1	1
	Sand, clayey-----	11	12
	Clay, sandy-----	6	18
	Clay, blue; rock at bottom-----	1	19

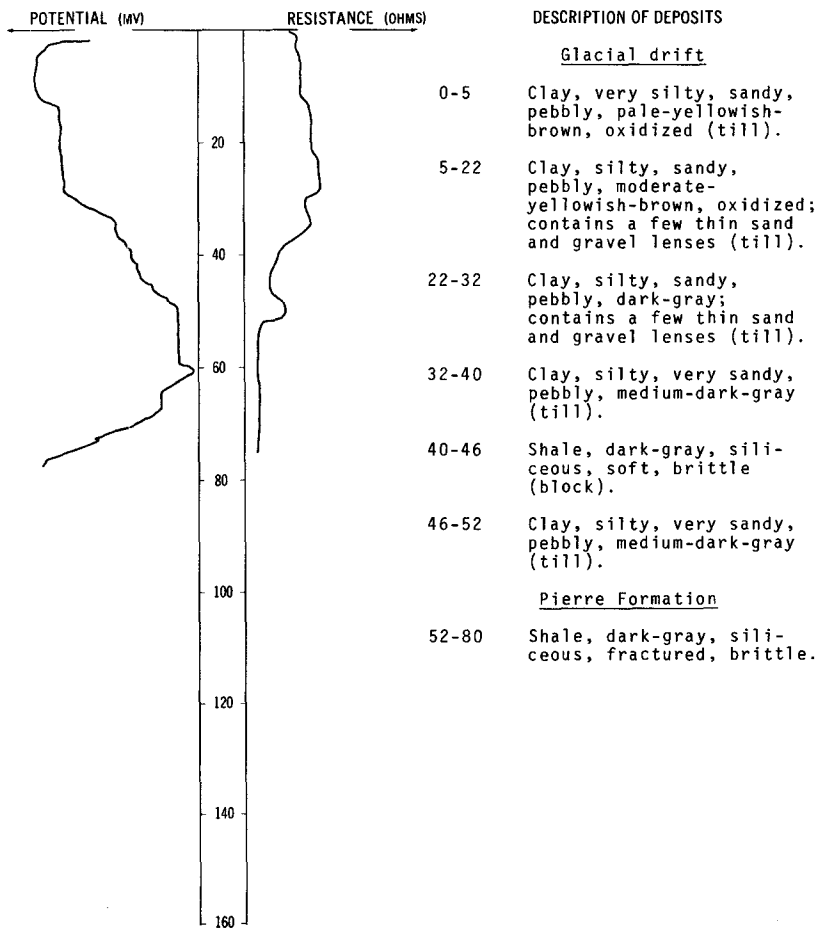
NDSWC 9040

LOCATION: 156-065-28ADA

DATE DRILLED: August 1974

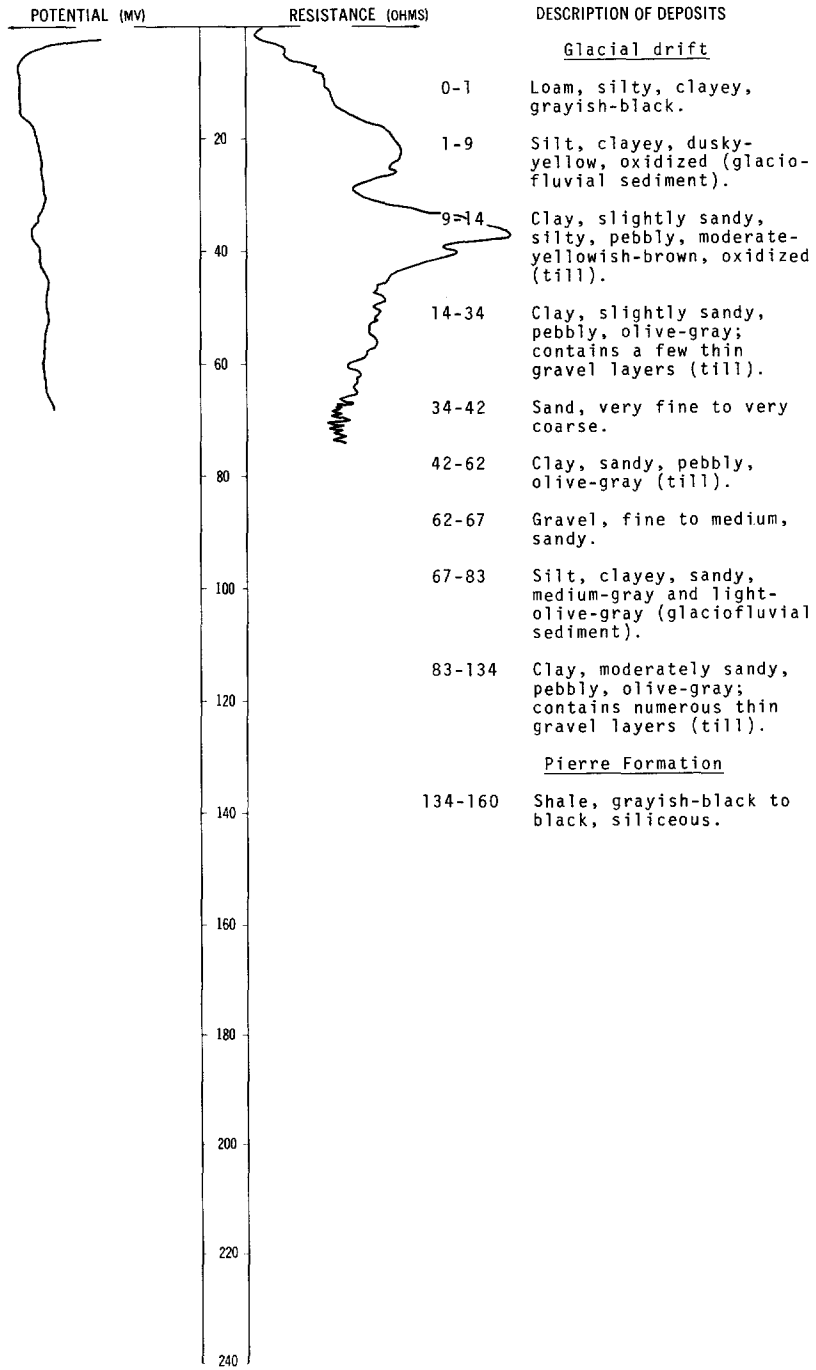
ALTITUDE: 1462  
(Ft, MSL)

DEPTH: 80  
(Ft)



LOCATION: 156-066-08DDC  
 ALTITUDE: 1445  
 (FT. MSL)

DATE DRILLED: August 1973  
 DEPTH: 160  
 (FT)



156-066-128BC  
NDSWC 8826

Altitude: 1447 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Road fill-----	6	6
	Clay, moderately sandy and silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	10	16
	Clay, slightly sandy, pebbly, olive-gray (till)-----	7	23
	Sand, fine to coarse, gravelly; contains a few thin clay layers-----	23	46
	Clay, very sandy, gravelly, light-olive-gray; contains numerous thin layers of gravel (till)-----	14	60
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	20	80

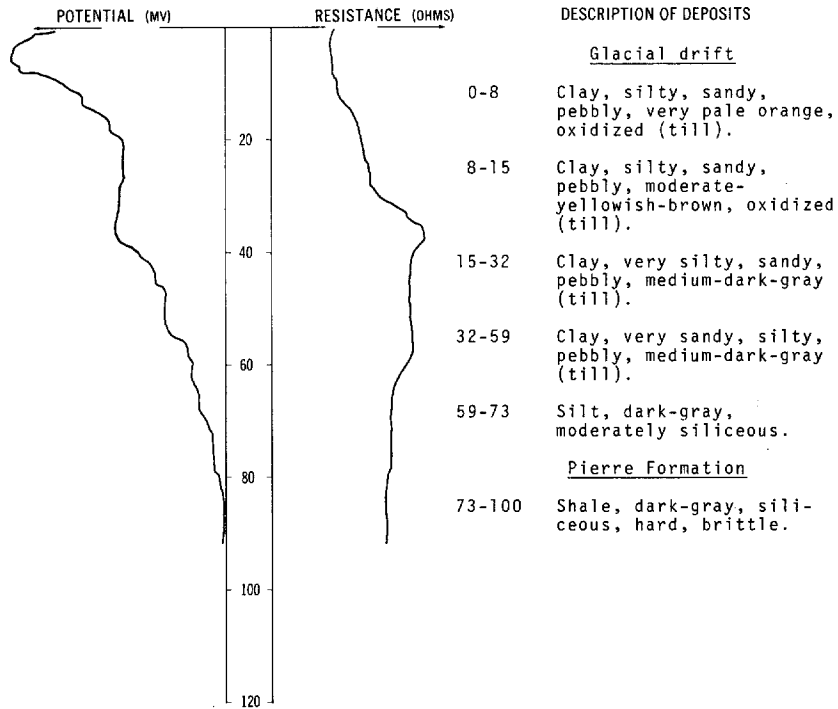
156-066-12CCC  
NDSWC 8825

Altitude: 1449 feet

Glacial drift			
	Silt, very clayey, dusky-yellow, oxidized; laminated light olive gray (glaciolacustrine sediment)-----	11	11
	Clay, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	3	14
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	24	38
	Sand, fine to very coarse, gravelly, consists of about 30 percent shale particles; contains an occasional thin clay lens-----	22	60
	Clay, very sandy, gravelly, light-olive-gray, calcareous (till)-----	8	68
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle---	12	80

LOCATION: 156-066-23DDD  
 ALTITUDE: 1445  
 (FT, MSL)

DATE DRILLED: August 1974  
 DEPTH: 100  
 (FT)



156-066-30BBB  
 Test hole 344

(Log modified from Paulson and Akin, 1964, p. 155)

Altitude: 1455 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
<u>Glacial drift:</u>			
	Topsoil, black-----	½	½
	Silt and sand, light-brown-----	2½	3
	Till, gray-brown-----	5	8
	Till, gray-----	15	23
	Sand, gray, medium, very clayey-----	4	27
	Till, gray, gravelly-----	9	36
	Sand, coarse, and gravel, fine, gray, very clayey-----	4	40
	Till, gray-----	50	90
	Sand, coarse to very coarse, and gravel, fine, gray, about one-half detrital shale, very clayey-----	24	114
<u>Pierre Formation:</u>			
	Shale, gray-----	11	125

156-066-31CCA2  
(Log from C. A. Simpson and Son)

Altitude: 1460 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil-----	1	1
	Clay, yellow-----	17	18
	Clay, blue-----	47	65
	Clay, sandy-----	34	99
Pierre Formation:			
	Shale-----	111	210

156-066-31CCA3  
(Log from C. A. Simpson and Son)

Altitude: 1460 feet

Glacial drift:			
	Topsoil-----	1	1
	Clay, yellow-----	14	15
	Clay, blue-----	45	60
	Clay, sandy, blue-----	5	65
	Clay, blue-----	40	105
Pierre Formation:			
	Shale, blue-----	31	136

156-066-31DDD  
NDSWC 8828

Altitude: 1447 feet

Glacial drift:			
	Loam, clayey, silty, grayish-black (topsoil)-----	1	1
	Sand, very fine to fine, silty, slightly clayey, yellowish-brown, oxidized-----	7	8
	Silt, sandy, dusky-yellow, oxidized (glaciolacustrine sediment)-----	2	10
	Silt, clayey, sandy, medium-gray, highly calcareous (glaciolacustrine sediment)-----	4	14
	Sand, fine to very coarse-----	8	22
	Clay, sandy, pebbly, olive-gray, calcareous (till)-----	19	41
	Sand, very fine to fine, silty-----	7	48
	Clay, very sandy, pebbly, cobbly, olive-gray, calcareous (till)-----	28	76
	Sand, very fine to medium; contains a few thin clay layers-----	10	86
	Sand, fine to very coarse, lignitic-----	23	109
Pierre Formation:			
	Shale, grayish-black to black, siliceous, bentonitic, fractured, brittle-----	31	140

156-066-34BBB  
NDSWC 8827

Altitude: 1443 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, clayey, silty, grayish-black (topsoil)-----	1	1
	Silt, clayey, dusky-yellow, oxidized, laminated (glaciolacustrine sediment)-----	4	5
	Clay, moderately silty, moderately sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	6	11
	Clay, slightly sandy, pebbly, olive-gray, calcareous (till)-----	17	28
	Sand, fine to coarse-----	4	32
	Clay, very sandy, gravelly, pebbly, olive-gray (till)-----	42	74
	Silt, clayey, sandy, medium-dark-gray, highly calcareous; laminated light olive gray (glaciofluvial sediment)-----	15	89
	Sand, fine to very coarse; consists of about 20 percent shale particles-----	9	98
	Silt, clayey, sandy, medium-gray, highly calcareous; laminated light olive gray; contains a few thin sand lenses (glaciofluvial sediment)-----	192	290
	Clay, very sandy, pebbly, gravelly, medium-dark-gray (till)-----	70	360
	Sand, fine to very coarse, clayey-----	10	370
	Clay, very sandy, gravelly, pebbly, olive-gray, calcareous (till)-----	10	380
	Sand, fine to very coarse, clayey-----	48	428
	Clay, very sandy, pebbly, gravelly, olive-gray (till)-----	16	444
	Gravel, fine to coarse, very sandy, lignitic-----	21	465
	Cobbles and boulders in a clay matrix; very highly compacted (till)-----	10	475

157-060-18CBC  
NDSWC 8894

Altitude: 1525 feet

Glacial drift:			
	Sand, very fine to medium, clayey, gravelly, dark-yellowish-brown, oxidized-----	6	6
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	3	9
	Clay, slightly sandy, pebbly, olive-gray (till)-----	9	18
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle---	2	20

157-060-19AAA  
NDSWC 8769

Altitude: 1517 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, silty, clayey, black-----	1	1
	Clay, sandy, very silty, pebbly, dusky-yellow, oxidized (till)-----	11	12
	Clay, moderately sandy and silty, pebbly, olive-gray (till)-----	2	14
Pierre Formation:			
	Shale, grayish-black, siliceous, poorly fractured-----	26	40

157-060-22DDD  
NDSWC 8770

Altitude: 1529 feet

Glacial drift:			
	Loam, silty, clayey, black-----	1	1
	Clay, moderately sandy, silty, pebbly, dusky-yellow, oxidized (till)-----	4	5
	Gravel, fine to coarse, very sandy-----	5	10
	Clay, silty, slightly sandy, pebbly, olive-gray (till)-----	4	14
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	26	40

