

GROUND-WATER DATA

for

**SHERIDAN COUNTY,
NORTH DAKOTA**

by

M. R. Burkart

U.S. Geological Survey

COUNTY GROUND-WATER STUDIES 32 — PART II

North Dakota State Water Commission

Vernon Fahy, State Engineer

BULLETIN 75 — PART II

North Dakota Geological Survey

Lee Gerhard, State Geologist

Prepared by the U.S. Geological Survey
in cooperation with the North Dakota Geological Survey,
North Dakota State Water Commission,
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CONTENTS

	<u>Page</u>
Introduction-----	1
Purpose-----	1
Location-numbering system-----	1
Acknowledgments-----	3
Explanation of tables and methods of data collection-----	3
Records of wells and test holes-----	5
Water levels in selected wells-----	5
Logs of wells and test holes-----	5
Water quality-----	6
Mineral constituents in solution-----	7
Properties and characteristics of water-----	10
Selected references-----	12

ILLUSTRATIONS

Plate 1. Map showing locations of wells and test holes in Sheridan County, North Dakota-----	(in pocket)
Figure 1. Map showing location of county ground-water studies in North Dakota-----	2
2. Diagram showing location-numbering system-----	4

TABLES

Table 1. Records of wells and test holes-----	15
2. Water levels in selected wells-----	24
3. Logs of wells and test holes-----	33
4. Chemical analyses of ground water-----	301

SELECTED FACTORS FOR CONVERTING
INCH-POUND UNITS TO THE INTERNATIONAL SYSTEM (SI)
OF METRIC UNITS

A dual system of measurements--inch-pound units and the International System (SI) of metric units--is given in this report. SI is an organized system of units adopted by the 11th General Conference of Weights and Measures in 1960. Selected factors for converting inch-pound units to SI units are given below.

<u>Multiply inch-pound unit</u>	<u>By</u>	<u>To obtain SI unit</u>
Acre	0.4047	hectare (ha)
Foot (ft)	.3048	meter (m)
Inch (in)	25.4	millimeter (mm)

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INTRODUCTION

The investigation of the geology and occurrence of ground-water in Sheridan County (fig. 1) was made cooperatively by the U.S. Geological Survey, North Dakota State Water Commission, North Dakota Geological Survey, and Sheridan County Water Management District. 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, a compilation of the ground-water data, makes available geologic and hydrologic data collected during the county investigation and functions as a reference for the other reports. Part III is an interpretive report describing the ground-water resources.

Purpose

The purpose of the investigation was to determine the availability and quality of ground water for municipal, domestic, industrial, and irrigation uses. Specifically, the objectives were to: (1) determine the location, extent, and nature of the major aquifers; (2) evaluate the occurrence and movement of ground water, including the sources of recharge and discharge; (3) estimate the quantities of water stored in the aquifers; (4) estimate the potential yields of wells tapping the major aquifers; (5) evaluate the chemical quality of the ground water; and (6) estimate the water use.

Location-Numbering System

The location-numbering system used in this report is based on the

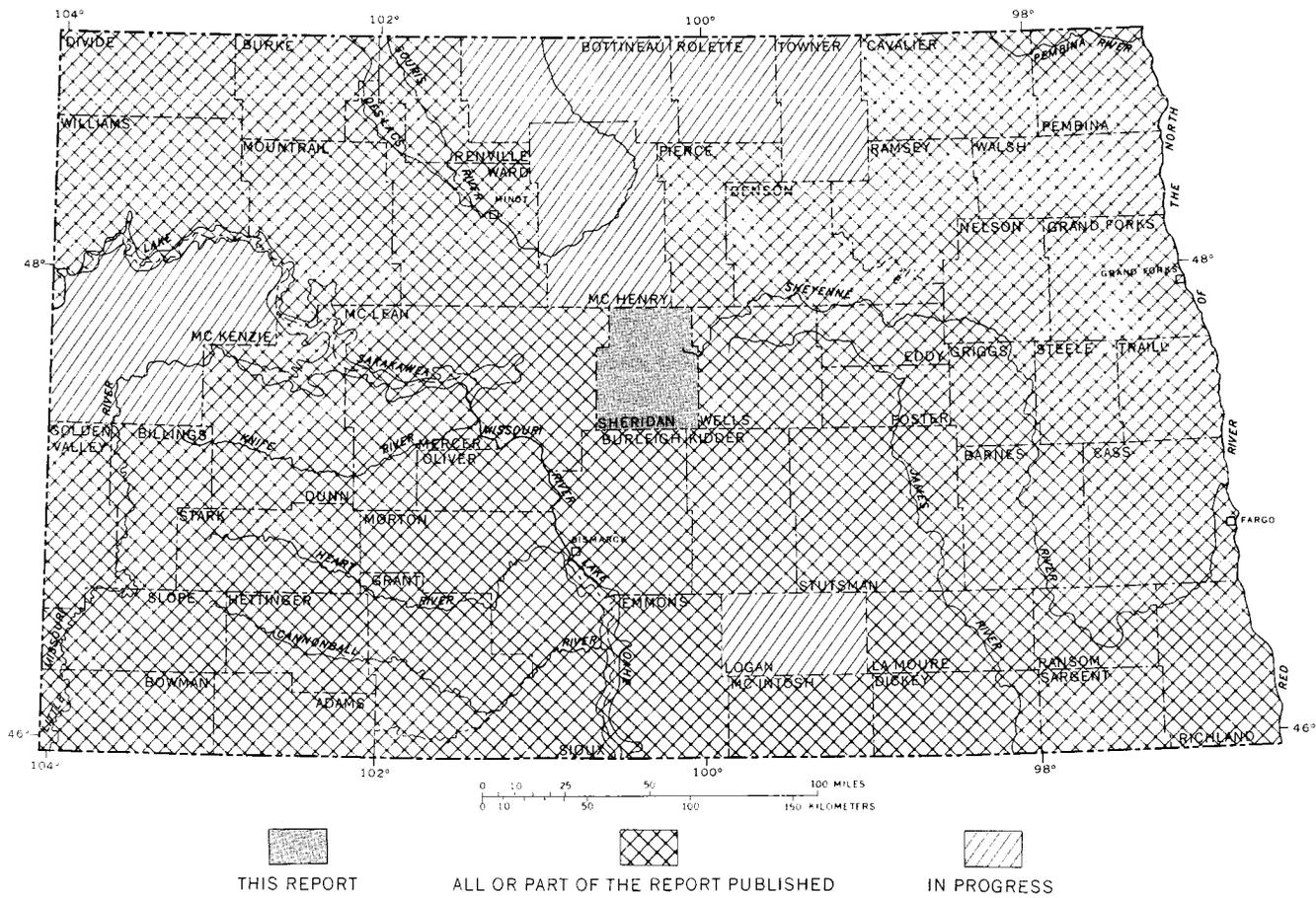


FIGURE 1.—County ground-water studies in North Dakota.

public land classification system used by the U.S. Bureau of Land Management. The 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 148-076-15ADC is in the SW $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 15, T. 148 N., R. 76 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 Sheridan County who furnished information on wells and permitted water-level measurements and the collection of water samples. Particular recognition is due to the following North Dakota State Water Commission personnel: G. L. Sunderland for logging of test holes, G. O. Muri for chemical analyses of water samples, and M. O. Lindvig for scheduling of drilling activities. Thanks are due to the various well drillers and drilling companies that furnished drillers' logs and other information in this report.

EXPLANATION OF TABLES AND METHODS OF DATA COLLECTION

The data in this report, which were collected chiefly between 1976 and 1979, are listed in tables 1-4. The points of collection are shown on plate 1. The data consist of the following: (1) Geologic and hydrologic records for 320 wells and test holes; (2) water-level measurements in 61 observation wells; (3) lithologic and geophysical logs of 308 test holes and wells; and (4) chemical analyses of 93 ground-water samples. The data may be used in evaluating geologic and ground-water conditions in Sheridan County. For example, a person

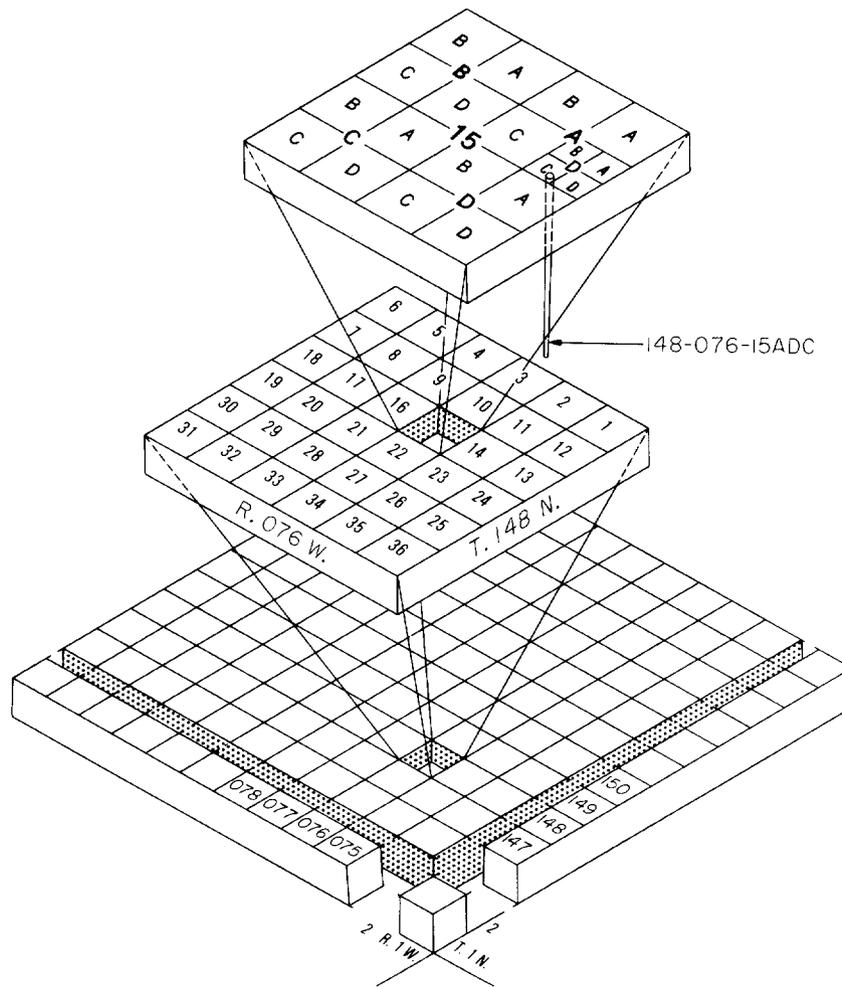


FIGURE 2.—Location-numbering system.

considering the construction of a new well can locate the proposed site on plate 1. Depths, water quality, lithologies, and water levels 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 listed in table 1. Well depth is the depth of casing for open-bottom wells or the base of the well screen. Many test holes drilled by the North Dakota State Water Commission were converted to observation wells for periodic water-level measurements and water-quality sampling. At some sites two or three observation wells were drilled in order to obtain water levels and water samples from several aquifers. The North Dakota State Water Commission observation wells were constructed of 1½-inch (32-mm) plastic casing or 2-inch (51-mm) steel casing with 3- or 6-foot (1- or 2-m) screens. The observation wells were developed by backwashing and were pumped a minimum of 8 hours for development before collection of water samples for analysis.