157-061-13ACA  
NDSWC 8889

Altitude: 1518 feet

Glacial drift:			
	Clay, moderately sandy, silty, pebbly, dusky-yellow to moderate- yellowish-brown, oxidized (till)-----	10	10
	Clay, slightly sandy, pebbly, olive- gray (till)-----	6	16
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle---	4	20

157-061-13ADC  
NDSWC 8888

Altitude: 1527 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Silt, sandy, clayey, pebbly, moderate-yellowish-brown, oxidized-----	6	6
	Sand, fine to medium, silty, oxidized-----	1	7
	Clay, moderately sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	3	10
	Sand, fine to very coarse, moderate-yellowish-brown, oxidized-----	4	14
	Clay, sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	4	18
	Clay, sandy, pebbly, olive-gray (till)-----	8	26
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle---	14	40

157-061-13DAA1  
NDSWC 8890

Altitude: 1528 feet

Glacial drift:			
	Silt, very clayey, slightly pebbly, dusky-yellow, oxidized-----	3	3
	Sand, very fine to very coarse, clayey, dark-yellowish-brown; oxidized to about 15 feet-----	17	20
Pierre Formation:			
	Shale, grayish-black to black, siliceous, brittle-----	5	25

157-061-13DAA2  
NDSWC 8891

Altitude: 1525 feet

Glacial drift:			
	Silt, clayey, dusky-yellow, oxidized-----	6	6
	Gravel, fine to medium, yellowish-brown, oxidized-----	1	7
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	4	11
	Clay, slightly sandy to sandy, pebbly, olive-gray (till)-----	7	18
Pierre Formation:			
	Shale, grayish-black to black, siliceous, brittle-----	2	20



157-061-13DAB1  
NDSWC 8885

Altitude: 1523 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Sand, fine to very coarse, slightly clayey, gravelly, dark-yellowish-brown, oxidized-----	13	13
	Gravel, fine to coarse, very sandy-----	4	17
	Clay, sandy, pebbly, olive-gray, calcareous (till)-----	3	20
Pierre Formation:			
	Shale, grayish-black, siliceous, slightly bentonitic-----	10	30

157-061-13DAB2  
NDSWC 8886

Altitude: 1520 feet

Glacial drift:			
	Silt, clayey, pebbly, dusky-yellow, oxidized-----	7	7
	Sand, very fine to coarse, clayey, medium-gray to medium-dark-gray-----	7	14
	Clay, moderately sandy, silty, pebbly, olive-gray (till)-----	2	16
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle---	4	20

157-061-13DAB3  
NDSWC 8887

Altitude: 1520 feet

Glacial drift:			
	Silt, clayey, dusky-yellow, oxidized-----	6	6
	Clay, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	3	9
	Clay, slightly sandy, pebbly, olive-gray (till)-----	7	16
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle---	4	20

157-061-13DAB4  
(Log modified from Peterson Well Co.)

Altitude: 1520 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Dirt, black-----	1	1
	Clay, yellow-----	11	12
	Sand and gravel, clayey-----	2	14
Pierre Formation:			
	Shale-----	31	45

157-061-13DAD  
NDSWC 8892

Altitude: 1523 feet

Glacial drift:			
	Silt, sandy, clayey, pebbly, dusky- yellow, oxidized-----	2	2
	Sand, very fine to coarse, gravelly, clayey-----	7	9
	Clay, moderately sandy, pebbly, olive- gray (till)-----	6	15
Pierre Formation:			
	Shale, grayish-black to black, siliceous, brittle-----	5	20

157-061-13DCA  
NDSWC 8893

Altitude: 1512 feet

Glacial drift:			
	Clay, moderately silty and sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	11	11
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle, partly oxidized-----	9	20

157-061-14AAA  
NDSWC 8768

Altitude: 1521 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, moderately sandy, silty, gravelly, pebbly, cobbly, moderate-yellowish-brown, oxidized (till)-----	12	12
	Clay, moderately sandy and silty, pebbly, olive-gray (till)-----	13	25
Pierre Formation:			
	Shale, grayish-black, siliceous, poorly fractured-----	15	40

157-061-17DCC1  
(Log from Peterson Well Co.)

Altitude: 1526 feet

Glacial drift:			
	Black dirt-----	2	2
	Clay, yellow-----	18	20
	Clay, yellow and gray-----	30	50
Pierre Formation:			
	Shale, blue-----	38	88

157-061-19BBB  
NDSWC 9063

Altitude: 1514 feet

Glacial drift:			
	Loam, silty, sandy, black (topsoil)-----	1	1
	Clay, silty, sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	17	18
	Clay, silty, sandy, pebbly, dark-gray; contains a few thin sand and gravel lenses (till)-----	29	47
Pierre Formation:			
	Shale, dark-gray to grayish-black, siliceous, soft, brittle-----	13	60

157-061-33AAA  
NDSWC 8767

Altitude: 1502 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	18	18
	Clay, slightly sandy, silty, pebbly, olive-gray (till)-----	6	24
Pierre Formation:			
	Shale, grayish-black, siliceous, slightly fractured-----	16	40

157-062-04CCC  
NDSWC 9064

Altitude: 1511 feet

Glacial drift:			
	Clay, silty, sandy, pebbly, dark-yellowish-orange to dark-yellowish-brown, oxidized (till)-----	22	22
	Clay, silty, sandy, pebbly, dark-gray (till)-----	5	27
	Boulder, dolomite-----	1	28
Pierre Formation:			
	Shale, dark-gray, siliceous, hard, brittle-----	32	60

157-062-13AAA  
NDSWC 8776

Altitude: 1511 feet

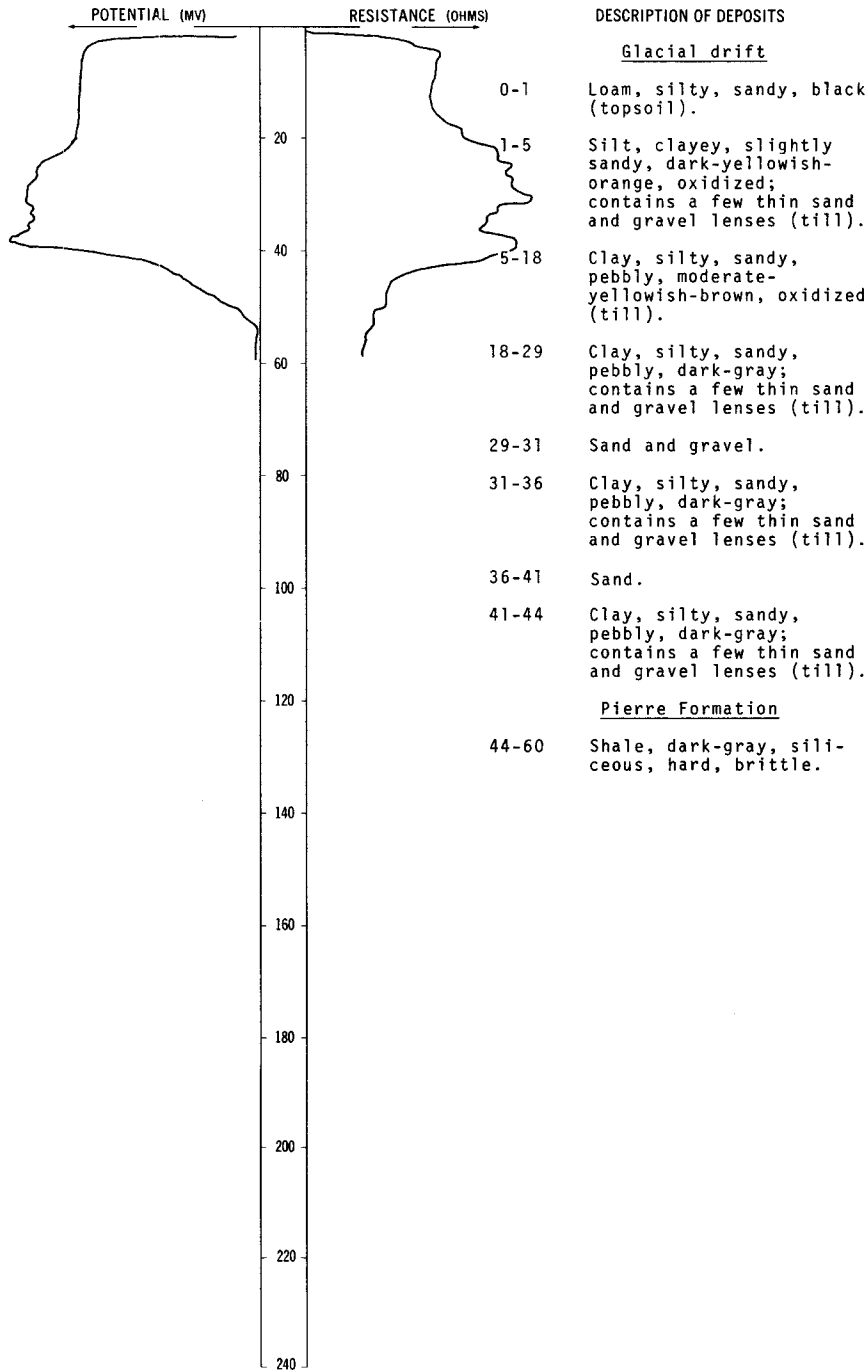
Glacial drift:			
	Loam, silty, clayey, black-----	1	1
	Silt, clayey, moderate-yellowish-brown, oxidized (glaciolacustrine sediment)-----	13	14
	Clay, silty, moderately sandy, pebbly, dark-yellowish-brown, partly oxidized (till)-----	7	21
	Clay, moderately silty, pebbly, cobbly, olive-gray (till)-----	5	26
Pierre Formation:			
	Shale, grayish-black, siliceous, brittle---	14	40

LOCATION: 157-062-21BCC

DATE DRILLED: August 1974

ALTITUDE: 1505  
(FT, MSL)

DEPTH: 60  
(FT)



157-062-23BAB  
USAF 318

Altitude: 1513 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Clay, silty, black-----	2	2
	Clay, sandy, silty, gravelly, brown-----	20	22
	Clay, sandy, silty, gravelly, gray-----	63	85
Pierre Formation:			
	Shale, dark-gray, fractured-----	45	130

157-062-23BBA  
USAF 47-2

Altitude: 1508 feet

Glacial drift:			
	Clay and silt, sandy, black-----	2	2
	Silt, clayey, sandy, gravelly, brown-----	7	9
	Clay, sandy, silty, gravelly, brown-----	9	18
	Clay, sandy, silty, gravelly, gray-----	30	48
	Sand, fine, silty, clayey, gray-----	6	54
	Sand, fine, gravelly, clayey, gray-----	8	62
	Clay, sandy, silty, gravelly, gray-----	16	78
Pierre Formation:			
	Shale, dark-gray, moderately fractured-----	52	130

157-062-23BCA  
USAF 2318

Altitude: 1510 feet

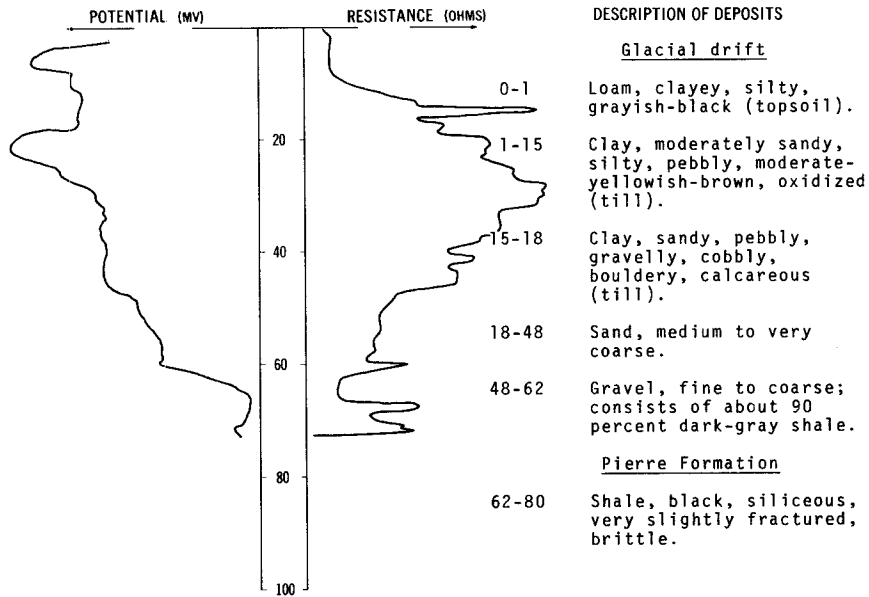
Glacial drift:			
	Silt, clayey, sandy, tan-----	3	3
	Clay, silty, sandy, gravelly, yellowish-brown-----	10	13
	Sand, medium to coarse, clayey, gravelly, yellowish-brown-----	5	18
	Clay, silty, sandy, gravelly, cobbly, gray-----	9	27
	Clay and silt, sandy, gravelly, dark-gray-----	8	35
	Silt, sandy, clayey, gravelly, bouldery, dark-gray-----	12	47
	Clay, silty, sandy, gravelly, bouldery, gray-----	12	59
	Clay, silty, sandy, gravelly, dark-gray-----	15	74
	Silt, clayey, gray to dark-gray-----	6	80
Pierre Formation:			
	Shale, dark-gray, moderately to slightly fractured; uppermost 10 ft is highly fractured and crumbly in part-----	50	130

LOCATION: 157-062-28BBB

ALTITUDE: 1505  
(FT, MSL)

DATE DRILLED: July 1973

DEPTH: 80  
(FT)



157-062-33BBB  
NDSWC 9061

Altitude: 1505 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
<u>Glacial drift:</u>			
	Loam, sandy, silty, clayey, black-----	1	1
	Silt, clayey, dark-yellowish-orange, oxidized-----	15	16
	Silt, clayey, medium-dark-gray-----	4	20
	Clay, silty, sandy, pebbly, dark-gray; contains a few thin sand and gravel lenses (till)-----	5	25
<u>Pierre Formation:</u>			
	Shale, dark-gray, siliceous, soft, hard, brittle-----	35	60

157-063-06AAA  
NDSWC 9070

Altitude: 1498 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, silty, sandy, black (topsoil)-----	1	1
	Silt, very clayey, dark-yellowish-orange, oxidized-----	10	11
	Clay, silty, sandy, pebbly, dark-gray (till)-----	15	26
Pierre Formation:			
	Shale, dark-gray, siliceous, hard, brittle-----	34	60

157-063-11CCC  
NDSWC 8788

Altitude: 1500 feet

Glacial drift:			
	Loam, silty, pebbly, grayish-black-----	1	1
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	16	17
	Clay, slightly sandy, moderately silty, pebbly, olive-gray (till)-----	12	29
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	11	40

157-063-14CCC  
USAF 48

Altitude: 1493 feet

Glacial drift:			
	Silt, clayey, black-----	2	2
	Silt, sandy, clayey, tan-----	7	9
	Silt, clayey, sandy, brown-----	9	18
	Sand, fine to medium, clayey, silty, brown-----	6	24
	Silt, clayey, sandy, gravelly, gray-----	4	28
Pierre Formation:			
	Shale, partly silty, dark-gray, fractured-----	13	41
	Shale and clay, dark-gray; angular fragments of moderately hard to hard shale in a matrix of very stiff silty clay-----	23	64
	Shale, partly silty, dark-gray, fractured-----	66	130

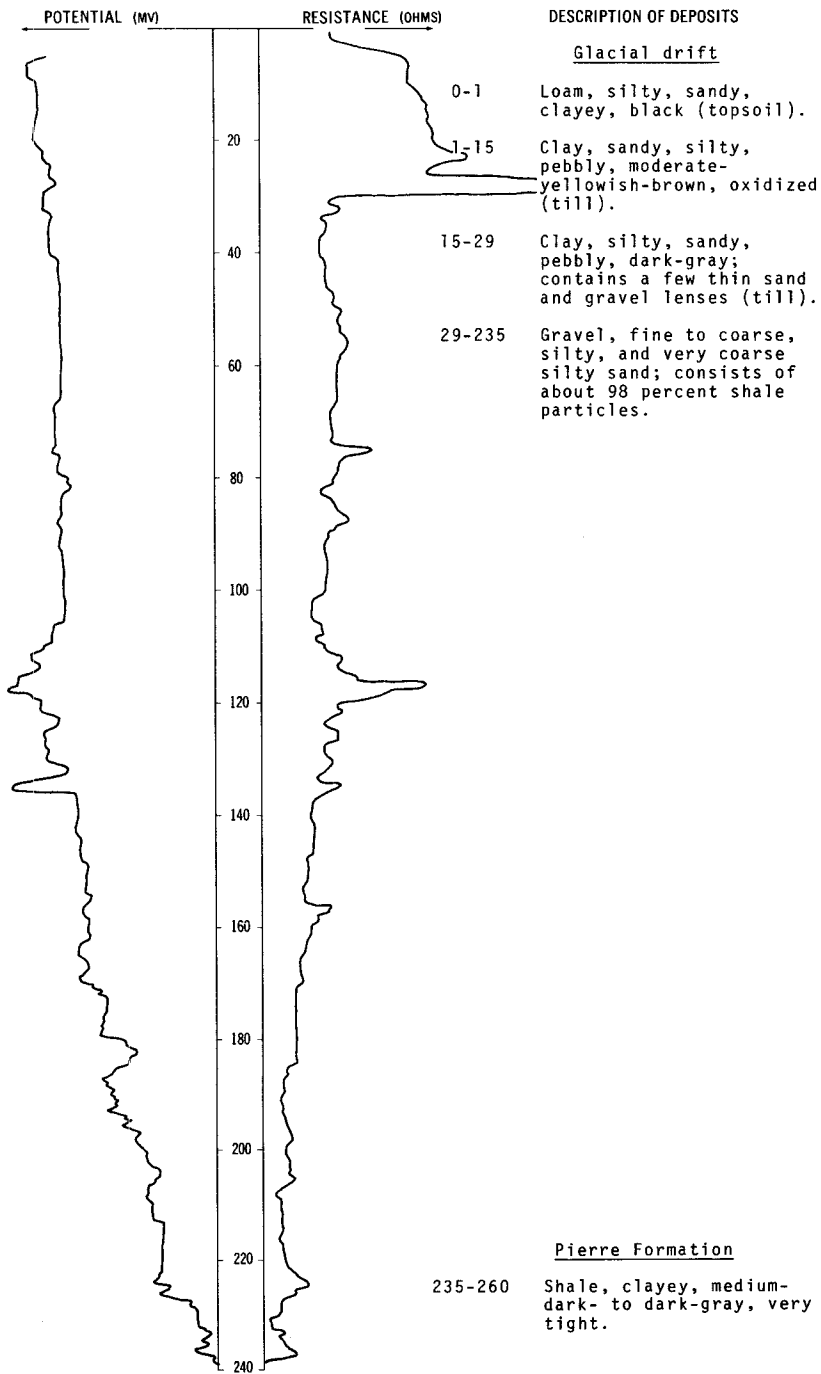


LOCATION: 157-063-18AAA

DATE DRILLED: August 1974

ALTITUDE: 1491  
(FT, MSL)

DEPTH: 260  
(FT)



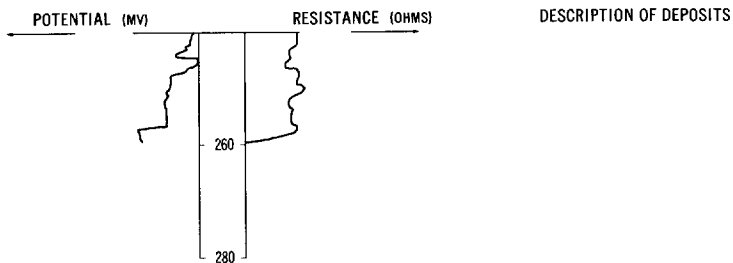
NDSWC 9071, Continued

LOCATION: 157-063-18AAA

DATE DRILLED: August 1974

ALTITUDE: 1491  
(FT, MSL)

DEPTH: 260  
(FT)



157-063-19ABC  
USAF 2049

Altitude: 1493 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, silty, sandy, dark-brown-----	2	2
	Sand, fine, clayey, yellowish-brown-----	6	8
	Clay, silty, sandy, gravelly, pebbly; yellowish brown from 8 to 14, grayish brown from 14 to 18, and gray from 18 to 27 feet-----	19	27
	Silt, clayey, sandy, gravelly, gray-----	2	29
	Sand, fine, clayey, gravelly, gray; silt-----	3	32
	Clay, silty, sandy, gravelly, pebbly, gray-----	10	42
	Clay, silty, sandy, gray-----	6	48
	Silt, clayey, sandy, gray-----	31	79
	Clay, silty, sandy, gray-----	29	108
Pierre Formation:			
	Shale and silt, clayey, dark-gray-----	10	118
	Shale, silty, dark-gray, highly fractured and crushed-----	12	130

157-063-22BCB  
NDSWC 9065

Altitude: 1490 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, sandy, silty, black (topsoil)-----	1	1
	Clay, sandy, silty, pebbly, moderate- yellowish-brown, oxidized (till)-----	17	18
	Clay, sandy, silty, pebbly, dark- gray; contains a few thin sand and gravel lenses-----	4	22
Pierre Formation:			
	Shale, dark-gray, siliceous, soft, brittle-----	38	60

157-063-24BAD  
USAF 2048

Altitude: 1500 feet

Glacial drift:			
	Clay, silty, sandy, dark-gray-----	2	2
	Clay, silty, sandy, gravelly, yellowish-brown-----	16	18
	Clay, silty, sandy, gravelly, gray-----	8	26
Pierre Formation:			
	Shale, gray; crushed shale in a clayey silt matrix-----	3	29
	Shale, dark-gray, moderately to highly fractured-----	101	130

157-063-26BBB  
NDSWC 8787

Altitude: 1495 feet

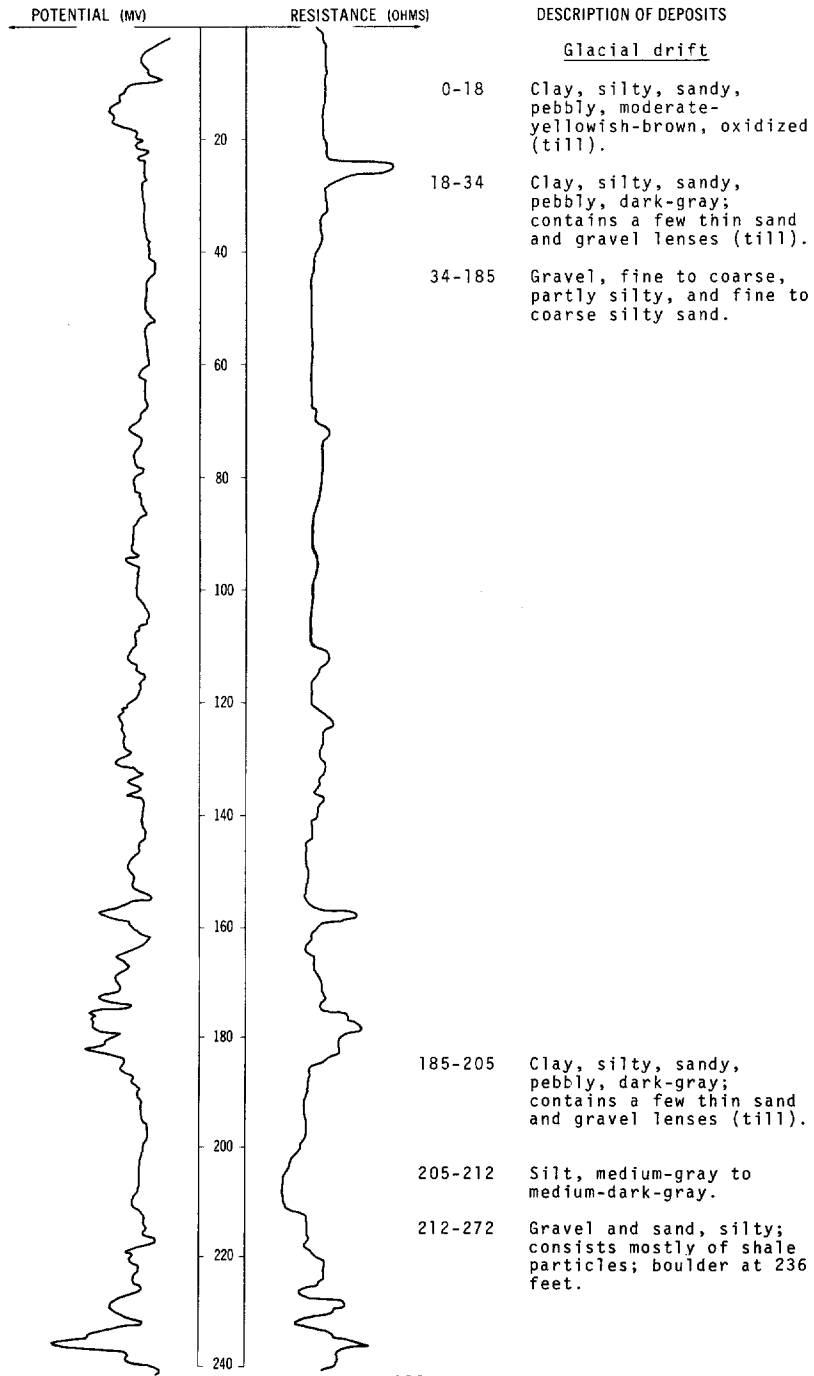
Glacial drift:			
	Loam, clayey, pebbly, grayish-black-----	1	1
	Clay, moderately sandy and silty, moderate-yellowish-brown, oxidized-----	22	23
	Clay, sandy, pebbly, gravelly, olive- gray (till)-----	16	39
Pierre Formation:			
	Shale, grayish-black, siliceous, slightly fractured-----	21	60

LOCATION: 157-063-27CCC

DATE DRILLED: August 1974

ALTITUDE: 1484  
(FT, MSL)

DEPTH: 300  
(FT)



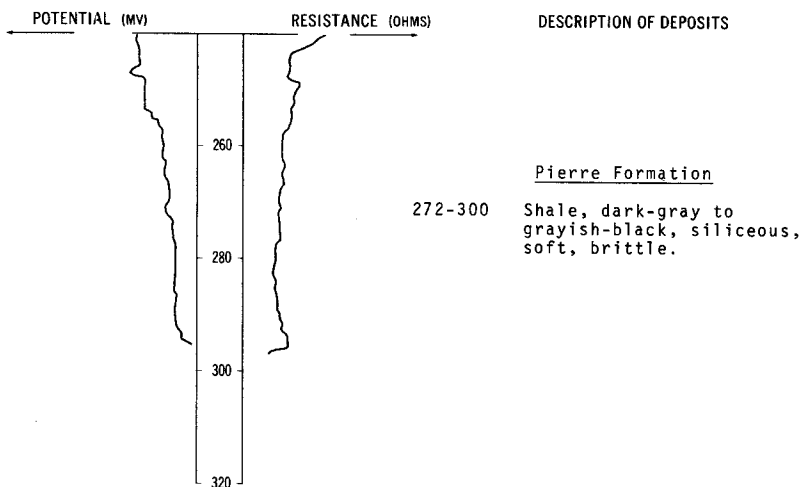
NDSWC 9066, Continued

LOCATION: 157-063-27CCC

DATE DRILLED: August 1974

ALTITUDE: 1484  
(FT, MSL)

DEPTH: 300  
(FT)