Water Levels in Selected Wells

Table 2 lists the monthly and intermittent water levels in selected wells, in feet below or (+) above land surface, that tap the major aquifers in Sheridan County. The water-level measurements made as part of this investigation began in late 1977 and extended through December 1979. Measurements will continue to be made in several wells as part of the statewide observation-well network to monitor changes in water levels as the ground-water resources of the area are developed.

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; however, geologic interpretations shown on commercial and private well logs are those of the drillers. Most test holes drilled during this project have geophysical logs in addition to a description of the materials penetrated. The geophysical logs are extremely useful for geologic correlation purposes. Grain-size determinations refer to the Wentworth (1922) size scale. The color descriptions were determined by comparing fresh samples with the Geological Society of America's rock color chart (1963).

Water Quality

The mineral constituents and physical properties of water are reported in the table of analyses (table 4). Water for samples was secured from privately owned wells by using the existing pumps and from the North Dakota State Water Commission observation wells by airlift. Generally enough water was pumped to clear the well column and plumbing, then the sample was collected in a polyethylene bottle. For those metals considered unstable, a separate sample was filtered and acidified before transport to the laboratory. The samples 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 by the National Academy of Sciences-National Academy of Engineering (1972) at the request of the Environmental Protection Agency and are generally accepted as applicable to public water supplies. These standards include the following recommended limits: iron (Fe), 300 $\mu\text{g/L}$; manganese (Mn), 50 $\mu\text{g/L}$; sulfate (SO_4), 250 mg/L; and chloride (Cl), 250 mg/L.

The following summation for farmstead use is modified from the Federal Water Pollution Control Administration (1968, p. 116).

KEY WATER QUALITY CRITERIA FOR FARMSTEAD USES

Recommendations (at point of use)

<u>Characteristic</u>	<u>General farmstead uses</u>	<u>Additional special-use requirements</u>
Taste and odor-----	Substantially free-----	
Color-----	Substantially free-----	
pH-----	6.0 to 8.5-----	6.8 to 8.5 dairy sanitation
Total dissolved inorganic solids-	500 mg/L (under certain circumstances, higher levels are acceptable)----	
Turbidity-----	Substantially free-----	
Hazardous trace elements-----	Levels in excess of those shown are grounds for rejection of a supply:	
	Substances	
	Arsenic (ug/L)----- ¹ 50	
	Barium (ug/L)----- ¹ 1000	
	Cadmium (ug/L)----- ¹ 10	
	Chromium (ug/L)----- ¹ 50	
	Cyanides (mg/L)-----0.2	
	Lead (ug/L)----- ¹ 50	
	Selenium (ug/L)----- ¹ 10	
	Silver (ug/L)----- ¹ 50	
Other trace elements-----	Levels shown below should not be exceeded if alternate sources are available:	
	Substances	
	Manganese (ug/L)-----50	In dairy sanitation, water
	Iron (ug/L)-----300	should contain <20 mg/L
	Copper (ug/L)-----1000	potassium and <0.1 mg/L
	Zinc (ug/L)-----5000	iron and copper.
	Fluoride (mg/L)--0.7-1.2 (¹ 2.4)	
	Nitrate (as N) (mg/L)---- ¹ 10	

¹Maximum permitted levels of inorganic chemicals in public water systems of North Dakota; set by the North Dakota State Department of Health (1977).

Mineral Constituents in Solution

Silica (SiO₂)

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 300 ug/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 ug/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 (HCO_3 and 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:

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

Sulfate (SO₄)

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 (NO₃)

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 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 often uses the following classification of water hardness.

<u>Calcium and magnesium hardness, as CaCO₃ (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 SAR (sodium-adsorption ratio) 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. Sodium-adsorption ratio is expressed by the equation:

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

where the concentrations of the ions are expressed in milliequivalents per liter. The U.S. Salinity Laboratory Staff (1954) divided water into 16 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 (in micromhos) 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 one 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 temperatures given in tables 1 and 4 are expressed in degrees Celsius (Centigrade). Degrees Celsius and the equivalent temperature in degrees Fahrenheit are given in the following 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	30.0	86

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TABLE 1.--Records of wells and test holes

<u>Owner</u>	<u>Specific conductance</u>
NDSWC 5352, North Dakota State Water Commission, test hole number 5352	Value shown is the field specific conductance measured at the well at the time of inventory.
USBR, United States Bureau of Reclamation	
USAF, United States Air Force	
	<u>Altitude of land surface (feet)</u>
<u>Water level (feet)</u>	National Geodetic Vertical Datum of 1929 (NGVD) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.
Water level, in feet below or (+) above land surface	
O, obstruction	
P, pumping	
Z, other	
<u>Use of water</u>	
H, domestic	
I, irrigation	
P, public supply	
S, stock	
T, institution	
U, unused	
Z, other	
<u>Principal aquifer</u>	
112, Pleistocene	
211, Upper Cretaceous	
BGFV, buried glaciofluvial deposits	
BUTT, Butte aquifer	
FXHL, Fox Hills aquifer system	
HCFH, Hell Creek-Fox Hills aquifer system	
LKNTL, Lower Lake Nettie aquifer system	
LKNTU, Upper Lake Nettie aquifer system	
MRTN, Martin aquifer system	
NBLG, North Burleigh aquifer	
PWCK, Painted Woods Creek aquifer	

LOCAL NUMBER	OWNER	DEPTH DRILLED (FEET)	DEPTH UP WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAMETER (INCHES)	DATE COMPLETED	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	USE OF WATER	PRINCIPAL AQUIFER	SPECIFIC CONDUCTANCE (UMHO/CM AT 25°C)	TEMPERATURE (DEGREES C)	ALTITUDE OF LAND SURFACE (FEET)
145-074-06AAD	NUSWC 5352	475	--	--	--	07/27/1978	--	--	U	--	--	--	2074
145-074-06DCC	NUSWC 5353	315	--	--	--	07/27/1978	--	--	U	--	--	--	2020
145-074-08AAA	BERKEIM, ARNOLD	535	535	505	4	09/07/1974	80.00	09/07/1974	H,S	211MCFH	1450	13.0	--
145-074-29ADD	NUSWC 11011	200	--	--	--	08/06/1979	--	--	--	--	--	--	1990
145-074-320DD	HAWLEY, RICHARD	235	235	190	4	05/01/1973	78.00	05/01/1973	H,S	112BGFV	1190	11.5	--
145-074-34D	HAWLEY, C	292	88	68	12	05/20/1976	42.90	05/20/1976	I	--	--	--	--
145-075-070CD	NUSWC 10243	340	--	--	--	08/29/1978	--	--	U	--	--	--	2000
145-075-0988B1	NUSWC 5251	782	457	451	2	10/11/1977	2.70*	09/18/1978	U	211FXHL	1280	9.5	1945
145-075-0988B2	NUSWC 5251A	290	281	278	1.25	10/13/1977	1.65*	09/18/1978	U	112LKNTU	1450	8.0	1945
145-075-0988B3	NUSWC 5251B	210	204	198	1.25	10/13/1977	1.17	05/18/1978	U	112LKNTU	910	8.0	1945
145-075-13AAA	NUSWC 5354	295	--	--	--	07/28/1978	--	--	U	--	--	--	2020
145-075-140DD	NUSWC 5252	362	341	338	1.25	10/13/1977	107.50	09/18/1978	U	112LKNTU	--	--	1960
145-075-188A	CRUDE GENERAL	4382	--	--	--	10/28/1957	--	--	--	--	--	--	2001
145-075-188CD	MITTELSTEDT, ERWIN	300	300	290	4	07/12/1975	50.00	07/12/1975	H,S	112BGFV	1700	7.0	--
145-075-220DD	NUSWC 10240	380	--	--	--	08/28/1978	--	--	U	--	--	--	1996
145-075-260BB	WILSON, DAVIS	240	240	223	4	08/01/1972	52.00	08/01/1972	H,S	112BGFV	1390	8.5	--
145-075-2988B	NUSWC 10242	260	--	--	--	08/29/1978	--	--	U	--	--	--	1970
145-075-34AAA	NUSWC 10239	280	--	--	--	08/28/1978	--	--	U	--	--	--	1995
145-075-340CB	HAWLEY, C	110	97	77	12	07/29/1976	75.20	07/30/1976	I	112NBLG	--	--	--
145-075-35CCC	NUSWC 10241	195	69	66	1.25	08/29/1978	22.49	09/18/1978	U	112NBLG	600	11.0	1976
145-076-080DA	SCHATZ, SAM	280	273	265	4	12/02/1975	90.00	12/02/1975	H	112BGFV	2100	9.5	1970
145-076-20DDC	NUSWC 11010	260	--	--	--	08/06/1979	--	--	--	--	--	--	1960
145-076-23AAB	NUSWC 5255	262	166	163	1.25	10/17/1977	51.49	09/18/1978	U	112BGFV	720	8.5	2010
145-077-04AAA	NUSWC 5826	90	63	57	1.25	09/18/1970	55.75	09/18/1978	--	112PWCK	--	--	1905
145-077-04ABC	KHELLER, EDNA	230	230	196	4	11/01/1972	60.00	11/01/1972	H,S	211MCFH	2100	9.0	--
145-077-04CDB	USBK	70	25	--	--	12/13/1954	4.40	12/14/1954	U	112PWCK	--	--	1864
145-077-04DAB	SCHAFER, EMANUEL	235	235	228	4	05/22/1973	120.00	05/22/1973	S	211MCFH	2150	9.5	--
145-077-05ABB	USBK	80	--	--	--	03/19/1968	7.10	03/21/1968	--	112PWCK	--	--	1873
145-077-09ADD	NUSWC 5830	200	64	59	4	09/23/1970	40.48	09/18/1978	--	112PWCK	550	8.5	1885
145-077-098AA	USBK	80	--	--	--	03/01/1968	4.70	03/04/1968	U	112PWCK	--	--	1856
145-077-098BB	PARSONS, WARREN	230	230	210	4	08/21/1972	60.00	08/21/1972	S	211MCFH	2100	7.5	--
145-077-090BB	USBK	70	--	--	--	12/15/1954	14.40	12/16/1954	U	112PWCK	--	--	1867
145-077-090DD	MILLER, MAX	250	250	240	4	08/16/1973	20.00	08/16/1973	S	211MCFH	1900	7.5	--
145-077-16AAB	NUSWC 10246	90	63	58	1.25	08/31/1978	16.10	09/18/1978	U	112PWCK	2430	10.0	1857
145-077-16ACC	USBK	60	--	--	--	02/14/1955	--	--	U	--	--	--	1857
145-077-16CAA	HOUSEK, M E	230	230	190	4	05/06/1972	35.00	05/06/1972	S	211MCFH	2250	7.0	--
145-077-16DAC	USBK	40	--	--	--	02/08/1968	--	--	U	112PWCK	--	--	1853
145-077-21ACA	USBR	54	20	--	--	02/26/1968	4.70	02/27/1968	U	112PWCK	--	--	1857
145-077-21C0C	USBK	65	--	--	--	12/20/1954	7.30	12/21/1954	U	112PWCK	--	--	1868
145-077-22BAA	KACK, JOHN	255	255	215	4	08/01/1974	34.00	08/01/1974	H	211MCFH	1750	8.0	--