157-063-29DDD  
NDSWC 9067

Altitude: 1477 feet

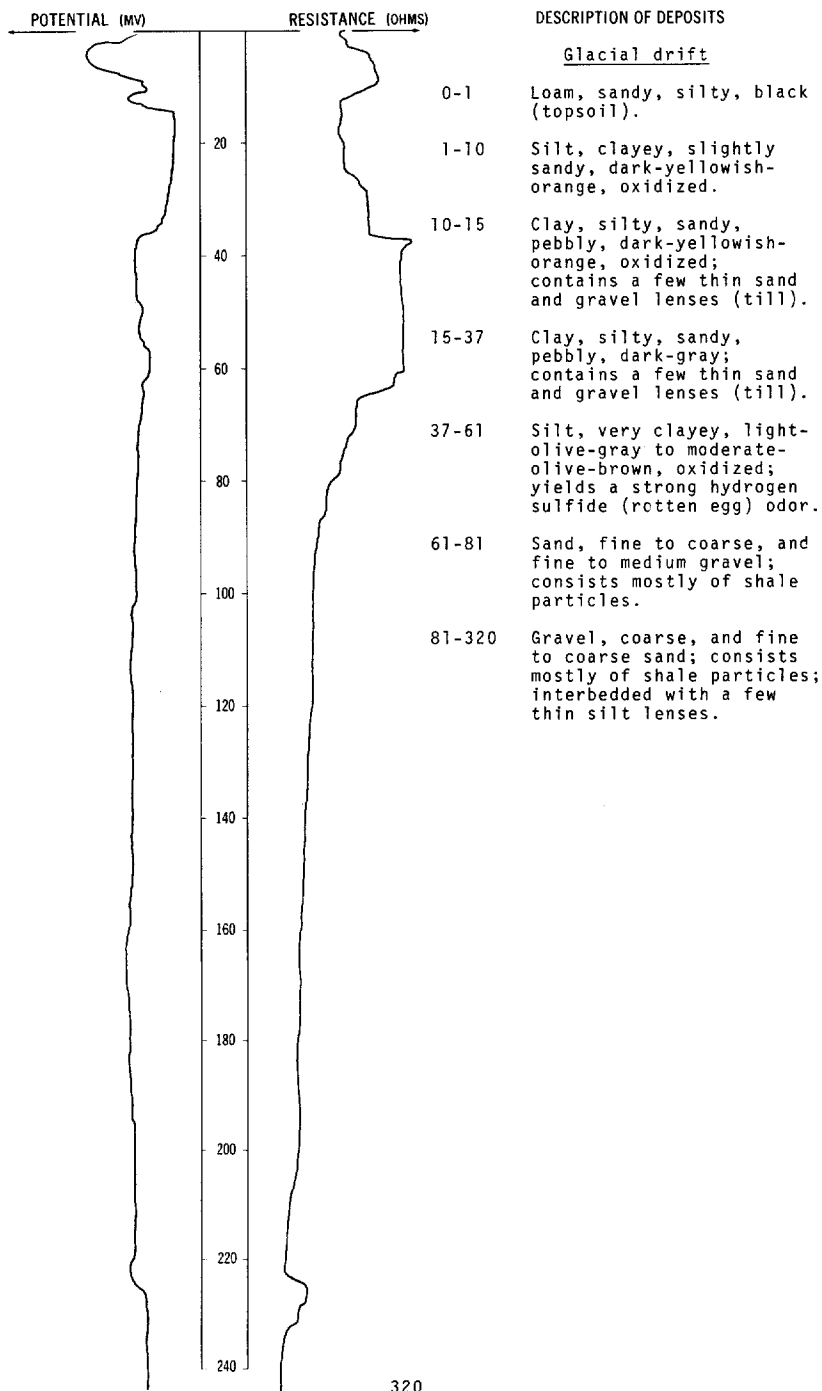
<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, silty, sandy, black (topsoil)-----	1	1
	Silt, slightly clayey, sandy, dark-yellowish-orange, oxidized-----	6	7
	Clay, silty, sandy, pebbly, dark-yellowish-orange, oxidized (till)-----	10	17
	Clay, silty, sandy, pebbly, dark-gray to olive-gray (till)-----	3	20
Pierre Formation:			
	Shale, dark-gray, siliceous, hard, brittle-----	40	60

LOCATION: 157-063-34ABA1

DATE DRILLED: August 1974

ALTITUDE: 1486  
(FT, MSL)

DEPTH: 620  
(FT)



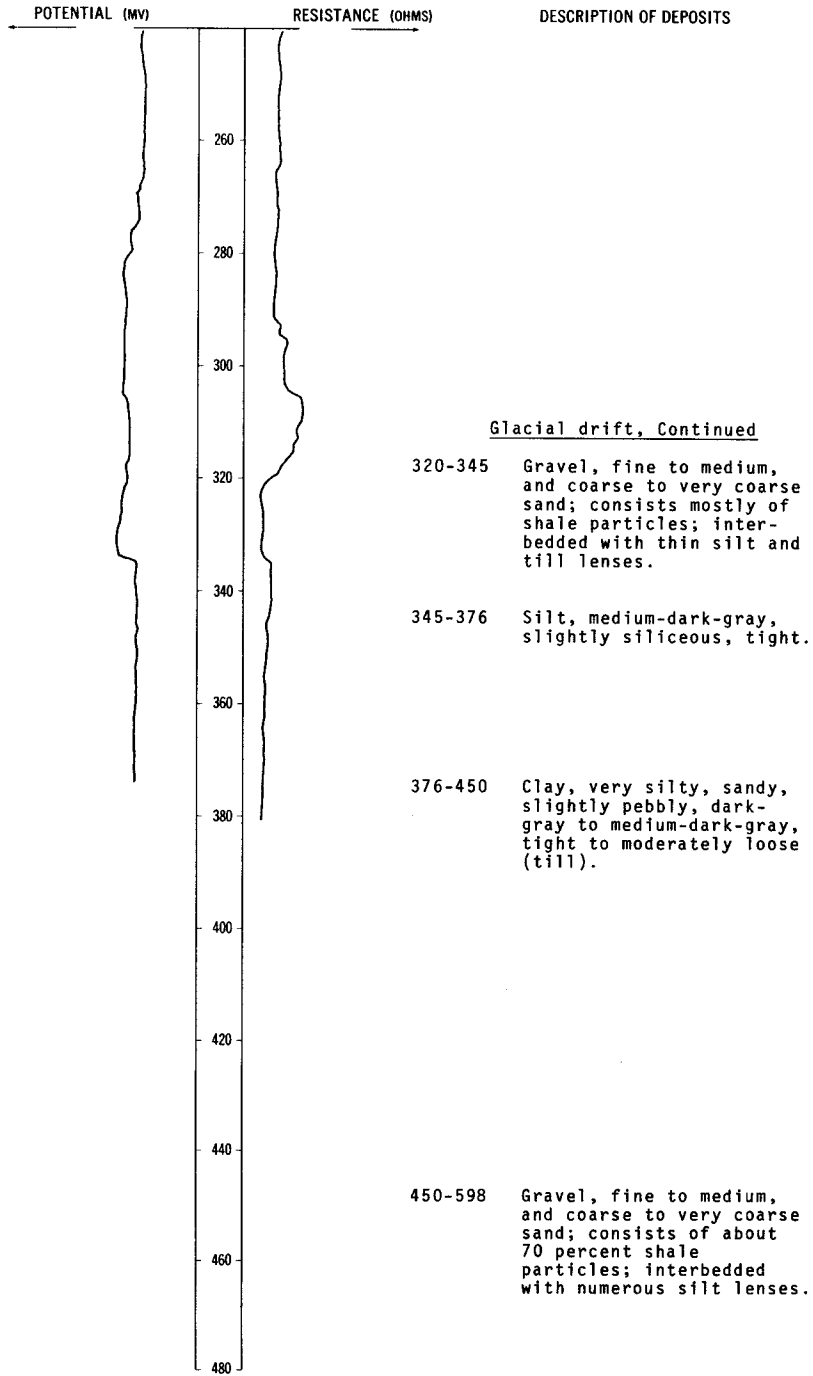
NDSWC 9068, Continued

LOCATION: 157-063-34ABA1

DATE DRILLED: August 1974

ALTITUDE: 1486  
(FT, MSL)

DEPTH: 620  
(FT)







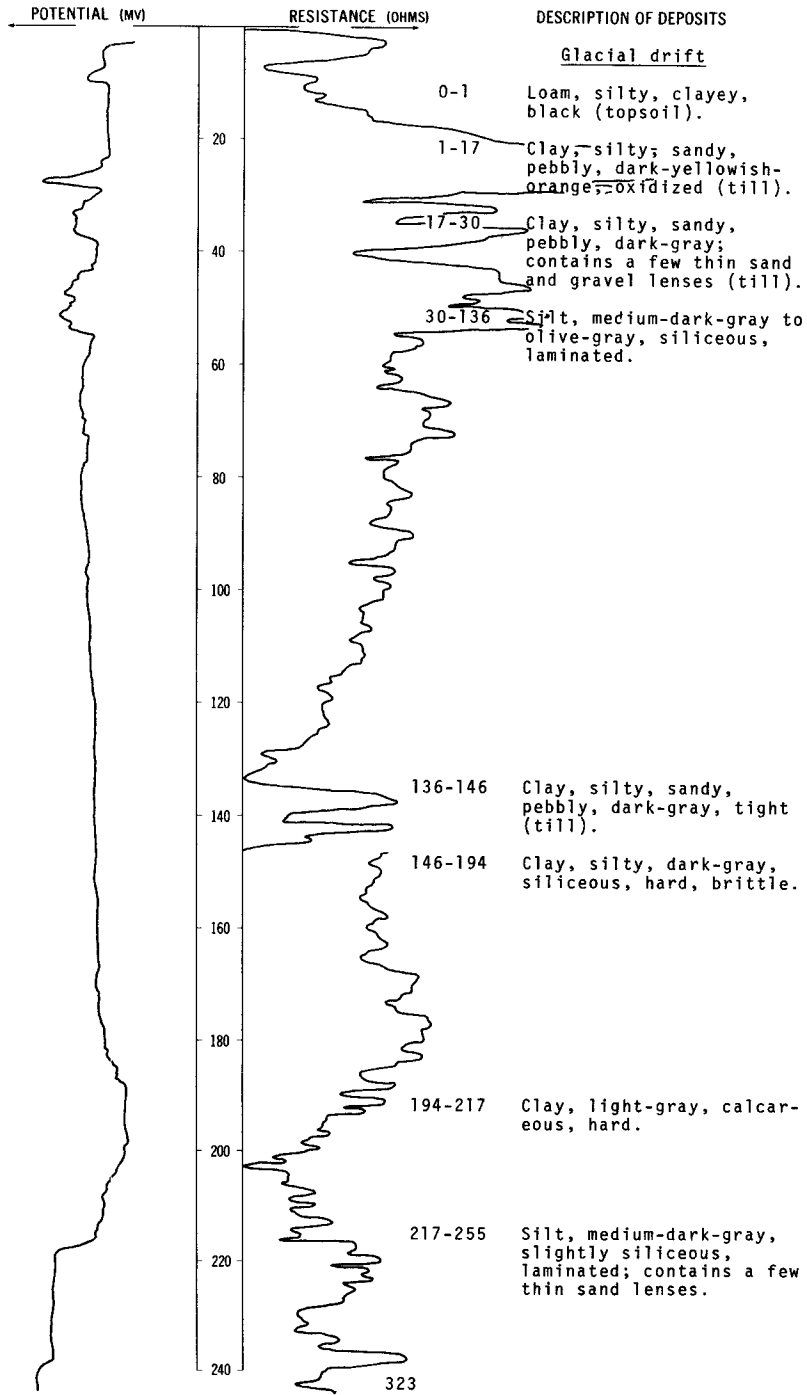
NDSWC 9069

LOCATION: 157-064-02AAA

DATE DRILLED: August 1974

ALTITUDE: 1499  
(FT, MSL)

DEPTH: 360  
(FT)



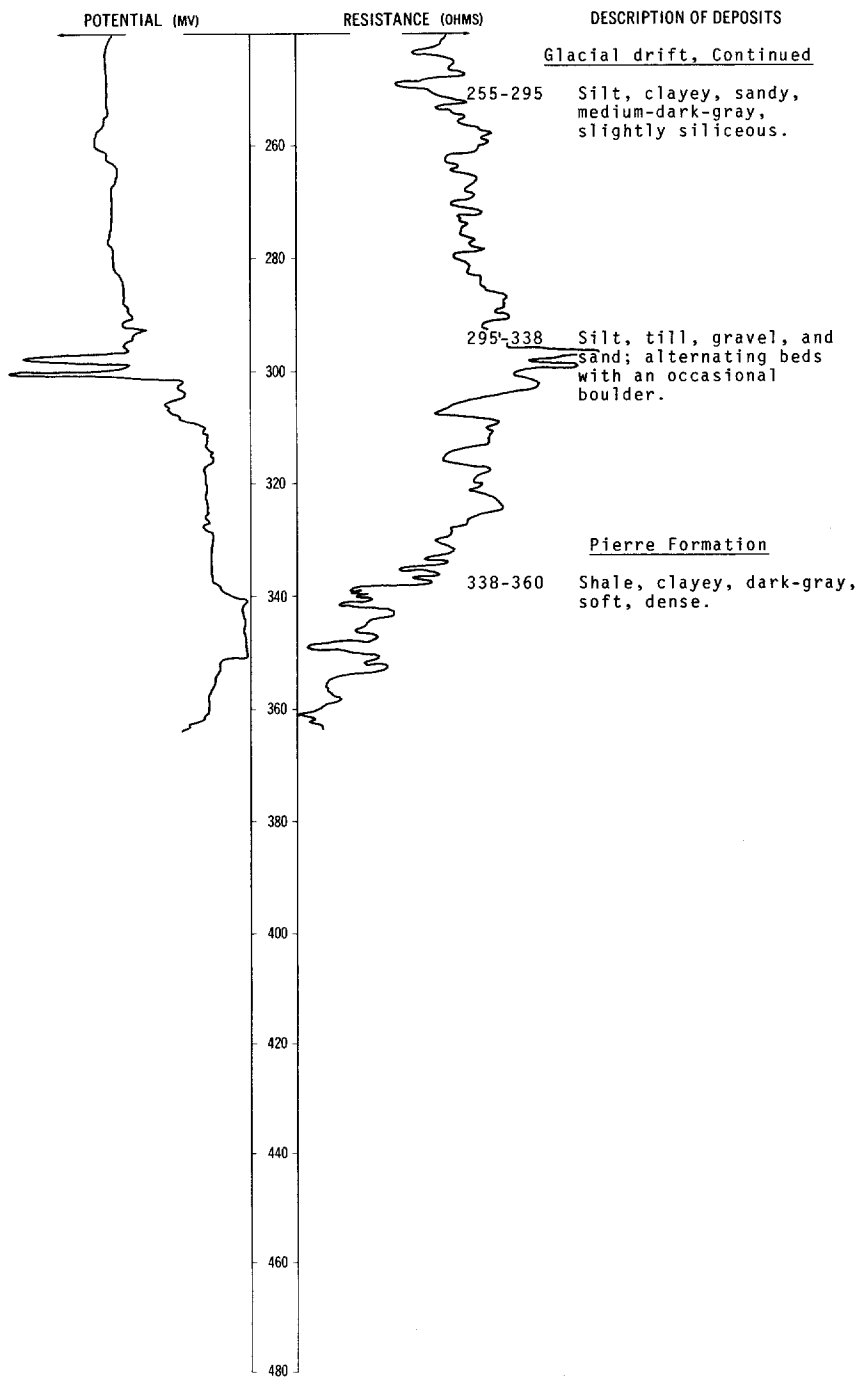
NDSWC 9069, Continued

LOCATION: 157-064-02AAA

DATE DRILLED: August 1974

ALTITUDE: 1499  
(FT, MSL)

DEPTH: 360  
(FT)



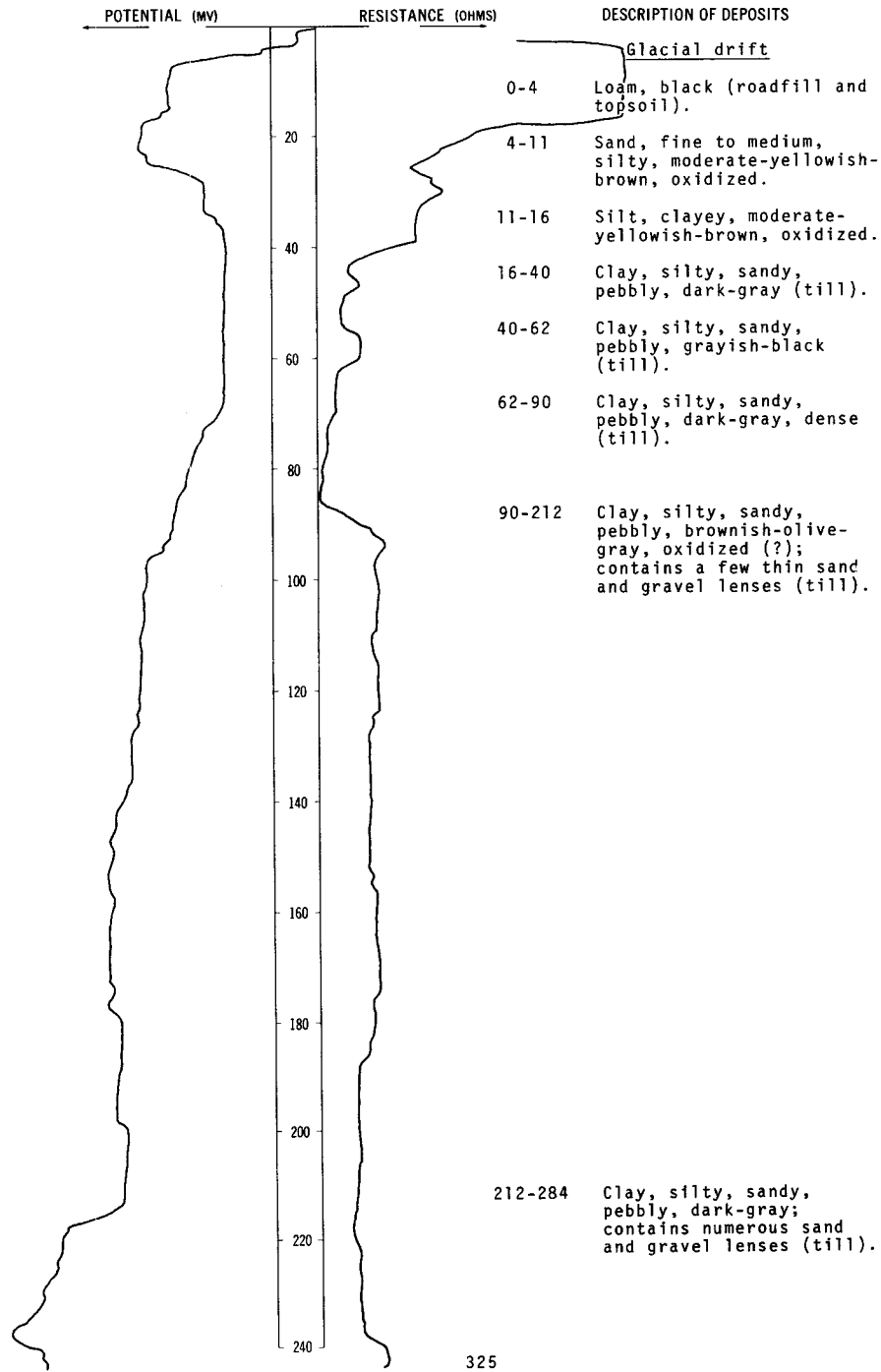
NDSWC 9072

LOCATION: 157-064-03DDD

DATE DRILLED: September 1974

ALTITUDE: 1490  
(FT, MSL)

DEPTH: 340  
(FT)



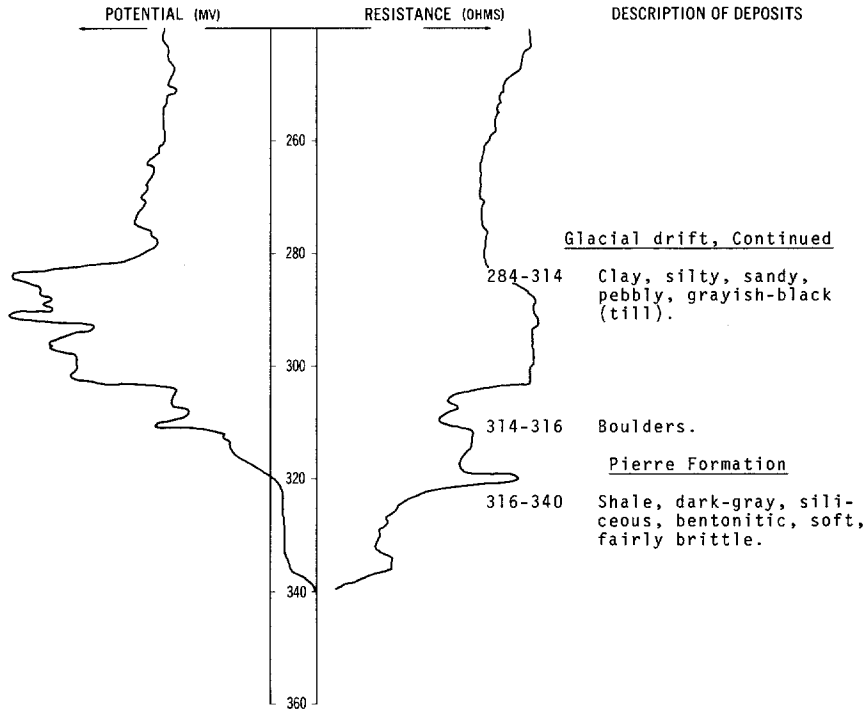
NDSWC 9072, Continued

LOCATION: 157-064-03DDD

DATE DRILLED: September 1974

ALTITUDE: 1490  
(FT, MSL)

DEPTH: 340  
(FT)



157-064-05ABB  
USAF 56

Altitude: 1478 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, silty, black-----	2	2
	Clay, silty, sandy, gravelly, brown-----	16	18
	Clay, sandy, silty, gravelly, gray and brown-----	8	26
	Clay, silty, sandy, gravelly, gray-----	6	32
Pierre Formation:			
	Shale, dark-gray, highly fractured and broken-----	32	64
	Shale, dark-gray, moderately fractured-----	66	130

157-064-07DDA3  
(Log modified from C. A. Simpson and Son)

Altitude: 1472 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil-----	1	1
	Clay, yellow-----	17	18
	Clay, blue-----	7	25
	Clay, gravelly, blue-----	21	46
Pierre Formation:			
	Shale-----	100	146

157-064-15ABA  
NDSWC 8783

Altitude: 1480 feet

Glacial drift:			
	Loam, silty, clayey, grayish-black-----	1	1
	Clay, moderately sandy and silty, pebbly, dusky-yellow to moderate-yellowish-brown, oxidized (till)-----	24	25
	Clay, sandy, pebbly, gravelly, olive-gray (till)-----	11	36
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	4	40

157-064-24ABC  
USAF 49

Altitude: 1487 feet

Glacial drift:			
	Clay, sandy, black-----	1	1
	Sand, fine to coarse, silty, gravelly, brown-----	3	4
	Clay, silty, gravelly, sandy, brown-----	4	8
	Sand, fine to medium, silty, gravelly, yellowish-brown-----	6	14
	Silt, clayey, sandy, gravelly, brown-----	4	18
	Clay, sandy, silty, gravelly, gray-----	12	30
	Sand, fine to medium, clayey, silty, gravelly, gray-----	3	33
	Clay, sandy, silty, gravelly, gray-----	3	36
	Sand, fine to medium, silty, brownish-gray-----	2	38
	Sand, fine to medium, clayey, silty, cobbly, bouldery, brown and gray-----	10	48
	Shale and silt; dark-gray shale in a matrix of dense clayey silt-----	15	63
	Clay, sandy, silty, gravelly, gray-----	26	89
Pierre Formation:			
	Shale, silty, dark-gray, highly fractured, crumbly-----	7	96
	Shale, dark-gray, moderately fractured, fissile to blocky-----	4	100

157-064-28CCC  
NDSWC 8784

Altitude: 1471 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, silty, pebbly, clayey, grayish-black-----	1	1
	Clay, moderately sandy and silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	22	23
	Clay, slightly sandy, pebbly, olive-gray (till)-----	18	41
	Clay, sandy, very gravelly, pebbly, olive-gray (till)-----	7	48
Pierre Formation:			
	Shale, grayish-black, siliceous, slightly fractured-----	12	60

157-064-35ADB  
(Log modified from Holbeck Well Service)

Altitude: 1495 feet

Glacial drift:			
	Soil, black-----	0.5	0.5
	Sand-----	8.5	9
	Clay, yellow-----	18	27
	Clay, blue-----	48	75
Pierre Formation:			
	Shale, blue-----	43	118

158-060-10AAA  
NDSWC 8772

Altitude: 1583 feet

Glacial drift:			
	Loam, clayey, sandy, pebbly, black-----	1	1
	Gravel, fine to coarse, sandy, oxidized; mostly shale particles-----	4	5
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	5	10
	Clay, pebbly, olive-gray (till)-----	1	11
Pierre Formation:			
	Shale, grayish-black, siliceous, slightly fractured-----	29	40

158-060-240DB  
USAF 2064

Altitude: 1576 feet

Glacial drift:			
	Clay, silty, sandy, black-----	3	3
	Silt, clayey, sandy, tan-----	5	8
	Clay, silty, sandy, gray-----	8	16
Pierre Formation:			
	Shale, dark-gray, slightly to moderately fractured-----	116	132

158-060-26AAA  
NDSWC 8771

Altitude: 1566 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, silty, clayey, black-----	1	1
	Clay, moderately sandy, pebbly, moderate-yellowish-brown, oxidized (till)-----	11	12
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	28	40

158-060-29AAA  
NDSWC 8773

Altitude: 1555 feet

Glacial drift:			
	Loam, silty, clayey, pebbly, black-----	1	1
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	11	12
	Clay, slightly sandy, silty, pebbly, olive-gray (till)-----	2	14
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	26	40

158-060-30BDC  
(Log from Peterson Well Co.)

Altitude: 1540 feet

Glacial drift:			
	Black dirt-----	1	1
	Gravel, fine-----	3	4
	Clay, gravelly-----	6	10
	Gravel, clayey-----	11	21
Pierre Formation:			
	Slate (shale), blue, hard-----	62	83

158-060-30CBD  
USAF 2329

Altitude: 1540 feet

Glacial drift:			
	Clay, silty, brown-----	2	2
	Clay, silty, sandy, brown-----	12	14
	Silt, clayey, sandy, brown-----	5	19
Pierre Formation:			
	Shale, dark-gray; highly fractured 19 to 42 feet and moderately to slightly fractured from 42 to 130 feet-----	111	130

158-061-10DDD  
NDSWC 8774

Altitude: 1545 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:	Loam, silty, pebbly, black-----	1	1
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	12	13
	Clay, slightly sandy, silty, pebbly, olive-gray (till)-----	3	16
Pierre Formation:	Shale, grayish-black, siliceous, very slightly fractured-----	24	40

158-061-29AAA  
(Log from Walter Koehmstedt)

Altitude: 1542 feet

Glacial drift:	Clay, sand and rock-----	50	50
Pierre Formation:	Shale-----	57	107

158-061-30ABB  
USAF 62

Altitude: 1541 feet

Glacial drift:	Clay, silty, black-----	2	2
	Clay, sandy, silty, brown-----	21	23
	Clay, sandy, silty, gray-----	9	32
Pierre Formation:	Shale, dark-gray, highly fractured; moderately soft to moderately hard with a crushed shale matrix-----	16	48
	Shale, dark-gray, moderately fractured-----	82	130

158-061-34CCC  
NDSWC 8775

Altitude: 1531 feet

Glacial drift:	Loam, silty, pebbly, clayey, black-----	1	1
	Clay, moderately sandy, pebbly, silty, dusky-yellow to moderate- yellowish-brown, oxidized (till)-----	17	18
	Clay, slightly sandy, pebbly, olive- gray (till)-----	7	25
Pierre Formation:	Shale, grayish-black, siliceous, very slightly fractured-----	15	40



158-062-04BAA  
(Log from C. A. Simpson and Son)

Altitude: 1566 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil-----	2	2
	Clay, sandy, yellow-----	16	18
	Clay, sandy, blue-----	44	62
Pierre Formation:			
	Shale-----	120	182

158-062-04BAD  
(Log from L. A. Gjerdevig)

Altitude: 1573 feet

Glacial drift:			
	Topsoil-----	2	2
	Clay, yellow-----	8	10
	Clay, sandy, yellow-----	18	28
	Clay, blue-----	72	100
	Slate and blue clay (Pierre Formation?)----	50	150

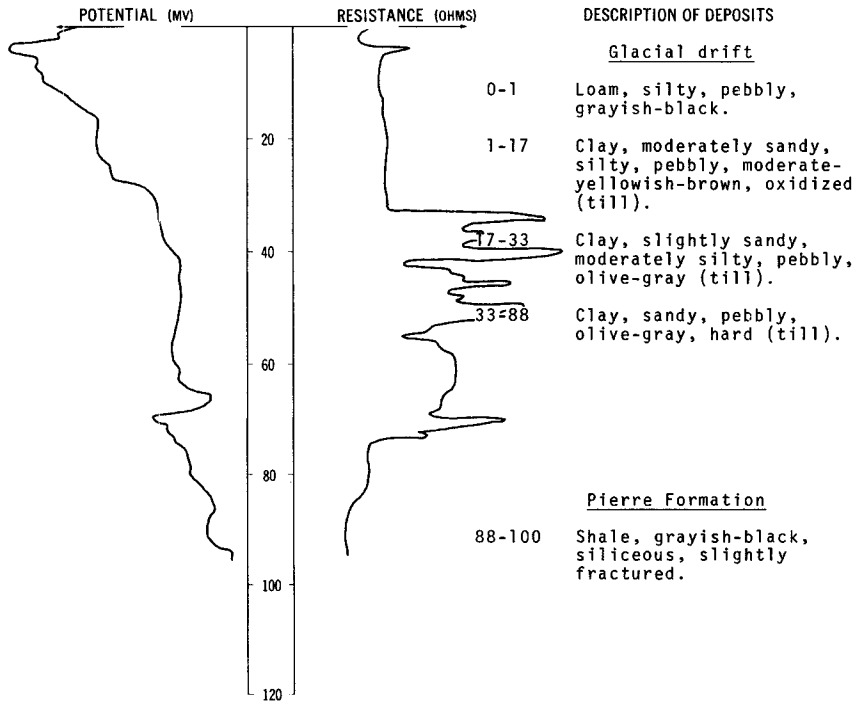
NDSWC 8778

LOCATION: 158-062-06DDD

ALTITUDE: 1551  
(FT, MSL)