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	SPECIFIC CONDUCTANCE (UMHO/CM AT 25°C)	TEMPERATURE (DEGREES C)	ALTITUDE OF LAND SURFACE (FEET)
145-077-228BA	USBR	50	50	--	--	07/23/1971	11.20	07/26/1971	U	--	--	--	1856
145-077-228BB	NDSMC 10247	160	--	--	--	08/31/1976	--	--	U	--	--	--	1860
145-077-268DC	USBR	60	--	--	--	12/21/1954	5.20	12/22/1954	U	112PMCK	--	--	1866
145-077-268CB	USBR	50	--	--	--	02/20/1968	5.30	02/21/1968	--	112PMCK	--	--	1862
145-077-290DD	USBR	60	--	--	--	03/11/1968	3.10	03/21/1968	U	112PMCK	--	--	1862
145-077-30CDA	REINHART, REINHOLD	350	350	294	4	07/17/1973	45.00	07/17/1973	U	--	--	--	--
145-077-31CDA	USBR	300	270	223	--	05/12/1971	29.30	06/02/1972	U	--	--	--	1881
145-077-32ABD	USBR	60	--	--	--	02/19/1968	4.30	02/20/1968	--	112PMCK	--	--	1861
145-077-32CUC	USBR	65	55	--	--	03/05/1968	3.00	03/06/1968	U	112PMCK	--	--	1860
145-077-32DAB	USBR	65	--	--	--	01/05/1955	5.20	01/06/1955	U	112PMCK	--	--	1863
145-077-32DCC	SCHAFER, JUMANNA	560	560	530	4	02/17/1971	25.00	02/18/1971	H	--	--	--	2000
145-077-338BA	USBR	65	--	--	--	01/03/1955	5.20	01/04/1955	U	112PMCK	--	--	1867
145-077-34AAU	NDSMC 10248	200	--	--	--	08/31/1978	--	--	U	--	--	--	1930
145-077-358BB	NDSMC 5825	180	--	--	--	09/18/1970	--	--	--	--	--	--	1923
145-078-058BB	NDSMC 5342	755	623	617	2	07/11/1976	85.85	09/18/1978	U	211FXHL	2700	10.0	1910
145-078-148CB	NDSMC 5261	202	--	--	--	10/24/1977	--	--	U	--	--	--	1850
145-078-260AA	NDSMC 5824	200	--	--	--	09/17/1970	--	--	--	--	--	--	1910
145-078-280CA	USBR	57	--	--	--	06/01/1955	--	--	U	--	--	--	1865
146-074-080CB1	GOODRICH, NO NO 1	--	--	--	--	--	--	--	P	211FXHL	1500	8.0	1970
146-074-080CB2	GOODRICH, NO NO 2	545	480	452	--	12/02/1975	--	--	P	211FXHL	1500	9.0	1970
146-074-10CCC	NDSMC 10244	380	--	--	--	08/30/1978	--	--	U	--	--	--	1955
146-074-16CC	PFEIFFER, C A	6342	--	--	--	10/31/1954	--	--	--	--	--	--	1983
146-074-21CCC	NDSMC 5250	642	405	399	2	10/11/1977	41.59	09/18/1978	U	211FXHL	1500	10.0	1980
146-074-328BA	NDSMC 5351	215	--	--	--	07/27/1978	--	--	U	--	--	--	2025
146-075-048BB	NDSMC 5349	255	--	--	--	07/25/1978	--	--	U	--	--	--	2030
146-075-08ADU	NDSMC 11015	470	--	--	--	08/08/1979	--	--	--	--	--	--	2040
146-075-190DA	NDSMC 5253	352	311	305	2	10/14/1977	21.15	09/18/1978	U	112LKNTU	1080	9.5	2010
146-075-270CA	FEICHEL, FRED	326	318	313	2	06/01/1975	80.00	08/01/1975	H,S	112BGFV	1500	6.5	1980
146-076-010DD	HERR, EDWIN	180	100	170	4	05/03/1973	40.00	05/03/1973	H	112BGFV	1600	10.5	1995
146-076-030DC	FAUL, ALLEN	742	--	--	--	02/28/1976	--	--	U	--	--	--	1980
146-076-030DD	NDSMC 5355	675	658	652	2	07/28/1978	22.40	09/18/1978	U	211FXHL	--	--	1980
146-076-19CC	BAUER, W E	7140	--	--	--	10/26/1954	--	--	--	--	--	--	1972
146-076-19CDD	NDSMC 5829	600	600	--	--	09/22/1970	--	--	--	211FXHL	--	--	1950
146-076-27AAA	NDSMC 5254	642	--	--	--	10/17/1977	--	--	U	211FXHL	--	--	1970
146-076-330AA	TREIHWASSER, LEU	640	615	607	4	01/07/1975	20.00	01/07/1975	H	211FXHL	1680	7.0	1980
146-077-038BD	USBR	120	118	--	--	08/26/1968	23.50	09/24/1968	U	--	--	--	1920
146-077-03CBH	USBR	85	--	--	--	06/08/1955	--	--	U	--	--	--	1897
146-077-04ADA	USBR	300	--	--	--	06/14/1966	26.00	06/23/1966	U	--	--	--	1913
146-077-040BD	USBR	120	116	--	--	08/09/1968	7.50	09/24/1968	U	--	--	--	1900
146-077-07AAB	NDSMC 5264	422	345	339	2	10/26/1977	59.29	09/18/1978	U	112LKNTL	1720	9.0	1890

LOCAL NUMBER	OWNER	DEPTH (FEET)	DEPTH OF WELL (FEET)	OPENING (FEET)	FINAL DIAM- (INCHES)	CASING DATE COMPLETED (FEET)	WATER LEVEL MEASURED (FEET)	DATE WATER MEASURED	USE	PRINCIPAL MATERIAL	CONDUCTANCE (MHMO/CM AT 25°C)	TEMPERATURE (DEGREES C)	SHAPE OF LAND (FEET)	ALTITUDE
146-07-08C8	NOSMC 5258	105	80	--	--	10/21/1977	6.60	03/14/1955	U	21FXHL	--	--	1902	1890
146-07-09A8	USBR	300	15	--	--	07/01/1966	7.50	11/17/1966	U	21FXHL	1600	6.0	1901	1901
146-07-11D8	MCLUSKY, ND	140	377	--	--	12/02/1975	110.00	09/03/1970	F	21FXHL	1600	6.0	1901	1901
146-07-13CA	ZINGB, ARKUM	90	90	--	84	05/01/1975	8.00	05/01/1975	H,S	112BGFV	1900	9.5	1900	1900
146-07-13CB	NOSMC 5243	435	100	--	--	07/13/1978	--	--	U	--	--	--	1900	1900
146-07-16AA	USBR	100	100	--	--	02/08/1973	6.20	02/12/1973	U	--	--	--	1895	1895
146-07-17CD	USBR	85	85	--	--	01/25/1955	21.40	02/22/1955	U	--	--	--	1896	1896
146-07-17CD	USBR	60	60	--	--	02/22/1955	4.80+	02/22/1955	U	--	--	--	1896	1896
146-07-17CC	USBR	110	110	--	--	12/12/1972	14.00	10/24/1966	U	--	--	--	1923	1923
146-07-20CD	RENGEN, TERRANCE	750	560	539	--	01/01/1973	71.00	02/26/1974	H,S	211FXHL	2290	9.0	1920	1920
146-07-20DA	USBR	75	75	--	--	02/23/1973	7.40	03/19/1973	U	--	--	--	1874	1874
146-07-21CB	USBR	65	10	--	--	05/22/1969	2.80	05/26/1969	U	--	--	--	1864	1864
146-07-21BB	NOSMC 5257	422	405	399	--	10/20/1977	36.47	09/18/1978	U	211FXHL	1900	9.0	1870	1870
146-07-21CC	NOSMC 5268	660	316	--	--	09/23/1978	--	--	U	--	--	--	1930	1930
146-07-25BB	NOSMC 5246	415	322	316	--	07/13/1978	39.37	09/18/1978	U	112BGFV	1600	8.0	1940	1940
146-07-27AD	CUMINENT, PUNE OIL	4653	--	--	--	03/03/1957	--	--	--	--	--	--	1944	1944
146-07-29BC	USBR	300	300	--	--	10/27/1971	39.70	04/10/1973	U	--	--	--	1932	1932
146-07-29CD	USBR	125	10	--	--	05/15/1969	7.00	05/21/1969	U	--	--	--	1937	1937
146-07-29DB	FUCHLICH, ART	420	420	344	--	06/05/1973	140.00	06/05/1973	S	211XHL	1700	7.0	1926	1926
146-07-30DA	SFAHROW, JIM	485	485	348	--	06/08/1974	118.00	08/08/1974	S	211FXHL	1900	8.0	1930	1930
146-07-30DB	USBR	90	--	--	--	03/22/1968	18.00	03/25/1968	U	112BGFV	1900	8.0	1930	1930
146-07-31AA	USBR	262	--	--	--	10/24/1977	--	--	U	--	--	--	1900	1900
146-07-32CA	USBR	81	25	--	--	12/01/1958	13.20	12/03/1954	U	112BGFV	1900	8.0	1893	1893
146-07-32CC	NOSMC 5259	38	--	--	--	10/24/1977	--	--	U	112BGFV	1900	8.0	1893	1893
146-07-34BA	NOSMC 5267	220	566	560	--	09/21/1970	--	--	U	211FXHL	--	--	1970	1970
146-07-36CC	NOSMC 5256A	442	235	232	1.25	10/19/1977	152.10	09/18/1978	U	112BGFV	2020	8.0	1970	2020
146-07-36CC2	NOSMC 5256	722	566	560	2	10/19/1977	153.50	09/18/1978	U	211FXHL	--	--	2020	2020
146-07-37AA	NOSMC 5263	242	123	120	1.25	10/26/1977	35.85	09/18/1978	U	112BGFV	1600	6.0	2010	2010
146-07-37AB	NOSMC 5340	335	205	202	1.25	06/29/1978	3.69	09/18/1978	U	112BGFV	1700	6.0	1930	1930
146-07-37AC	NOSMC 5262	402	447	441	2	10/25/1977	107.28	09/19/1978	U	112BGFV	1700	6.0	1930	1930
146-07-37CC	NOSMC 5262	300	295	291	4	05/13/1971	--	--	U	112BGFV	1850	7.5	1895	1895
146-07-37CC	NOSMC 5262	300	295	291	4	05/13/1971	179.00	10/19/1972	H,S	211XHL	1850	7.5	1895	1895
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	DEMCUR, AKHIE	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CA	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1875
146-07-37CB	NOSMC 5265	280	280	280	4	10/13/1972	80.00	10/13/1972	H,S	112BGFV	1400	8.0	1875	1