DATE DRILLED: July 1973

DEPTH: 100  
(FT)



158-062-08ADD  
(Log modified from C. A. Simpson and Son)

Altitude: 1556 feet

Geologic source	Material	Thickness (feet)	Depth (feet)
Glacial drift:			
	Topsoil-----	1	1
	Clay, yellow-----	34	35
	Clay, blue-----	15	50
	Rock; difficult drilling-----	4	54
	Gravel and rocks, dry-----	16	70
Pierre Formation:			
	Shale-----	43	113

158-062-24DCB  
USAF 2062

Altitude: 1545 feet

Glacial drift:			
	Silt, sandy, dark-brown-----	2	2
	Sand, fine, silty, clayey, yellow-brown-----	4	6
	Clay, silty, sandy, yellow-brown-----	15	21
	Clay, silty, sandy, gray-----	13	34
Pierre Formation:			
	Shale, dark-gray; highly fractured from 34 to 43, moderately fractured from 43 to 58, and slightly fractured from 58 to 130 feet-----	96	130

158-062-27BBB  
NDSWC 8777

Altitude: 1537 feet

Glacial drift:			
	Loam, silty, pebbly, clayey, black-----	1	1
	Clay, moderately sandy, silty, pebbly, moderate-yellowish-brown, oxidized (till)-----	24	25
	Clay, slightly sandy, pebbly, olive-gray; gravelly in lower 2 feet (till)-----	10	35
Pierre Formation:			
	Shale, grayish-black, siliceous, slightly fractured-----	25	60

158-062-30ABB  
 USAF 60

Altitude: 1531 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, silty, sandy, tan-----	4	4
	Sand, fine, silty, clayey, light- brown-----	9	13
	Clay, sandy, silty, brown-----	14	27
	Clay, sandy, silty, gray-----	21	48
Pierre Formation:			
	Shale, dark-gray; highly fractured from 48 to 94 and moderately fractured from 94 to 130 feet-----	82	130

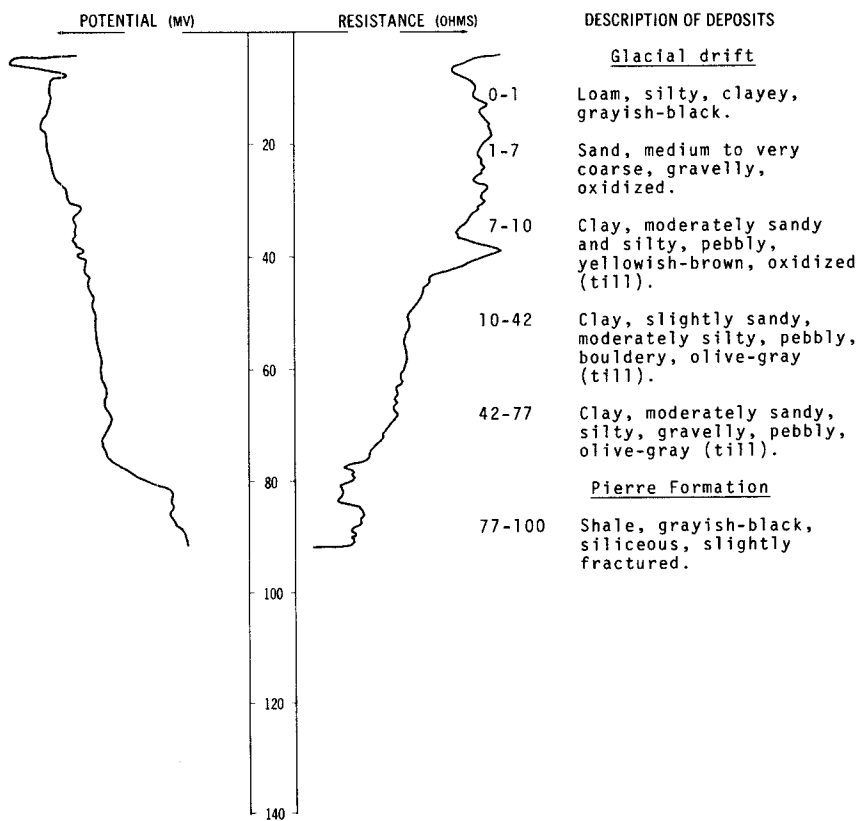
NDSWC 8779

LOCATION: 158-063-12CCC

DATE DRILLED: July 1973

ALTITUDE: 1537  
 (FT, MSL)

DEPTH: 100  
 (FT)



158-063-30ABB  
 USAF 57

Altitude: 1513 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, sandy, silty, brown-----	4	4
	Sand, fine to medium, clayey, gravelly, brown-----	4	8
	Clay, sandy, silty, brown-----	11	19
	Clay, sandy, silty, gray-----	5	24
Pierre Formation:			
	Shale and clay; dark-gray shale in very stiff silty-clay matrix-----	4	28
	Shale, dark-gray; highly fractured from 28 to 49 and moderately fractured from 49 to 130 feet-----	102	130

158-063-30ABC  
 USAF 2057

Altitude: 1518 feet

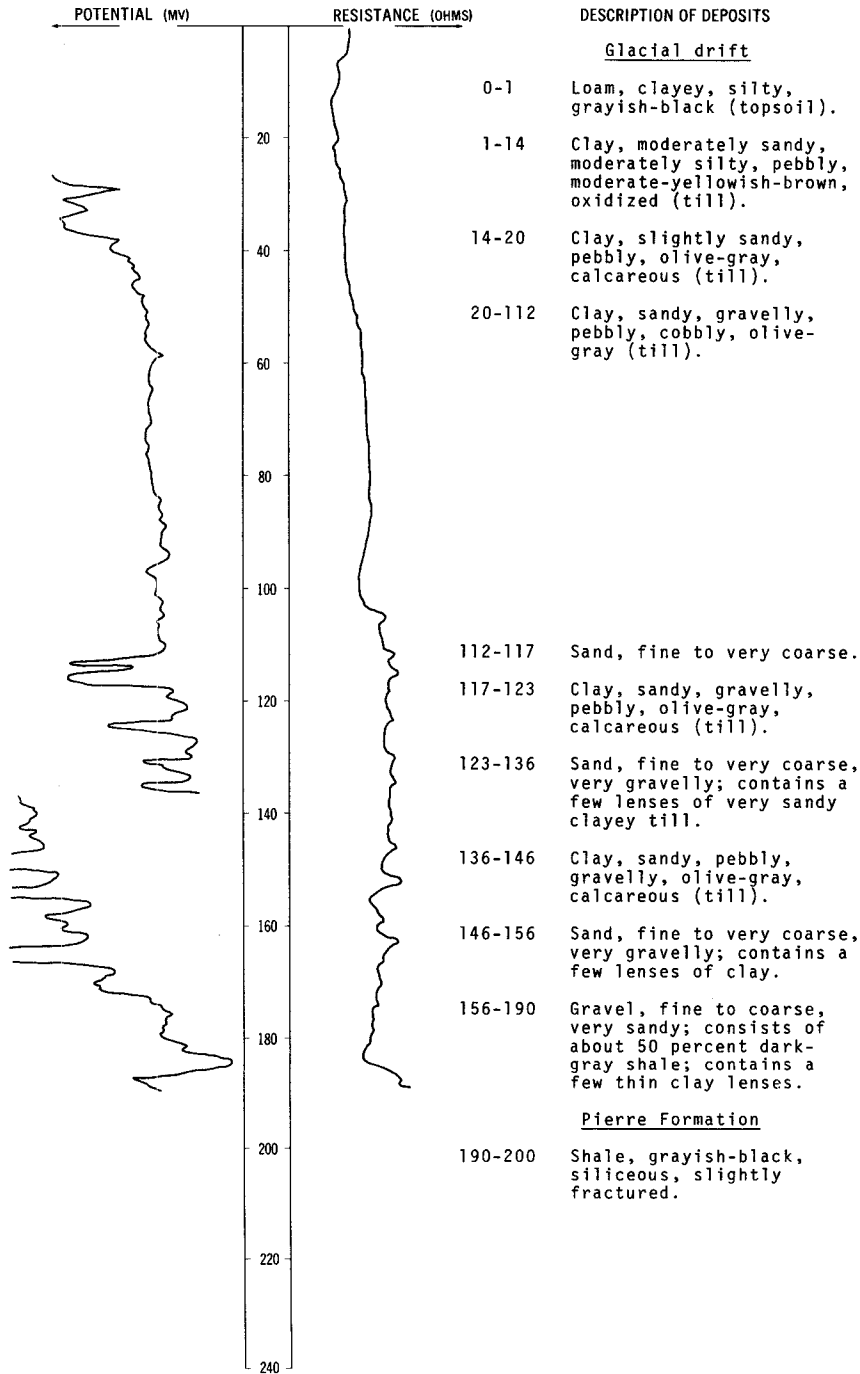
<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Clay, silty, tan-----	2	2
	Clay, silty, sandy, tan-----	16	18
	Clay, silty, sandy, gray-----	8	26
Pierre Formation:			
	Shale, dark-gray; highly fractured shale and, in part, mixed with a clayey silt matrix-----	7	33
	Shale, dark-gray, highly to moderately fractured-----	97	130

LOCATION: 158-063-32AAA

ALTITUDE: 1501  
(FT, MSL)

DATE DRILLED: July 1973

DEPTH: 200  
(FT)



158-064-09DDD  
NDSWC 8781

Altitude: 1507 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, silty, pebbly, grayish-black-----	1	1
	Clay, moderately sandy, silty, pebbly, dusky-yellow to moderate-yellowish-brown, oxidized (till)-----	11	12
	Clay, slightly sandy, moderately silty, pebbly, olive-gray (till)-----	4	16
	Clay, sandy, gravelly, pebbly, olive-gray (till)-----	5	21
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	19	40

158-064-18DDD  
NDSWC 9074

Altitude: 1495 feet

Glacial drift:			
	Loam, clayey, silty, black (topsoil)-----	1	1
	Clay, silty, sandy, pebbly, moderate-yellowish-brown, oxidized; contains a few thin sand and gravel lenses (till)-----	13	14
	Clay, silty, sandy, pebbly, dark-gray; contains a few thin sand and gravel lenses (till)-----	7	21
Pierre Formation:			
	Shale, dark-gray, siliceous, hard, brittle-----	39	60

158-064-25ABB  
(Log from C. A. Simpson and Son)

Altitude: 1512 feet

Glacial drift:			
	Topsoil-----	1	1
	Clay, yellow-----	14	15
	Clay, blue-----	35	50
Pierre Formation:			
	Shale-----	72	122

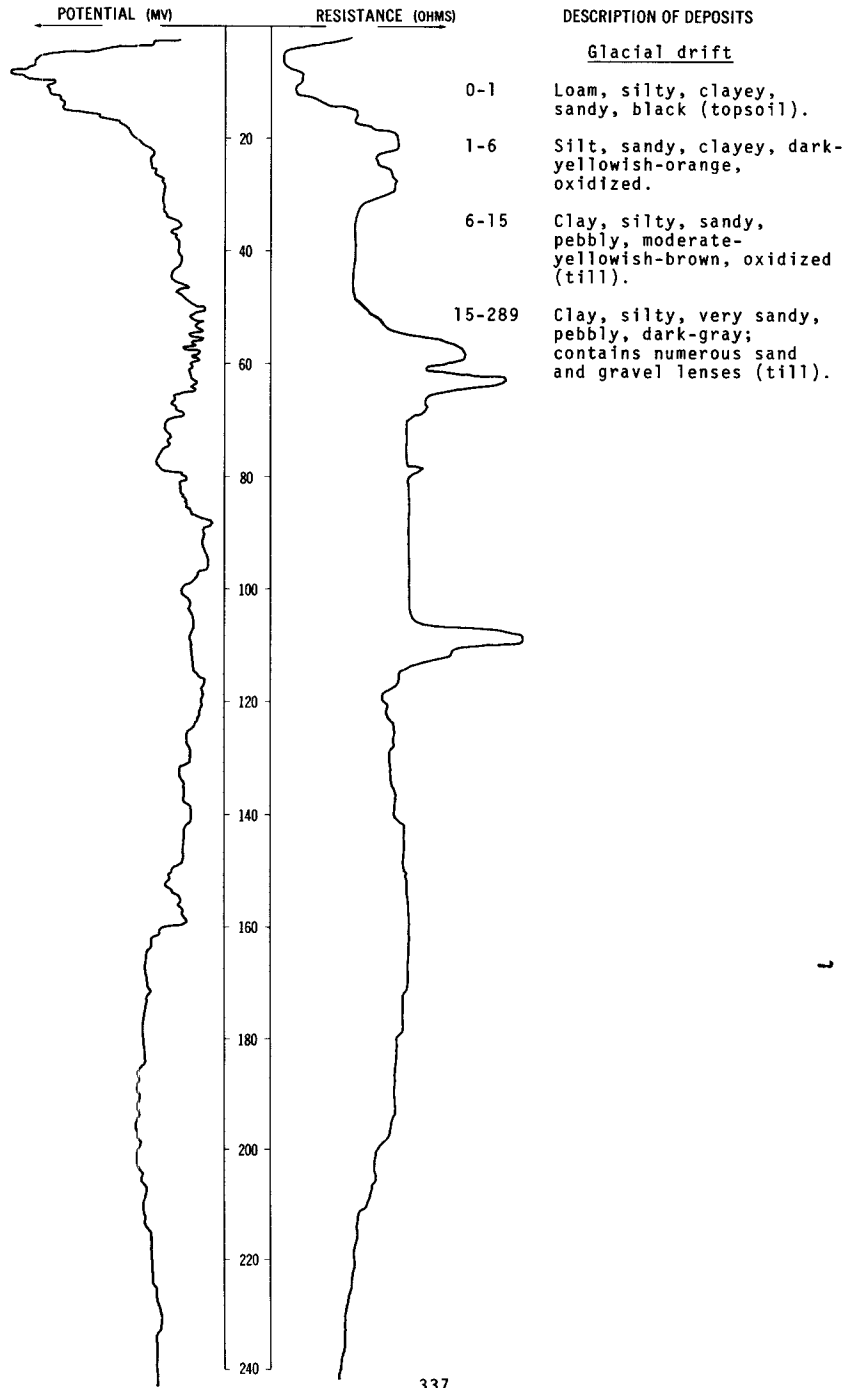
NDSWC 9073

LOCATION: 158-064-29888

DATE DRILLED: September 1974

ALTITUDE: 1490  
(FT, MSL)

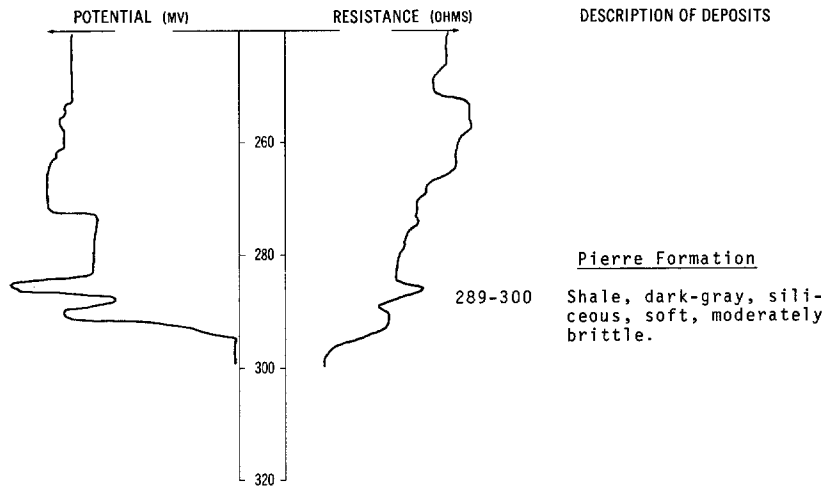
DEPTH: 300  
(FT)



NDSWC 9073, Continued

LOCATION: 158-064-29BBB  
 ALTITUDE: 1490  
 (FT, MSL)

DATE DRILLED: September 1974  
 DEPTH: 300  
 (FT)



158-064-31DDD  
 NDSWC 8782

Altitude: 1476 feet

<u>Geologic source</u>	<u>Material</u>	<u>Thickness (feet)</u>	<u>Depth (feet)</u>
Glacial drift:			
	Loam, silty, clayey, grayish-black-----	1	1
	Clay, moderately sandy, silty, pebbly, yellowish-brown, oxidized (till)-----	19	20
	Clay, slightly sandy, moderately silty, cobbly, olive-gray (till)-----	5	25
	Clay, sandy, gravelly, cobbly, olive-gray (till)-----	10	35
Pierre Formation:			
	Shale, grayish-black, siliceous, very slightly fractured-----	5	40







LOCAL IDENTIFIER	GEO-LOGIC UNIT	DATE OF SAMPLE	TOTAL DEPTH OF WELL (FT.)	DIS-SOLVED SILICA (MG/L)	DIS-SOLVED IRON (PPM)	DIS-SOLVED MANGANESE (PPM)	DIS-SOLVED CALCIUM (MG/L)	DIS-SOLVED MAGNESIUM (MG/L)	DIS-SOLVED SODIUM (MG/L)	DIS-SOLVED POTASSIUM (MG/L)	RICAR-BONATE (MG/L)	CAR-BONATE (MG/L)	ALKALI-LIMITY AS CALCIUM (MG/L)	DIS-SOLVED SILICATE (MG/L)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED FLUORIDE (MG/L)	DIS-SOLVED NITRATE (MG/L)	DIS-SOLVED DUE AT 18°C (MG/L)	DIS-SOLVED SOLIDS (RESISTIVITY) (MG/L)	HARDNESS (CA-MG) (MG/L)	NON-CAR-BONATE HARDNESS (MG/L)	PERCENT SODIUM	SODIUM AD-SORPTION RATIO	RESISTIVITY (MG/L)	SPCIFIC CONDUCTANCE @ 25°C (UMH/CM)	PH	TEMPERATURE (°C)	DIS-SOLVED BORON (MG/L)	
154-066-2500D	1125PRD	73-09-14	123	28	3300	130	120	46	130	9.8	550	0	451	310	21	.4	.20	981	941	490	38	36	2.3	.00	1380	7.6	6.5	650	
154-066-254DR	1125PRD	74-08-23	114	20	160	93	48	209	9.7	990	0	496	330	14	.8	1.0	1020	1020	520	0	25	4.2	.00	1500	7.4	7.0	720		
154-066-258AB	1125PLC	73-05-22	40	22	0	100	400	220	130	13	380	0	312	1500	85	.1	140	2850	2710	1900	1600	13	1.0	.00	3070	7.6	7.0	390	
154-066-259DA	1125PRD	74-08-28	141	21	410	160	55	23	290	9.9	570	0	448	350	44	.6	1.0	1080	1080	230	0	72	8.3	.00	1640	8.1	7.0	280	
154-066-340CD	1125PRD	73-09-24	100	31	1800	60	66	28	280	9.4	600	0	492	340	29	.3	.20	1130	1130	280	0	68	7.3	4.00	1630	7.8	6.5	950	
155-060-080C2	211PIR	72-08-04	80	22	90	90	34	14	940	12	760	0	623	130	1000	.4	7.0	2420	2560	1400	0	93	3.4	10	2490	7.7	7.0	2600	
155-060-275BC	211PIR	72-08-04	131	15	200	30	74	36	450	9.0	800	0	492	440	130	.3	2.0	1620	1450	340	0	74	11	3.00	2490	8.1	7.0	1400	
155-061-098AB	211PIR	72-08-04	90	23	150	70	21	12	580	7.6	810	0	644	490	15	.3	1.0	1680	1750	100	0	92	25	11	2570	8.1	7.0	1100	
155-061-348AA	211PIR	72-08-04	150	19	160	560	300	170	750	16	530	0	435	2100	360	.2	62	3920	4040	1400	1000	53	8.6	.00	5030	7.6	7.0	430	
155-062-040DD	1128GFV	73-08-07	183	22	100	890	160	49	660	20	400	0	328	370	1000	.2	12	2940	2490	600	270	70	12	.00	4130	7.4	8.0	600	
155-062-070DD	211PIR	72-08-04	90	24	90	240	52	26	620	9.8	600	0	492	460	300	.4	31	2040	2020	240	0	84	18	5.00	3140	7.4	7.0	970	
155-062-188AA2	1128GFV	74-09-17	141	18	80	240	66	18	340	9.9	620	0	509	490	30	.2	1.0	1240	1240	240	0	75	9.6	.00	1840	7.9	6.5	870	
155-062-270CD	211PIR	72-08-04	70	22	1200	750	110	39	500	9.7	620	0	499	490	260	.2	3.8	1890	1890	440	0	71	10	1.00	2840	7.9	7.0	1300	
155-063-080CD	211PIR	73-05-24	147	24	0	80	22	10	1100	11	780	0	490	14	1300	.3	1.0	2910	2870	97	0	66	49	11	5040	7.9	7.0	480	
155-063-308AB	211PIR	73-05-24	96	26	0	60	19	8.0	840	10	720	0	591	14	950	.4	1.9	2200	2230	83	0	95	40	10	3970	7.9	7.0	4300	
155-063-258AA	1128GFV	73-08-09	223	26	360	1500	210	67	520	19	390	0	320	310	960	.2	11	2430	2320	800	480	58	8.0	.00	3930	7.6	6.0	1600	
155-064-09AAA	1128GFV	73-08-15	80	25	330	720	130	30	390	13	480	0	394	430	180	.4	.50	1780	1440	490	55	65	8.0	.00	2470	7.5	6.5	1100	
155-064-09AAA2	211PIR	74-08-29	127	18	180	100	20	8.3	1100	11	850	0	697	47	1200	.7	1.0	2740	2830	84	0	96	52	.00	4840	7.9	7.0	3700	
155-064-09ABC1	211PIR	73-05-23	130	24	100	140	53	30	1600	17	560	0	459	15	2300	.2	1.0	4220	4920	260	0	93	44	4.00	7650	7.8	7.0	4800	
155-064-198BC	1128GFV	48-08-21	45	--	2200	--	14	9.2	--	--	340	65	591	600	210	.0	4.3	--	1810	73	0	--	--	10	--	--	--	--	--
155-064-298B2	211PIR	48-08-21	190	--	3000	--	200	72	--	--	960	72	604	3500	43	.0	8.7	--	5760	780	230	--	--	400	--	--	--	--	--
155-064-348BA	211PIR	73-05-22	63	41	120	150	23	13	140	6.7	140	0	281	140	5.9	.5	.60	550	530	110	0	72	5.7	.00	804	8.0	8.0	380	
155-064-348BA	211PIR	73-05-23	63	15	--	340	60	27	140	8.1	410	0	388	200	6.0	.1	1.0	652	668	260	0	53	3.8	2.00	1040	8.1	8.0	600	
155-064-348DA	1128GFV	50-11-03	78	--	--	--	13	19	--	--	300	14	259	400	6.6	--	--	--	1050	110	0	--	--	3.00	--	--	--	--	--
155-064-080DD	1128GFV	73-08-17	50	26	1000	970	150	38	140	9.2	660	0	377	430	17	.4	1.0	1040	1040	530	150	36	2.6	.00	1450	7.5	6.0	690	
155-064-09AD4	211PIR	74-08-21	72	20	2000	2400	130	52	160	8.3	910	0	418	390	57	.5	5.7	1120	1080	540	120	39	3.0	.00	1540	7.2	7.0	350	
155-065-188DA	1128GFV	73-05-23	75	26	420	160	21	9.1	340	7.3	570	0	350	420	73	.4	6.3	1510	1440	90	0	92	25	9.00	2400	8.1	7.0	2000	
155-065-308BB	1125PRD	74-08-21	101	22	3900	420	100	56	200	10	510	0	418	590	51	.4	1.0	1410	1390	630	210	40	3.5	.00	1870	7.8	6.5	350	
155-065-340CC	211PIR	73-05-23	119	26	280	100	9.8	4.7	690	7.7	1020	0	837	95	450	.7	2.5	1840	1790	44	0	97	45	16	3040	8.1	7.0	340	
155-066-040CC	1125PRD	74-08-22	141	22	1700	800	84	29	250	6.7	520	0	427	320	92	.4	2.1	1070	1070	330	0	62	6.0	.00	1640	7.7	6.5	390	
155-066-098BC	1125PRD	73-05-22	120	19	810	60	49	27	210	10	560	0	459	370	41	.4	6.7	1140	1120	230	0	73	8.8	4.00	1700	7.8	7.0	630	
155-066-098CC	1128GFV	72-11-17	90	14	1500	140	30	19	460	9.1	600	0	492	500	120	.4	7.0	1420	1480	150	0	86	16	700	2200	7.8	7.0	1200	
155-066-078BA2	211PIR	74-08-23	180	28	--	380	32	15	480	9.4	990	0	484	420	210	.5	1.0	1480	1440	140	0	87	18	.00	2330	7.8	7.0	1400	
155-066-098AA	1125PRD	74-08-30	121	17	250	180	100	44	220	11	500	0	410	410	110	.2	1.0	1220	1180	480	71	49	4.4	.00	1820	7.8	6.5	200	
155-066-114AA	1128GFV	74-09-04	284	19	1500	100	58	22	860	14	650	0	533	130	1000	.3	1.0	2480	2430	230	0	84	25	.00	4400	8.1	7.5	2000	
155-066-228DC1	211PIR	73-06-04	400	20	420	88	30	68	7.2	360	0	295	170	9.4	.4	2.5	512	548	340	46	28	1.5	.00	884	8.0	7.0	0		
155-066-258B2	1128GFV	74-08-27	75	21	--	400	160	50	130	4.2	570	0	488	420	14	.4	3.3	1110	1100	630	160	31	2.3	.00	1580	7.3	7.0	380	
155-066-268CB	1125PRD	73-05-22	155	11	120	40	39	19	240	7.3	360	0	295	360	26	.2	3.4	852	884	170	0	74	7.9	2.00	1360	8.2	7.0	130	
155-066-240CC	1125PRD	73-09-13	123	27	2600	20	120	48	250	11	610	0	900	900	20	.4	.20	1320	1280	490	0	52	4.9	.00	1790	7.6	7.5	340	
155-066-240CC	1125PRD	74-08-21	121	19	5600	480	220	66	87	9.8	430	0	349	900	14	.1	.00	1340	1230	820	450	19	1.3	.00	1840	7.6	7.0	200	
156-060-04AAA	211PIR	72-08-03	60	24	90	130	4.3	18	1000	13	810	0	771	890	510	.4	1.9	3050	2980	180	0	92	32	12	4610	7.9	7.0	280	
156-060-28ACD1	1128GFV	71-07-20	85	25	0	370	280	330	1000	57	810	0	644	2300	850	.2	17.0	5270	5420	2100	1400	51	9.6	.00	7030	7.7	9.0	90	
156-060-288AA	1125PRD	72-08-03	30	26	80	300	100	190	160	11	550	0	451	1300	31	.4	1.1	2510	2300	1500	1100	18	1.8	.00	2790	7.7	7.0	110	
156-060-288BB	211PIR	71-07-21	92	26	240	130	53	41	1100																				