LOCAL NUMBER	UNUMER	DEPTH (FEET)	DEPTH OF WELL (FEET)	DEPTH TO CASING (FEET)	DIAMETER (INCHES)	DATE COMPLETED	MATERIAL LEVEL (FEET)	DATE MEASURED	USE OF MATERIAL	PRINCIPAL ANALYSES	CONDUCTANCE (MHM/CM AT 25°C)	TEMPERATURE (DEGREES C)	DEPTH OF SOURCE (FEET)	ALTITUDE OF LAND SURFACE (FEET)
147-074-27AA	N03MC 10230	400	400	--	--	08/28/1978	--	--	U	--	--	--	1970	1970
147-074-28AA	N03MC 10237	180	180	--	--	08/28/1978	--	--	U	--	--	--	1850	1850
147-075-0100	N03MC 5267	582	465	459	2	11/07/1977	135.50	09/18/1978	U	211FXHL	2200	8.0	1850	1970
147-075-03CCC1	N03MC 5267	582	465	459	2	11/07/1977	135.50	09/18/1978	U	211FXHL	2200	8.0	1850	1970
147-075-03CCC2	N03MC 5267A	250	230	232	1.25	11/07/1977	116.90	09/18/1978	U	112LKNLU	1700	7.8	1850	1850
147-075-15AA	N03MC 11013	275	--	--	--	08/07/1979	--	--	U	--	--	--	1840	1840
147-075-1700	N03MC 5268	535	176	1.25	1.25	07/28/1978	32.99	09/18/1978	U	112LKNLU	900	10.0	1900	2000
147-075-2000C	FLATLIE, MELVIN	436	436	--	4	07/18/1978	76.00	07/18/1978	S	211MCFH	1910	6.5	2000	1845
147-075-26AA	N03MC 11014	430	--	--	--	08/08/1979	--	--	--	--	--	--	1845	1845
147-075-33AAA	N03MC 11012	400	254	251	1.25	08/07/1979	4.50	08/08/1979	--	--	--	--	1845	1845
147-075-06AAA	N03MC 11014	430	--	--	--	08/08/1979	--	--	--	--	--	--	1845	1845
147-075-06CCC1	N03MC 5268	535	176	1.25	1.25	07/28/1978	32.99	09/18/1978	U	112LKNLU	900	10.0	1900	2000
147-075-06CCC2	N03MC 5267A	250	230	232	1.25	11/07/1977	116.90	09/18/1978	U	112LKNLU	1700	7.8	1850	1850
147-075-0700	N03MC 5267	386	386	378	4	11/20/1976	8.00	11/20/1976	H	112LKNLU	1830	--	1850	1830
147-076-0700	N03MC 5266	742	668	662	2	11/04/1977	77.50	09/19/1978	U	112LKNLU	2000	10.5	1896	1870
147-076-0700C	N03MC 5266	742	668	662	2	11/04/1977	77.50	09/19/1978	U	112LKNLU	2000	10.5	1896	1870
147-076-10A8	N03MC 5266	65	65	--	--	03/29/1955	10.00	05/02/1973	U	--	--	--	1892	1892
147-076-10A8C	N03MC 5266	65	65	--	--	03/29/1955	10.00	05/02/1973	U	--	--	--	1892	1892
147-076-10B8	N03MC 5266	65	65	--	--	03/29/1955	10.00	05/02/1973	U	--	--	--	1892	1892
147-076-10B8C	N03MC 5266	65	65	--	--	03/29/1955	10.00	05/02/1973	U	--	--	--	1892	1892
147-076-10C8	N03MC 5266	65	65	--	--	03/29/1955	10.00	05/02/1973	U	--	--	--	1892	1892
147-076-10C8C	N03MC 5266	65	65	--	--	03/29/1955	10.00	05/02/1973	U	--	--	--	1892	1892
147-076-19A8	DUCKTER, ADAM	285	285	279	4	10/22/1973	150.00	10/22/1973	H,S	112LKNLU	1650	10.5	1900	1924
147-076-22CCC1	N03MC 5346A	575	377	377	2	07/18/1978	19.50	09/19/1978	U	112LKNLU	2100	9.0	1900	1900
147-076-22CCC2	N03MC 5346A	575	377	377	2	07/18/1978	19.50	09/19/1978	U	112LKNLU	2100	9.0	1900	1900
147-076-22CCC3	N03MC 5346B	255	115	112	1.25	07/18/1978	37.35+	09/18/1978	U	112LKNLU	1700	9.0	1900	1900
147-076-24B8	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8B	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8C	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8D	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8E	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8F	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8G	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8H	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8I	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8J	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8K	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8L	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8M	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8N	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8O	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8P	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8Q	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8R	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8S	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8T	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8U	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8V	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8W	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8X	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8Y	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8Z	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AA	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AB	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AC	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AD	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AE	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AF	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AG	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AH	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AI	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AJ	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AK	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AL	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AM	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AN	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AO	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AP	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AQ	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AR	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AS	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AT	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AU	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AV	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AW	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AX	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AY	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8AZ	N03MC 5347	635	605	599	2	07/19/1978	47.20	09/19/1978	U	112LKNLU	2000	10.5	1900	1900
147-076-24B8BA	N03MC 5347	635	605	599	2	07/19/1978	47							

LUCAL NUMBER	OWNER	DEPTH UNKILLED (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAM-ETEN (INCHES)	DATE COMPLETED	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	USE OF WATER	PRINCIPAL AQUIFER	SPECIFIC CONDUCTANCE (UMHO/CM AT 25°C)	TEMPERATURE (DEGREES C)	ALTITUDE OF LAND SURFACE (FEET)
147-077-17000	NDSMC 5335	415	333	330	2	06/22/1978	93.50	09/19/1978	U	112LKNTU	2200	9.0	1925
147-077-238CA	USBR	221	221	191	4	03/05/1976	80.00	03/05/1976	U	--	--	--	1935
147-077-238CB	USBR	115	115	--	--	04/11/1973	15.60	04/12/1973	U	--	--	--	1896
147-077-238CC	USBR	75	75	--	--	04/10/1973	8.40	04/12/1973	U	--	--	--	1861
147-077-240CC	USBR	125	125	--	--	04/13/1973	24.60	05/02/1973	U	--	--	--	1877
147-077-2588C	USBR	100	100	--	--	04/17/1973	11.20	05/02/1973	U	--	--	--	1887
147-077-258CC	USBR	75	75	--	--	02/12/1973	9.10	05/24/1973	U	--	--	--	1875
147-077-258CU	KRUGER, RONNIE	450	450	444	4	10/22/1973	50.00	10/22/1973	H,S	112LKNTL	1900	9.0	--
147-077-2688A	USBR	110	110	--	--	02/21/1955	26.10	02/25/1955	U	--	--	--	1908
147-077-268CC	USBR	80	80	--	--	03/01/1955	13.80	03/01/1955	U	--	--	--	1844
147-077-2608B	USBR	60	10	--	--	02/17/1955	--	--	U	--	--	--	1827
147-077-28000D1	WENNING, DON	370	370	360	4	08/20/1972	70.00	08/20/1972	H,S	112LKNTL	1900	11.5	--
147-077-28000D2	USBR	110	110	--	--	12/13/1971	20.70	07/31/1972	U	--	--	--	1909
147-077-348AA	USBR	60	60	--	--	02/06/1973	20.50	05/24/1973	U	--	--	--	1863
147-077-3480B	USBR	100	100	--	--	03/20/1968	3.00	06/21/1972	U	--	--	--	1888
147-077-340CB	USBR	90	90	--	--	05/24/1968	23.40	09/24/1968	U	--	--	--	1889
147-077-3588D	HUFFER, WILMAH	380	380	365	4	06/29/1972	50.00	06/29/1972	H,S	112LKNTL	1950	8.0	--
147-077-358AA	USBR	60	--	--	--	02/01/1973	21.40	03/20/1973	U	--	--	--	1868
147-077-360CC	NDSMC 5341	395	--	--	--	06/29/1978	--	--	U	--	--	--	1910
147-078-030AU	NDSMC 10249	240	74	68	1.25	09/05/1978	.60	09/19/1978	U	112LKNTU	900	7.5	1990
147-078-0688B	NDSMC 3941	80	40	20	1.25	12/04/1969	15.04	09/19/1978	U	112LKNTU	600	3.0	1900
147-078-1088U	MANTZ, KUBERT	--	260	--	--	03/20/1971	--	--	H,S	112LKNTU	1200	9.0	--
147-078-1000A	NDSMC 5337	395	--	--	--	06/27/1978	--	--	U	--	--	--	2000
147-078-1100D	NETZOFF, CHARLES	177	172	168	4	11/06/1976	45.00	11/06/1976	H	112LKNTU	--	--	2000
147-078-140CC1	NDSMC 5336	595	435	432	2	06/23/1978	94.12	09/19/1978	U	112LKNTL	--	--	1960
147-078-140CC2	NDSMC 5336A	195	180	177	1.25	06/27/1978	1.02	10/17/1978	U	112LKNTU	360	8.5	1960
147-078-2688B	NDSMC 5338	415	--	--	--	06/28/1978	--	--	U	--	--	--	1980
147-078-2700D	NDSMC 5339	375	135	132	1.25	06/28/1978	16.18	09/19/1978	U	112LKNTU	--	--	1940
147-078-308CC1	NDSMC 3939	320	168	150	1.25	12/02/1969	3.91	09/19/1978	U	112LKNTU	480	7.0	1940
147-078-308CC2	NDSMC 3940	60	60	40	1.25	12/04/1969	--	--	U	112LKNTU	--	65.0	1940
148-074-04AAA	NDSMC 10228	60	--	--	--	08/23/1978	--	--	U	--	--	--	1640
148-074-04CCC	NDSMC 10229	40	--	--	--	08/23/1978	--	--	U	--	--	--	1620
148-074-08CCC	NDSMC 10231	40	--	--	--	08/23/1978	--	--	U	--	--	--	1700
148-074-0800D	USBR	57	57	--	--	06/25/1970	28.50	08/21/1970	--	--	--	--	1666
148-074-158CC	NDSMC 10230	40	--	--	--	08/23/1978	--	--	U	--	--	--	1655
148-074-1988B	NDSMC 10236	60	--	--	--	08/24/1978	--	--	U	--	--	--	1746
148-074-220A	FALLUN, LEO	392	--	--	--	08/19/1953	--	--	--	--	--	--	1682
148-075-0988B	NDSMC 10232	60	--	--	--	08/23/1978	--	--	U	--	--	--	1660
148-075-258CC	NDSMC 10235	100	68	62	1.25	08/24/1978	5.60	09/18/1978	U	112LKNTU	800	9.0	1753
148-076-0388B	USBR	45	45	--	--	03/30/1973	13.40	04/02/1973	U	--	--	--	1801

LOCAL NUMBER	OWNER	DEPTH (FEET)	DEPTH OF MLLL (FEET)	DEPTH OF FIRST OPENING (FEET)	DEPTH TO CABLING (INCHES)	DATE COMPLETED	WATER LEVEL (FEET)	MEASURED WATER LEVEL	USE	PRINCIPAL MATERIAL	TEMPERATURE (DEGREES C)	DEPTH (FEET)	ALTITUDE OF LAND SURFACE
148-076-0400C	USBR	50				04/21/1955	6.20		U				1796
148-076-0400D	NUSMC 11016	460				08/09/1979			U				1785
148-076-0700D	NUSMC 5332	435				06/20/1978			U				1790
148-076-0900D	USBR	50	10			03/21/1966	10.00		U				1800
148-076-0900C	USBR	40				03/07/1973	15.90		U				1801
148-076-0900D	FKEY, DONALD	445	445	415	4	05/17/1974	172.00		H, S	211FKHL	2910	13.0	1800
148-076-1500C	MALIZ, JOHN	6782				10/02/1954			Z				1781
148-076-1600C	USBR	50	15			04/18/1955	10.20		U				1796
148-076-1600C	USBR	50	10			04/14/1955	5.70		U				1790
148-076-1700C	NUSMC 5271	482				11/09/1977			U				1780
148-076-1900D	USBR	45	45			03/09/1973	7.90		U				1811
148-076-2000C	USBR	65	65			06/05/1973	41.90		U				1827
148-076-2000C	USBR	50	10			04/17/1955	5.20		U				1802
148-076-2100C	NUSMC 5270	442	266	260	2	11/08/1977	113.68		U	112LKNLU	1400	10.0	1770
148-076-2100C	USBR	40				06/05/1973	11.50		U				1810
148-076-2300C	NUSMC 5269	222				11/08/1977			U				1760
148-076-2300C	USBR	75				11/08/1977			U				1760
148-076-2300C	USBR	282				11/08/1977			U				1760
148-076-2900A	USBR	40	40			03/15/1973	6.20		U				1793
148-076-2900A	USBR	40	40			03/15/1973	6.20		U				1793
148-076-3000B	USBR	65	65			03/15/1973	16.10		U				1824
148-076-3100A	USBR	65	65			03/15/1973	7.60		U				1812
148-076-3100D	USBR	95				06/08/1962	26.20		U				1833
148-076-3200D	NUSMC 5331	495	576	570	2	06/15/1978	145.00		U	211FKHL	2000	9.0	1955
148-076-3200D	NUSMC 5331A	435	428	422	2	06/15/1978	171.91		U	211FKHL	2700	9.0	1955
148-076-3200D	NUSMC 5272	582	408	402	2	11/14/1977	50.27		U	112LKNLU	1400	9.0	1850
148-076-3300C	NUSMC 5334	775				06/21/1978			U				1838
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10250	140				09/05/1978			U				1900
148-076-3300C	NUSMC 10250	140				09/05/1978	17.07		U	112LKNLU	600	6.0	1910
148-076-3300C	NUSMC 10252	240				09/08/1978	5.49		U	112LKNLU	450	7.0	1910
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3300C	NUSMC 10252	240				09/08/1978			U				1820
148-076-3300C	NUSMC 10251	140				09/08/1978			U				1810
148-076-3													

LOCAL NUMBER	OWNER	DEPTH TO CASING	DIAMETER	OPENING	WELL	DEPTH	DATE	MEASURED	WATER	USE	PRINCIPAL	CONDUCTANCE	TEMPERATURE	ALTITUDE
		(FEET)	(INCHES)	(FEET)	(FEET)	(FEET)	(FEET)	(FEET)	(FEET)		(INCHES)	(DEGREES C)	(FEET)	
149-075-0500A	USBR	175	--	--	--	175	08/18/1952	16.50	U			--	1660	
149-075-0600C	USBR	290	--	--	--	290	11/12/1954	39.80	U			--	1667	
149-075-0600C	USBR	320	--	--	--	320	09/23/1952	--	U			--	1656	
149-075-0600C	USBR	230	--	--	--	230	12/01/1952	4.80	U			--	1590	
149-075-0700A	USBR	275	--	--	--	275	06/03/1954	--	U			--	1653	
149-075-0800C	USBR	191	--	--	--	191	07/09/1962	31.90	U			--	1691	
149-075-0800C	USBR	250	--	--	--	250	03/11/1969	35.60	U			--	1622	
149-075-0800C	USBR	125	--	--	--	125	04/04/1969	40.20	U			--	1633	
149-075-1500B	ENGEN, BILL	240	204	225	--	240	05/02/1974	67.00	H,S	21HCFH	2200	10.0	1785	
149-075-2000A	NDSMC 10233	60	--	--	--	60	08/23/1978	--	U			--	1655	
149-075-2100A	SFRMGEN, WERR	324	320	--	--	324	10/28/1975	126.00	H	112B6FV	1850	8.0	1745	
149-075-2200A	SFRMGEN, WALTER	297	284	259	--	297	12/17/1976	74.00	S			--	1695	
149-076-0100B	USBR	227	--	--	--	227	12/13/1954	34.50	S			--	1663	
149-076-0100B	USBR	315	--	--	--	315	12/13/1954	--	U			--	1651	
149-076-0100B	USBR	246	--	--	--	246	10/22/1952	--	U			--	1680	
149-076-2200A	HINES, RUUDLPH	315	--	--	--	315	03/14/1967	--	H,S	21HCFH	2300	13.0	1644	
149-076-2500C	USBR	186	186	165	--	186	05/12/1973	80.00	H,S			--	1680	
149-076-2500C	USBR	106	--	--	--	106	09/28/1962	11.70	U			--	1665	
149-076-2500C	USBR	50	--	--	--	50	10/02/1972	2.90	U			--	1802	
149-076-2600A	HAUSSAUER, ALBERT	178	176	174	4	178	08/30/1972	33.00	H,S	112B6FV	1600	11.0	1710	
149-076-2600A	USBR	175	93	90	1.25	175	06/14/1978	2.77	U	112BUT	3000	7.8	1710	
149-076-2600A	USBR	50	--	--	--	50	03/29/1968	--	U			--	1799	
149-076-3000C	USBR	135	--	--	--	135	06/09/1978	--	U			--	1606	
149-077-0200A	NDSMC 5327	160	--	--	--	160	06/17/1978	--	U			--	1804	
149-077-1000C	NDSMC 10219	200	--	--	--	200	08/17/1978	--	U			--	1905	
149-077-1000C	NDSMC 10220	115	41	642	1.25	115	06/09/1978	10.70	U	112BUT	2200	8.0	1620	
149-077-1500C1	NDSMC 5329	975	648	642	2	975	06/09/1978	109.78	U	211FKHL	--	--	2013	
149-077-1500C2	NDSMC 5329A	235	220	214	1.25	235	06/14/1978	43.14	U	112B6FV	725	--	2013	
149-077-1500C3	NDSMC 5329B	375	364	358	2	375	06/14/1978	60.85	U	211HCFH	850	10.0	2013	
150-074-1400B	HASE, ENVIN	280	273	252	2	280	03/08/1974	47.00	H,S	211HCFH	2090	7.5	1680	
150-074-1400B	NDSMC 5321	415	262	256	2	415	06/06/1978	15.79	U	211HCFH	4000	11.0	1625	
150-074-1400C	NDSMC 5322	235	130	133	1.25	235	06/07/1978	24.25	U	112MRFN	2000	9.5	1630	
150-074-2100C	RENDER, VIEIUM	270	270	249	4	270	01/01/1976	19.00	H	211HCFH	--	--	1615	
150-074-2300C	NDSMC 11020	200	139	136	1.25	200	06/14/1979	--	U	112MRFN	--	--	1655	
150-074-3400A	NDSMC 10227	240	--	--	--	240	08/22/1978	--	U			--	1620	
150-075-0100B	FLLATINE, JOHN	170	170	165	4	170	05/19/1972	38.00	H,S	112MRFN	1400	8.0	1800	
150-075-0400D	DUCKER, DUANE	96	98	88	4	96	05/18/1972	70.00	H,S	112MRFN	1010	10.0	1800	
150-075-1000C	NUSMC 10225	160	74	68	1.25	160	08/22/1978	21.60	U	112MRFN	900	11.0	1620	

2

LOCAL NUMBER	OWNER	DEPTH DRILLED (FEET)	DEPTH OF WELL (FEET)	DEPTH TO FIRST OPENING (FEET)	CASING DIAM- ETER (INCHES)	DATE COMPLETED	WATER LEVEL (FEET)	DATE WATER LEVEL MEASURED	USE OF WATER	PRINCIPAL AQUIFER	SPECIFIC CONDUCTANCE (UMHO/CM AT 25°C)	TEMPERATURE (DEGREES C)	ALTITUDE OF LAND SURFACE (FEET)
150-075-18CCD	USBR	122	--	--	--	06/09/1952	39.60	06/12/1952	U	--	--	--	1623
150-075-198BA	USBR	290	--	--	--	08/08/1954	46.70	04/21/1950	U	--	--	--	1645
150-075-198CB	NDSWC 10224	230	--	--	--	08/21/1978	--	--	U	--	--	--	1620
150-075-21CCC	NDSWC 5323	30	--	--	--	06/07/1978	--	--	U	--	--	--	1670
150-075-26A8B	NDSWC 10226	160	--	--	--	08/22/1978	--	--	U	--	--	--	1665
150-075-26CCC	NDSWC 11019	200	--	--	--	08/13/1979	--	--	--	--	--	--	1685
150-075-30AAA1	NDSWC 5324	195	173	170	2	06/08/1978	2.19	09/18/1978	U	112MRIN	2150	9.0	1600
150-075-30AA2	NDSWC 5324A	195	29	26	1.25	06/08/1978	7.00	09/18/1978	U	112MRIN	1200	8.0	1600
150-075-31000	NDSWC 5325	215	--	--	--	08/08/1978	--	--	U	--	--	--	1616
150-075-3400C	NDSWC 11018	180	--	--	--	08/13/1979	--	--	--	--	--	--	1690
150-075-3588D	MASE, ELDEAN	287	262	241	4	01/16/1973	20.00	01/16/1975	M,S	211MCPH	3010	8.0	1645
150-076-02CAD	USBR 69-13	50	--	--	--	11/03/1969	16.40	11/03/1969	U	--	--	--	1609
150-076-03ACA	USBR 69-15	50	--	--	--	11/03/1969	16.90	11/03/1969	U	--	--	--	1619
150-076-11A8A	USBR 69-12	50	--	--	--	10/31/1969	23.50	11/03/1969	U	--	--	--	1606
150-076-120CB	USBR 69-11	50	--	--	--	10/30/1969	36.50	11/03/1969	U	--	--	--	1615
150-076-12CAB	USBR	50	--	--	--	10/29/1969	--	--	U	--	--	--	1638
150-076-1208B	USBR	199	--	--	--	01/12/1953	9.70	01/12/1953	--	--	--	--	1591
150-076-138AD	USBR	50	--	--	--	10/24/1969	18.80	11/03/1969	U	--	--	--	1617
150-076-13CAC	USBR	231	--	--	--	01/03/1953	22.70	01/03/1953	U	--	--	--	1607
150-076-14000	USBR	50	--	--	--	09/11/1969	27.10	09/25/1969	U	--	--	--	1619
150-076-15CDD	NDSWC 10224	220	--	--	--	08/21/1978	--	--	U	--	--	--	1638
150-076-2188B	NDSWC 5273	602	362	356	2	11/15/1977	47.09	09/18/1978	U	211FXHL	4000	10.0	1676
150-076-248CC	USBR	40	--	--	--	06/27/1955	10.80	06/27/1955	U	--	--	--	1608
150-076-24CAB	USBR	50	--	--	--	09/10/1969	20.20	09/25/1969	U	--	--	--	1621
150-076-240CA	USBR	50	--	--	--	09/09/1969	13.00	09/25/1969	U	--	--	--	1616
150-076-25AAB	USBR	39	--	--	--	06/24/1955	28.00	06/24/1955	U	--	--	--	1618
150-076-2500A	USBR	50	30	--	--	08/05/1969	12.80	09/11/1969	U	--	--	--	1620
150-076-3440D	NDSWC 10222	300	--	--	--	08/18/1978	--	--	U	--	--	--	1650
150-076-36A8B	USBR	50	10	--	--	11/24/1971	5.20	12/10/1971	U	--	--	--	1619
150-076-3680D	USBR	50	--	--	--	09/03/1969	12.20	09/11/1969	U	--	--	--	1616
150-076-36CCA	USBR	285	--	--	--	10/22/1952	--	--	U	--	--	--	1650
150-077-03CDC	USAF	100	--	--	--	07/27/1951	--	--	--	--	--	--	1680
150-077-0500D	SCHÄTZ, TERRY	300	258	237	4	11/06/1974	40.00	11/06/1974	M,S	211FXHL	2200	13.0	1673
150-077-208AB	NDSWC 10256	140	98	92	1.25	09/07/1978	3.36	09/19/1978	U	112BUTT	3600	8.0	1700
150-077-2588B	NDSWC 10221	100	--	--	--	08/18/1978	--	--	U	--	--	--	1700
150-077-268CC	NDSWC 10256	100	--	--	--	09/07/1978	--	--	U	--	--	--	1695
150-077-2600D	NDSWC 5328	95	61	58	1.25	06/09/1978	4.65	09/18/1978	U	112BUTT	1200	8.5	1680
150-077-270CB	NDSWC 10255	220	156	150	1.25	09/07/1978	14.19	09/19/1978	U	112BUTT	2300	8.0	1670
150-077-27CLL	NDSWC 10254	70	--	--	--	09/07/1978	--	--	U	--	--	--	1697
150-077-368CC	NDSWC 10257	40	--	--	--	09/07/1978	--	--	--	--	--	--	1690

22

TABLE 2.—Water levels in selected wells

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

145-075-09BBB1 MP is top of 2-inch steel pipe 3.10 ft above lsd.