LOCAL IDENTIFIER	GEO-LOGIC UNIT	DATE OF SAMPLE	TOTAL DEPTH (FT.)	DIS-SOLVED SILICA (MG/L)	DIS-SOLVED IRON (PPM)	DIS-SOLVED MANGANESE (PPM)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED SULFIDE (MG/L)	DIS-SOLVED NITRATE (MG/L)	DIS-SOLVED PHOSPHATE (MG/L)	DIS-SOLVED AMMONIUM (MG/L)	DIS-SOLVED BORATE (MG/L)	ALKALINITY (MG/L)	DIS-SOLVED SULFATE (MG/L)	DIS-SOLVED CHLORIDE (MG/L)	DIS-SOLVED FLUORIDE (MG/L)	DIS-SOLVED NITRATE (MG/L)	DIS-SOLVED DUE AT 100°C (MG/L)	DIS-SOLVED SOLIDS (MG/L)	DIS-SOLVED SOLIDS (SUM OF TURBID) (MG/L)	HARDNESS (CA, MG)	HARDNESS (MAGNESIUM) (MG/L)	PERCENT SOLIDS	SOLIDS ADJUSTED RATIO	RESIDUAL CARBONATE (MG/L)	SPECIFIC CONDUCTANCE @ 25°C (UMHOS/CM)	PH (UNITS)	TEMPERATURE (°C)	DIS-SOLVED SOLIDS (MG/L)
156-044-20C4B	211PIR	72-08-03	95	25	0	10	11	5.1	740	8.0	800	0	654	100	700	4.8	7.7	2040	2020	49	0	97	48	12	3340	7.9	---	2900	
156-045-10BCC	211PIR	74-08-28	97	13	160	760	630	740	1300	21	740	0	607	6400	270	4.2	37	10750	9800	4700	4100	37	8.3	---	9990	7.6	---	590	
156-045-22D00	112BGFV	73-08-10	60	24	0	220	63	15	290	10	440	0	361	210	210	-3	3.8	1050	1050	220	0	73	6.5	3.000	1720	7.9	7.0	380	
156-045-24C9B	211PIR	72-08-02	100	24	0	90	38	26	12	14	770	0	625	37	1700	4.4	1.0	3070	2240	200	0	11	4.4	9.00	5550	7.7	---	2900	
156-046-12CCC	112BGFV	73-08-14	60	27	1900	80	62	26	430	9.8	630	0	517	420	170	4.5	4.4	1400	1440	260	0	77	12	5.00	2240	7.8	6.0	1700	
156-046-29CCC	112PISC	72-08-03	90	24	0	140	55	24	920	15	670	0	550	70	1200	4.4	0.00	2560	2640	230	0	89	26	6.00	4680	7.8	---	2900	
156-046-31CCA1	211PIR	72-08-03	200	25	0	220	72	29	920	14	680	0	558	42	1300	4.3	1.0	2790	2740	300	0	86	23	5.00	4840	7.7	---	2900	
156-046-31D00	211PIR	72-11-17	200	27	3900	500	72	37	950	16	670	0	550	3.3	1300	4.3	1.0	2540	2750	330	0	85	23	4.00	4950	7.8	---	4400	
156-046-31D00	112SPMD	73-08-15	103	31	380	490	63	20	310	9.1	560	0	459	410	47	-5	2.6	1130	1170	240	0	73	8.7	4.00	1760	7.6	6.0	690	
156-046-31B8B	112BGFV	73-08-14	409	30	400	170	52	15	600	13	490	0	402	190	730	-5	0.70	1890	1810	190	0	87	20	4.00	3360	7.7	7.2	1190	
157-040-03A4B2	211PIR	72-07-20	90	25	0	740	120	55	1500	21	940	0	771	1300	1300	-1	1.0	4970	4790	530	0	84	28	5.00	7030	7.4	---	2600	
157-040-18CCC	1121CCC	72-07-20	6	25	160	50	49	24	10	1.8	270	0	221	15	1100	4.1	14	297	272	220	1	9	3	0.00	443	7.9	---	110	
157-041-030CC	211PIR	72-07-20	150	25	80	88	33	3.3	1200	13	950	0	779	320	1100	-3	13	3110	3180	96	0	96	53	14	5130	7.9	---	2900	
157-041-130A01	1121CCC	73-10-05	17	23	40	760	62	23	78	8.4	310	0	254	130	31	-2	1.0	525	508	250	0	39	2.1	0.00	873	8.1	5.5	40	
157-041-130AC	1121CCC	73-06-12	21	20	100	320	62	29	76	7.8	280	0	291	190	17	-1	2.0	525	540	270	43	37	2.0	0.00	807	7.9	---	60	
157-041-37C8B	112PISC	72-07-20	60	22	0	50	38	18	1200	13	930	0	763	1000	700	-4	13	3520	3470	170	0	93	40	12	5040	8.0	---	2400	
157-042-06B4B7	211PIR	72-07-20	90	25	80	150	42	21	1200	15	820	0	673	1500	350	-3	9.2	3660	3970	190	0	93	38	10	4980	8.1	---	1800	
157-042-29DAA	211PIR	72-07-20	100	25	0	209	23	18	890	13	880	0	722	890	340	-3	9.3	2720	2650	130	0	93	34	12	3840	7.9	---	2600	
157-042-2888C	112BGFV	73-08-03	55	22	20	760	75	22	490	10	560	0	459	680	140	-4	1.0	1630	1720	280	0	79	13	4.00	2540	8.1	7.0	500	
157-043-12C8C	211PIR	72-07-21	125	20	0	100	16	7.1	920	9.7	830	0	681	120	940	4.4	1.0	2490	2450	68	0	96	48	12	4180	8.2	---	2400	
157-043-18AAA	112BGFV	74-09-11	141	18	1000	2700	240	73	330	13	480	0	394	170	770	-1	1.0	1980	1860	900	510	44	4.8	---	3310	7.4	5.5	510	
157-043-27CCC	112BGFV	74-09-04	141	19	1100	850	140	46	220	8.8	460	0	377	360	210	-1	1.0	1230	1230	540	140	47	4.1	---	1920	7.8	6.5	470	
157-043-28B4A	112PISC	72-07-21	90	27	80	410	130	75	200	25	550	0	451	300	240	-4	6.1	1380	1280	640	190	40	3.5	0.00	2130	7.5	---	110	
157-043-34B4B2	112BGFV	74-09-04	141	18	80	520	110	30	64	6.0	380	0	312	140	68	-1	1.0	637	623	400	87	26	1.4	---	1010	7.9	6.0	350	
157-044-02B00	211PIR	72-07-21	140	24	90	100	19	6.2	560	5.4	610	0	500	610	120	4.4	3.0	1730	1650	73	0	94	29	8.00	2480	8.2	---	1900	
157-044-0300D	112BGFV	74-09-10	271	20	1000	1400	39	950	17	620	0	509	690	1000	-2	1.0	3270	3170	510	2	80	18	---	5120	8.0	6.5	1200		
157-044-0700A3	211PIR	74-08-09	144	14	---	260	57	24	1900	17	780	0	640	16	2700	-1	1.0	5340	5120	240	0	94	53	---	5040	7.4	---	4700	
157-044-23B81	211PIR	72-07-21	90	25	200	60	13	5.2	870	8.2	850	0	697	450	590	1.5	9.6	2410	2400	54	0	97	52	13	3750	7.9	---	9600	
157-044-35A0B	211PIR	74-08-29	118	17	810	20	13	6.7	810	7.5	850	0	697	98	780	-5	1.3	2150	2140	60	0	96	45	---	3720	7.9	---	3600	
158-040-11B4A	211PIR	72-07-20	80	29	90	80	210	76	320	15	340	0	270	1000	82	-3	170	2180	2070	630	550	45	4.8	0.00	2680	7.3	---	0	
158-040-24ACC	211PIR	72-07-20	18	24	90	60	62	42	6.0	2.3	400	0	328	10	0	-1	---	372	350	330	0	4	4.1	0.00	607	7.8	---	290	
158-040-30BDC	211PIR	72-11-09	83	26	160	240	64	32	2000	22	800	0	656	4.9	3000	-2	1.0	5150	5550	290	0	93	51	7.00	9680	7.8	---	4500	
158-041-01C0B1	211PIR	72-07-20	110	25	40	120	48	23	1600	18	900	0	612	420	1800	-2	3.2	4560	4430	220	0	94	48	12	6090	7.5	---	3200	
158-041-1400D	211PIR	72-07-20	104	25	0	90	38	17	1500	17	900	0	738	150	1900	-3	3.2	3950	4100	160	0	95	51	12.00	6580	7.6	---	3000	
158-041-29AAA	211PIR	72-11-10	107	26	640	240	43	31	1700	18	750	0	615	4.9	2400	-3	2.0	4700	4600	240	0	93	48	9.00	6020	7.9	---	4300	
158-042-04BAA	211PIR	72-11-09	182	25	0	320	30	14	1300	17	890	0	720	1.2	1700	-3	4.0	3460	3590	130	0	95	49	12	6200	7.9	---	4300	
158-042-05B4D	211PIR	74-09-09	113	17	1100	100	26	11	1000	13	840	0	705	610	740	-5	8.0	2880	2850	110	0	94	41	---	4630	7.8	---	3700	
158-042-10BAA	211PIR	72-07-20	105	26	0	10	20	8.8	760	9.6	820	0	673	970	87	-6	9.8	2140	2300	86	0	94	36	12	3160	6.0	---	1500	
158-042-39CCC	211PIR	72-07-21	168	27	0	50	11	4.3	720	7.8	620	0	509	300	710	-6	1.9	1920	1920	45	0	97	47	8.00	3290	7.8	---	1800	
158-043-1100D	211PIR	72-07-21	111	24	80	80	17	7.4	920	11	640	0	641	540	720	-5	1.9	2390	2570	73	0	96	67	9.00	4090	7.4	---	2400	
158-043-25ABD	211PIR	69-04-08	150	25	940	---	35	16	1500	---	770	0	632	33	2000	-4	1.4	4080	3950	150	0	---	53	---	4950	8.1	---	---	
158-043-25ABD	211PIR	71-08-25	150	27	2900	120	36	16	1500	16	750	0	615	120	1900	-4	3.6	3980	3990	160	0	95	52	---	7090	7.7	---	---	
158-043-32AAA	112BGFV	73-07-26	163	27	290	110	71	18	920	14	630	0	517	560	870	-4	1.0	2900	2350	99	0	94	35	9.00	3420	8.0	---	1100	
158-043-2900D	112TILL	72-07-21	86	25	0	250	25	8.9	800	9.7	650	0	533																

TABLE 5.--Particle-size analyses  
(Data from U.S. Geological Survey Hydrologic Laboratory)

Well number	Sampling depth (feet)	Aquifer	Particle-size diameter in millimeters											Median grain size (mm)	Sorting coefficient	
			Clay sizes <0.004	Silt sizes 0.004-0.0625	Sand sizes					Gravel sizes						
					Very fine 0.0625-0.125	Fine 0.125-0.25	Medium 0.25-0.5	Coarse 0.5-1.0	Very coarse 1-2	Very fine 2-4	Fine 4-8	Medium 8-16	Coarse 16-32			Very coarse 32-64
151-062-09ABB	180-200	112SPRD	1.6	1.1	4.5	11.9	42.9	15.2	10.8	8.8	3.2	0.0	0.0	0.82	1.8	
152-062-27AAA	160-180	112SPRD	1.8	.3	1.1	4.5	23.5	22.4	16.1	14.6	13.6	2.3	.0	1.8	2.5	
153-062-17AAD	60-75	112BGFV	3.2	4.8	34.9	50.1	6.5	.4	.0	.0	.0	.0	.0	.28	1.5	
153-062-29CCC	40-60	112BGFV	.8	.5	2.5	15.3	32.7	17.5	11.4	9.4	7.7	2.1	.0	.96	2.2	
153-063-29ADD	110-120	112SPRD	1.1	.3	2.1	9.4	45.3	21.0	11.0	7.1	2.7	.0	.0	.88	1.7	
153-063-29ADD	130-140	112SPRD	1.0	.3	1.6	15.5	48.7	13.9	7.7	6.4	5.0	.0	.0	.78	1.6	
153-064-19AAB2	130-140	112SPRD	1.3	1.1	4.3	9.8	32.7	18.1	13.4	12.4	6.0	.8	.0	1.0	2.2	
153-065-03BBB	140-160	112SPRD	.9	.3	2.6	25.8	23.4	11.8	10.1	21.6	3.2	.4	.0	.92	3.0	
153-065-04CCD	100-120	112SPRD	2.3	3.6	25.2	21.6	27.8	10.1	4.7	3.4	1.4	.0	.0	.46	2.0	
153-065-11ADD	120-140	112SPRD	.9	.5	2.0	11.2	17.4	17.2	14.6	16.5	18.1	1.7	.0	2.1	2.9	
154-064-12CCC	40-80	112BGFV	4.3	5.6	25.8	36.7	19.1	6.6	1.6	.3	.0	.0	.0	.33	1.7	
154-065-21CCC	110-140	112SPRD	1.0	1.1	6.6	24.5	22.6	17.7	9.7	8.6	6.5	1.8	.0	.84	2.4	
154-065-35AAA	130-150	112SPRD	2.7	1.6	13.1	41.5	31.7	6.8	1.9	.5	.0	.0	.0	.43	1.6	
154-066-01CCC	130-150	112SPRD	2.9	1.3	7.3	31.4	31.6	14.9	7.4	2.1	1.1	.0	.0	.58	1.7	
154-066-15DDD	75-95	112SPRD	2.8	2.3	16.3	23.7	38.1	9.2	3.7	2.4	1.3	.0	.0	.55	1.8	
154-066-23CCC	80-100	112SPRD	2.1	3.2	12.8	41.0	32.2	5.6	1.8	1.1	.2	.0	.0	.43	1.6	
155-065-30BBB	90-110	112SPRD	1.4	1.9	8.0	34.1	39.2	8.8	2.9	2.1	1.1	.4	.0	.54	1.6	
155-066-09AAA	80-110	112SPRD	2.5	4.6	20.6	21.8	37.9	7.1	2.5	2.0	1.0	.0	.0	.50	1.9	
155-066-09AAA	120-140	112SPRD	.7	.7	2.4	3.1	27.3	21.8	15.2	14.0	10.8	4.1	.0	1.7	2.5	
155-066-26CCC2	110-130	112SPRD	.5	1.6	3.8	9.7	46.0	18.3	10.0	5.9	1.9	.8	.0	.82	1.7	
155-066-32AAA	110-125	112SPRD	2.8	1.7	3.6	19.4	26.4	16.4	11.6	10.9	6.6	.6	.0	.90	2.4	
156-063-10CDD	60-80	112BGFV	2.8	3.9	35.3	52.9	4.3	.8	.0	.0	.0	.0	.0	.28	1.5	

Appendix A

Temperature Conversion Table

Degrees Celsius (°C)	Degrees Fahrenheit (°F)	Degrees Celsius (°C)	Degrees Fahrenheit (°F)	Degrees Celsius (°C)	Degrees Fahrenheit (°F)
3.5	38	12.5	54	21.5	71
4.0	39	13.0	55	22.0	72
4.5	40	13.5	56	22.5	72
5.0	41	14.0	57	23.0	73
5.5	42	14.5	58	23.5	74
6.0	43	15.0	59	24.0	75
6.5	44	15.5	60	24.5	76
7.0	45	16.0	61	25.0	77
7.5	45	16.5	62	25.5	78
8.0	46	17.0	63	26.0	79
8.5	47	17.5	63	26.5	80
9.0	48	18.0	64	27.0	81
9.5	49	18.5	65	27.5	81
10.0	50	19.0	66	28.0	82
10.5	51	19.5	67	28.5	83
11.0	52	20.0	68	29.0	84
11.5	53	20.5	69	29.5	85
12.0	54	21.0	70		