	Date	Water level		Date	Water level		Date	Water level
May	18, 1978.....	+1.95	Aug.	14.....	+1.73	Nov.	21.....	+1.80
June	20.....	+2.01	Sept.	18.....	+2.70	Dec.	20.....	+1.95
July	19.....	+1.90	Oct.	16.....	+1.67			

145-075-09BBB2 MP is top of 1½-inch plastic pipe 2.90 ft above lsd.

May	4, 1978.....	0.46	July	19.....	+1.90	Oct.	16.....	+0.58
May	18.....	+0.89	Aug.	14.....	+0.62	Nov.	21.....	+0.44
June	20.....	+1.20	Sept.	18.....	+0.65	Dec.	20.....	+0.36

145-075-09BBB3 MP is top of 1½-inch plastic pipe 2.65 ft above lsd.

May	18, 1978.....	1.17	Nov.	21.....	+0.23	Dec.	20.....	+1.27
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145-075-14DDD MP is top of 1½-inch plastic pipe 2.50 ft above lsd.

July	19, 1978.....	122.50	Sept.	18.....	107.50	Nov.	21.....	93.95
Aug.	14.....	116.20	Oct.	16.....	101.17	Dec.	20.....	88.73

145-075-35CCC MP is top of 1½-inch plastic pipe 2.00 ft above lsd.

Sept.	6, 1978.....	22.48	Oct.	16.....	22.45	Dec.	20.....	22.42
Sept.	18.....	22.49	Nov.	21.....	21.87			

145-076-23AAB MP is top of 1½-inch plastic pipe 1.00 ft above lsd.

Dec.	22, 1977.....	51.75	June	22.....	51.65	Sept.	18.....	51.49
Apr.	18, 1978.....	50.77	July	19.....	50.89	Oct.	16.....	51.74
May	19.....	50.19	Aug.	14.....	51.17	Dec.	21.....	51.73

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

145-077-04AAA MP is top of 1¼-inch plastic pipe 2.30 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
May 4, 1978.....	53.96	July 20.....	54.05	Oct. 16.....	54.60
May 18.....	53.91	Aug. 14.....	53.89	Nov. 21.....	54.27
June 23.....	53.95	Sept. 18.....	55.75	Dec. 21.....	56.34

145-077-09ADD MP is top of 4-inch plastic pipe 2.00 ft above lsd.

May 4, 1978.....	40.20	July 20.....	40.65	Nov. 21.....	40.55
May 18.....	41.04	Sept. 18.....	40.48	Dec. 21.....	40.45
June 19.....	40.81	Oct. 16.....	40.60		

145-077-16AAB MP is top of 1¼-inch plastic pipe 2.20 ft above lsd.

Sept. 7, 1978.....	14.69	Oct. 16.....	15.89	Dec. 21.....	15.79
Sept. 18.....	16.10	Nov. 21.....	15.92		

145-078-05BBB MP is top of 2-inch steel pipe 3.80 ft above lsd.

July 20, 1978.....	85.52	Sept. 18.....	85.85	Nov. 20.....	85.65
Aug. 14.....	86.20	Oct. 16.....	86.18	Dec. 21.....	85.65

146-074-21CCC MP is top of 2-inch steel pipe 3.10 ft above lsd.

Jan. 18, 1978.....	33.92	June 20.....	35.24	Oct. 16.....	41.39
Mar. 23.....	34.55	July 19.....	41.40	Nov. 21.....	41.38
Apr. 18.....	34.80	Aug. 14.....	41.60	Dec. 20.....	41.56
May 18.....	35.00	Sept. 18.....	41.59		

146-075-19ADA MP is top of 2-inch steel pipe 3.10 ft above lsd.

Dec. 22, 1977.....	23.72	June 27.....	20.60	Oct. 16.....	21.71
Mar. 23, 1978.....	24.31	July 19.....	20.55	Nov. 21.....	20.93
Apr. 19.....	23.40	Aug. 14.....	20.50	Dec. 20.....	21.95
May 18.....	21.90	Sept. 18.....	21.15		

146-076-03DDD MP is top of 2-inch steel pipe 3.30 ft above lsd.

Aug. 25, 1978.....	22.95	Oct. 16.....	22.45	Dec. 21.....	22.32
Sept. 18.....	22.40	Nov. 21.....	22.19		

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

146-077-07AAB MP is top of 2-inch steel pipe 3.10 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Dec. 23, 1977.....	57.39	June 19.....	59.15	Oct. 16.....	59.72
Mar. 23, 1978.....	59.10	July 20.....	59.26	Nov. 20.....	60.42
Apr. 17.....	59.02	Aug. 15.....	59.40	Dec. 27.....	59.20
May 18.....	59.18	Sept. 18.....	59.29		

146-077-21BBB MP is top of 2-inch steel pipe 3.40 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Dec. 22, 1977.....	37.07	July 17.....	37.45	Oct. 16.....	37.51
May 4, 1978.....	38.11	July 20.....	37.44	Dec. 27.....	37.32
May 18.....	37.14	Aug. 14.....	37.29		
June 21.....	37.27	Sept. 18.....	36.87		

146-077-25BBC MP is top of 2-inch steel pipe 3.30 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
July 17, 1978.....	39.00	Sept. 18.....	39.37	Nov. 21.....	39.63
Aug. 14.....	39.39	Oct. 16.....	39.48	Dec. 21.....	39.21

146-077-36CCC1 MP is top of 2-inch steel pipe 3.10 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Dec. 22, 1977.....	152.05	July 17.....	154.51	Nov. 21.....	153.55
Apr. 18, 1978.....	153.15	Aug. 14.....	153.54	Dec. 21.....	153.49
May 19.....	153.16	Sept. 18.....	153.30		
June 21.....	153.09	Oct. 16.....	153.45		

146-077-36CCC2 MP is top of 1¼-inch plastic pipe 1.80 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Dec. 22, 1977.....	132.30	June 21.....	131.90	Oct. 16.....	128.30
Mar. 23, 1978.....	132.60	July 21.....	132.09	Nov. 21.....	132.18
Apr. 17.....	132.46	Aug. 14.....	131.25	Dec. 21.....	132.25
May 19.....	132.32	Sept. 18.....	132.10		

146-078-07AAA MP is top of 1¼-inch plastic pipe 1.50 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Dec. 22, 1977.....	36.73	June 19.....	36.08	Oct. 16.....	35.82
Mar. 23, 1978.....	37.20	July 20.....	35.85	Nov. 20.....	35.90
Apr. 17.....	37.03	Aug. 15.....	36.00	Dec. 21.....	35.89
May 18.....	36.44	Sept. 18.....	35.85		

146-078-10AAD MP is top of 1¼-inch plastic pipe 2.00 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
July 20, 1978.....	10.50	Sept. 18.....	3.69	Nov. 20.....	1.06
Aug. 15.....	6.20	Oct. 16.....	1.89	Dec. 21.....	.59

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

146-078-14BCB MP is top of 2-inch steel pipe 3.10 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Oct. 22, 1977.....	106.20	June 20.....	108.02	Oct. 16.....	107.70
Mar. 23, 1978.....	107.86	July 20.....	107.76	Nov. 20.....	108.24
Apr. 17.....	107.79	Aug. 14.....	107.00	Dec. 21.....	107.95
May 18.....	107.76	Sept. 19.....	107.28		

147-075-03CCC1 MP is top of 2-inch steel pipe 3.10 ft above lsd.

Dec. 23, 1977.....	137.67	June 20.....	137.87	Oct. 16.....	138.17
Mar. 23, 1978.....	136.95	July 19.....	138.40	Nov. 21.....	137.74
Apr. 18.....	136.25	Aug. 15.....	136.90	Dec. 20.....	138.02
May 19.....	137.78	Sept. 18.....	135.50		

147-075-03CCC2 MP is top of 1¼-inch plastic pipe 1.80 ft above lsd.

Dec. 23, 1977.....	114.37	June 20.....	115.28	Oct. 16.....	114.92
Mar. 23, 1978.....	114.19	July 19.....	114.88	Nov. 21.....	114.79
Apr. 18.....	114.60	Aug. 15.....	117.15	Dec. 20.....	114.85
May 18.....	114.71	Sept. 18.....	116.90		

147-075-17DDD MP is top of 1¼-inch plastic pipe 2.90 ft above lsd.

Aug. 15, 1978.....	33.43	Oct. 16.....	33.07	Dec. 20.....	32.96
Sept. 18.....	32.99	Nov. 21.....	33.10		

147-076-17BCC MP is top of 2-inch steel pipe 3.10 ft above lsd.

Dec. 23, 1977.....	77.41	June 20.....	76.73	Sept. 19.....	77.30
Apr. 18, 1978.....	77.25	July 21.....	78.40	Oct. 17.....	77.66
May 19.....	77.29	Aug. 15.....	77.57	Nov. 22.....	77.35

147-076-22CCC1 MP is top of 2-inch steel pipe 3.30 ft above lsd.

Sept. 19, 1978.....	65.80	Nov. 21.....	66.69	Dec. 21.....	68.98
Oct. 17.....	68.35				

147-076-22CCC2 MP is top of 1¼-inch plastic pipe 2.00 ft above lsd.

Sept. 18, 1978.....	+37.35	Nov. 21.....	+40.80	Dec. 21.....	+39.65
Oct. 30.....	+40.23				

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

147-076-22CCC3 MP is top of 1¼-inch plastic pipe 3.20 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
July 24, 1978.....	+18.40	Oct. 30.....	+38.85	Dec. 21.....	+38.85
Sept. 19.....	+3.45	Nov. 21.....	+40.00		

147-076-24BBB2 MP is top of 2-inch steel pipe 3.30 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
July 24, 1978.....	48.38	Sept. 19.....	47.20	Nov. 21.....	48.17
Aug. 15.....	47.80	Oct. 17.....	48.50	Dec. 21.....	48.48

147-076-31ABB MP is top of 1¼-inch plastic pipe 2.50 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
July 18, 1978.....	+0.20	Sept. 18.....	+0.90	Nov. 21.....	+0.63
Aug. 15.....	+3.35	Oct. 16.....	+80	Dec. 21.....	+73

147-076-33CCC1 MP is top of 2-inch steel pipe 3.10 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Dec. 23, 1977.....	98.05	July 20.....	98.15	Nov. 21.....	98.30
Apr. 19, 1978.....	97.98	Aug. 15.....	98.29	Dec. 27.....	98.25
May 18.....	97.95	Sept. 18.....	98.19		
June 28.....	98.04	Oct. 16.....	98.38		

147-076-33CCC2 MP is top of 1¼-inch plastic pipe 2.00 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Dec. 23, 1977.....	26.52	July 20.....	25.50	Nov. 21.....	23.43
Apr. 19, 1978.....	26.73	Aug. 15.....	29.20	Dec. 27.....	26.94
May 18.....	26.75	Sept. 18.....	29.40		
June 28.....	26.90	Oct. 16.....	27.12		

147-076-33CCC3 MP is top of 2-inch steel pipe 3.10 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Dec. 23, 1977.....	98.67	July 20.....	98.89	Nov. 21.....	96.26
Apr. 19, 1978.....	98.79	Aug. 15.....	99.05	Dec. 27.....	98.85
May 18.....	98.58	Sept. 18.....	99.29		
June 28.....	98.54	Oct. 16.....	99.18		

147-077-11DDD MP is top of 2-inch steel pipe 3.30 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
June 22, 1978.....	81.06	Aug. 15.....	79.80	Nov. 22.....	79.55
June 27.....	83.12	Sept. 19.....	79.60	Dec. 21.....	79.75
July 17.....	80.00	Oct. 17.....	79.65		

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

147-077-17DDD MP is top of 2-inch steel pipe 3.30 ft above lsd.

	Date	Water level		Date	Water level		Date	Water level
June	23, 1978.....	94.85	Sept.	19.....	93.50	Dec.	21.....	96.49
July	20.....	94.96	Oct.	17.....	96.50			
Aug.	15.....	95.50	Nov.	22.....	94.65			

147-078-03DAD MP is top of 1¼-inch plastic pipe 1.20 ft above lsd.

Sept.	12, 1978.....	0.60	Oct.	17.....	0.22	Nov.	22.....	1.95
Sept.	19.....	.60						

147-078-06BBB MP is top of 1¼-inch plastic pipe 2.75 ft above lsd.

May	18, 1978.....	14.73	Aug.	15.....	16.58	Nov.	22.....	15.14
June	19.....	14.65	Sept.	19.....	15.04			
July	21.....	14.72	Oct.	17.....	15.02			

147-078-14CCC1 MP is top of 2-inch steel pipe 3.30 ft above lsd.

June	27, 1978.....	180.75	Sept.	19.....	94.12	Dec.	21.....	24.53
July	20.....	197.12	Oct.	17.....	65.32			
Aug.	15.....	174.20	Nov.	22.....	38.86			

147-078-14CCC2 MP is top of 1¼-inch plastic pipe 1.00 ft above lsd.

June	27, 1978.....	2.27	Aug.	15.....	1.00	Nov.	22.....	+1.98
July	20.....	1.49	Oct.	17.....	1.02	Dec.	21.....	+2.10

147-078-27DDD MP is top of 1¼-inch plastic pipe 2.30 ft above lsd.

July	20, 1978.....	16.35	Sept.	19.....	16.18	Nov.	22.....	15.95
Aug.	15.....	16.35	Oct.	16.....	16.23	Dec.	21.....	16.08

147-078-30BCC1 MP is top of 1¼-inch plastic pipe 1.30 ft above lsd.

May	4, 1978.....	3.06	July	20.....	3.19	Oct.	17.....	3.87
May	18.....	3.02	Aug.	15.....	3.59	Dec.	27.....	2.77
June	19.....	.35	Sept.	19.....	3.91			

148-075-25CCC MP is top of 1¼-inch plastic pipe 2.50 ft above lsd.

Sept.	7, 1978.....	5.63	Sept.	18.....	5.60	Oct.	16.....	5.76
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Depth to water, in feet below or (+) above land surface

148-076-21AAA MP is top of 2-inch steel pipe 3.10 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Dec. 23, 1977.....	110.19	June 20.....	111.48	Oct. 16.....	112.72
Mar. 23, 1978.....	111.30	July 21.....	162.10	Nov. 22.....	111.81
Apr. 18.....	111.11	Aug. 15.....	125.00	Dec. 27.....	111.45
May 19.....	111.35	Sept. 19.....	113.88		

148-077-02DDD2 MP is top of 2-inch steel pipe 3.30 ft above lsd.

June 21, 1978.....	161.92	Aug. 15.....	174.70	Nov. 22.....	169.30
July 13.....	164.15	Sept. 19.....	171.91		
July 21.....	172.55	Oct. 17.....	169.65		

148-077-13AAA MP is top of 2-inch steel pipe 3.10 ft above lsd.

Dec. 23, 1977.....	50.13	June 19.....	50.13	Oct. 16.....	50.38
Mar. 23, 1978.....	50.20	July 19.....	50.45	Nov. 22.....	50.27
Apr. 18.....	50.06	Aug. 15.....	50.50	Dec. 27.....	50.14
May 19.....	50.22	Sept. 19.....	50.27		

148-078-10CBC MP is top of 1/4-inch plastic pipe 2.50 ft above lsd.

Sept. 12, 1978.....	5.57	Oct. 17.....	5.61	Nov. 22.....	5.61
Sept. 19.....	5.49				

148-078-20BBA MP is top of 1/4-inch plastic pipe 2.00 ft above lsd.

Sept. 13, 1978.....	15.69	Oct. 17.....	17.08	Nov. 22.....	17.15
Sept. 19.....	17.07				

149-076-29BBB MP is top of 1/4-inch plastic pipe 2.00 ft above lsd.

June 16, 1978.....	+0.37	Aug. 16.....	2.87	Nov. 22.....	3.43
June 19.....	4.23	Sept. 19.....	2.77		
July 19.....	1.20	Oct. 16.....	3.24		

149-077-11AAA MP is top of 1/4-inch plastic pipe 2.40 ft above lsd.

June 13, 1978.....	9.11	Aug. 16.....	10.29	Oct. 17.....	10.44
July 21.....	10.07	Sept. 18.....	10.70	Nov. 22.....	10.17

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

149-077-15CCC1 MP is top of 2-inch steel pipe 3.30 ft above lsd.

	Date	Water level		Date	Water level		Date	Water level
July	21, 1978.....	111.86	Sept.	19.....	109.78	Nov.	22.....	114.59
Aug.	16.....	109.59	Oct.	17.....	111.65			

149-077-15CCC2 MP is top of 1¼-inch plastic pipe 1.80 ft above lsd.

July	20, 1978.....	47.54	Sept.	19.....	43.14	Nov.	22.....	43.20
Aug.	16.....	42.79	Oct.	17.....	43.30			

149-077-15CCC3 MP is top of 2-inch steel pipe 3.30 ft above lsd.

June	19, 1978.....	56.74	Aug.	16.....	59.10	Nov.	22.....	60.19
July	20.....	58.45	Sept.	19.....	60.85			
July	21.....	65.19	Oct.	17.....	58.80			

150-074-14BBB MP is top of 2-inch steel pipe 3.50 ft above lsd.

July	21, 1978.....	14.25	Sept.	18.....	15.79	Nov.	21.....	15.28
Aug.	16.....	15.01	Oct.	16.....	15.25	Dec.	20.....	15.18

150-074-14CCC MP is top of 1¼-inch plastic pipe 1.00 ft above lsd.

July	21, 1978.....	24.18	Sept.	18.....	24.25	Nov.	21.....	24.46
Aug.	16.....	24.80	Oct.	16.....	24.42	Dec.	20.....	24.03

150-075-10DCD MP is top of 1¼-inch plastic pipe 2.00 ft above lsd.

Sept.	6, 1978.....	21.87	Oct.	16.....	21.59	Dec.	20.....	21.61
Sept.	18.....	21.60	Nov.	21.....	21.60			

150-075-30AAA1 MP is top of 2-inch steel pipe 3.30 ft above lsd.

June	14, 1978.....	2.46	Aug.	16.....	2.00	Oct.	16.....	3.29
July	19.....	2.70	Sept.	18.....	2.19	Nov.	21.....	2.41

150-075-30AAA2 MP is top of 1¼-inch plastic pipe 1.90 ft above lsd.

June	14, 1978.....	4.93	Aug.	16.....	6.30	Oct.	16.....	6.80
July	19.....	5.40	Sept.	18.....	7.00	Nov.	21.....	7.33

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

150-076-21BBB MP is top of 2-inch steel pipe 3.10 ft above lsd.

Date	Water level	Date	Water level	Date	Water level
Apr. 18, 1978.....	47.60	July 26.....	42.70	Oct. 16.....	48.79
May 19.....	44.25	Aug. 16.....	42.00	Nov. 22.....	46.64
June 19.....	44.40	Sept. 18.....	47.09		

150-077-20BAB MP is top of 1¼-inch plastic pipe 2.00 ft above lsd.

Sept. 11, 1978.....	2.60	Sept. 19.....	3.36	Oct. 17.....	3.60
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150-077-26DDD MP is top of 1¼-inch plastic pipe 2.30 ft above lsd.

July 21, 1978.....	4.35	Sept. 18.....	4.65	Nov. 22.....	5.34
Aug. 16.....	4.60	Oct. 17.....	4.78		

150-077-27BCB MP is top of 1¼-inch plastic pipe 2.50 ft above lsd.

Sept. 11, 1978.....	14.08	Oct. 17.....	14.20	Nov. 22.....	14.26
Sept. 19.....	14.19				

TABLE 3.—Logs of wells and test holes

Depths are shown in feet below land surface.

Electric logs are uncalibrated.

Gamma-ray logs are uncalibrated.

Neutron logs are in API units.

Potential given in millivolts (mV).

Resistance in ohms.

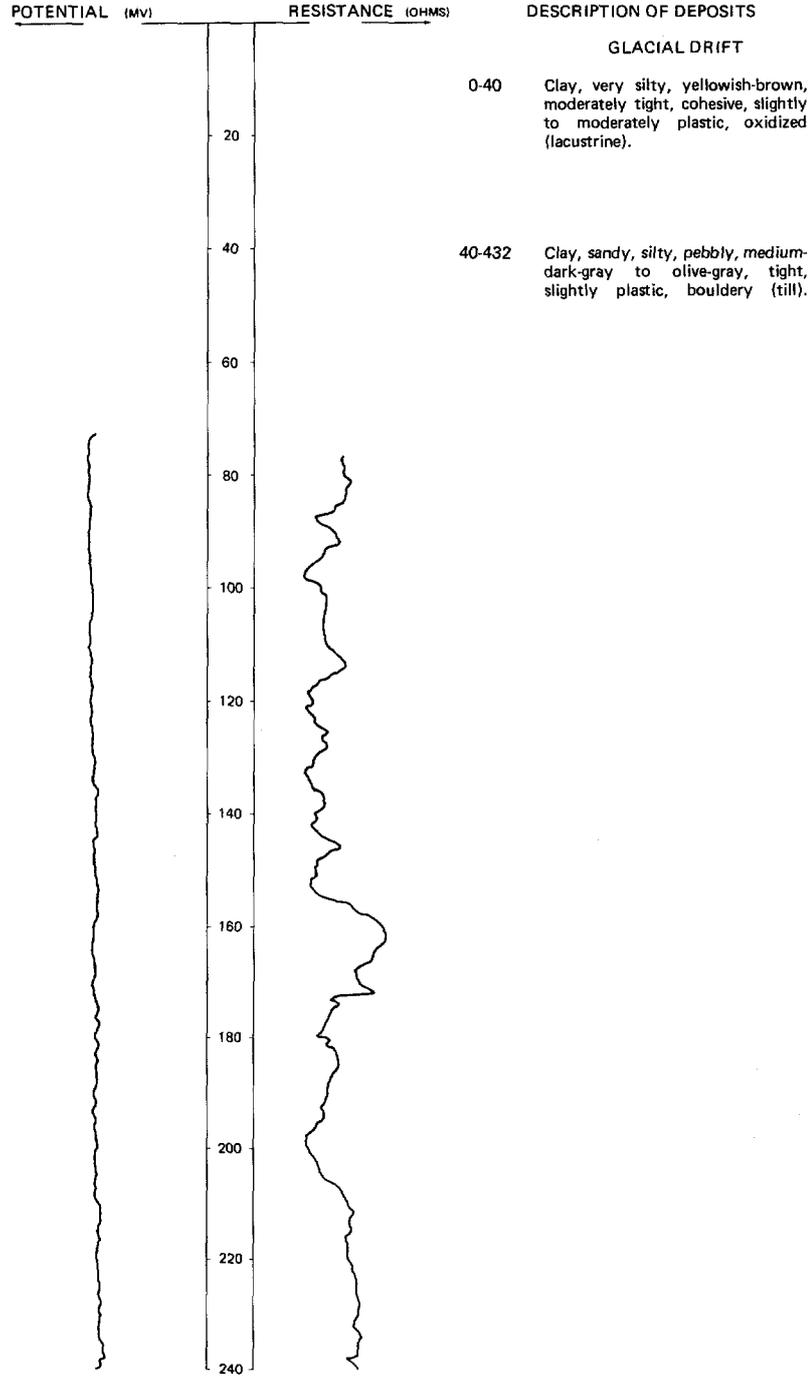
NDSWC 5352

LOCATION: 145-074-06AAD

DATE DRILLED: 7/27/78

ALTITUDE: 2074
(FT, NGVD)

DEPTH: 475
(FT)

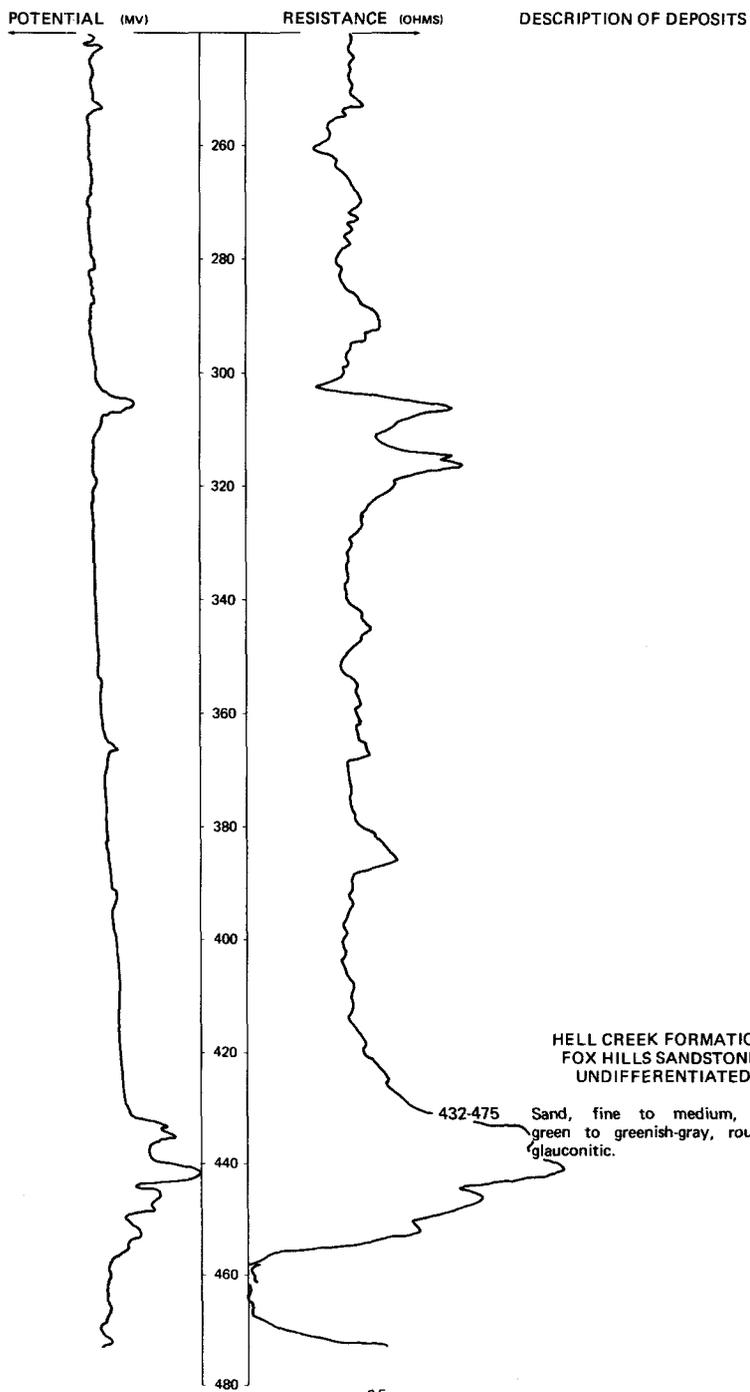


LOCATION: 145-074-06AAD

DATE DRILLED: 7/27/78

ALTITUDE: 2074
(FT, NGVD)

DEPTH: 475
(FT)



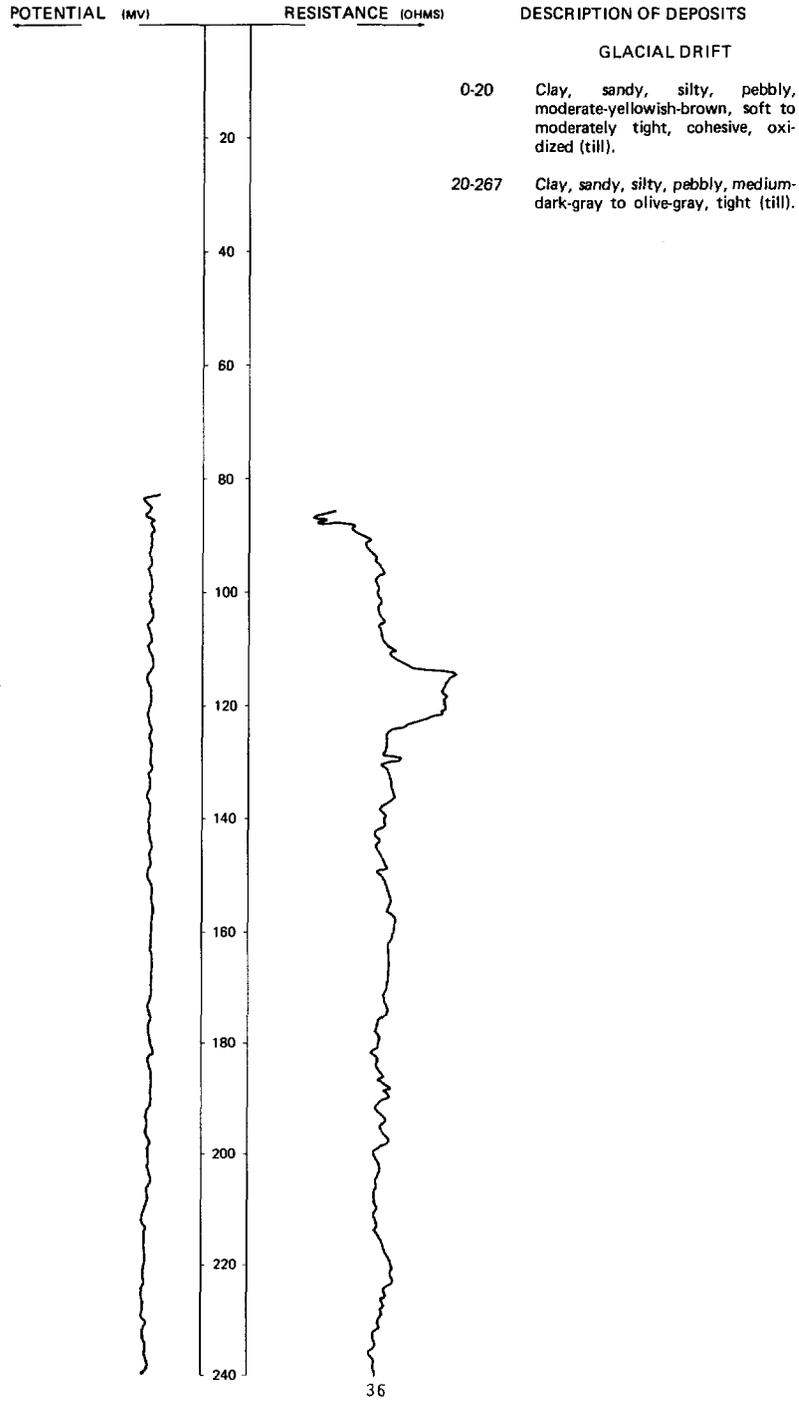
NDSWC 5353

LOCATION: 145-074-06DCC

DATE DRILLED: 7/27/78

ALTITUDE: 2020
(FT, NGVD)

DEPTH: 315
(FT)



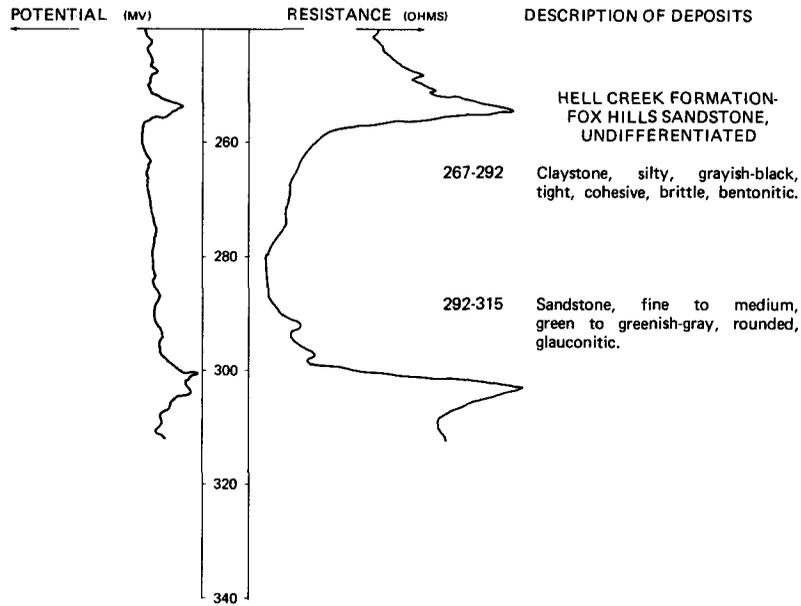
NDSWC 5353, Continued

LOCATION: 145-074-06DCC

DATE DRILLED: 7/27/78

ALTITUDE: 2020
(FT, NGVD)

DEPTH: 315
(FT)



145-074-08AAA
(Log from Feickert Drilling Co.)

Date drilled: 9/07/74

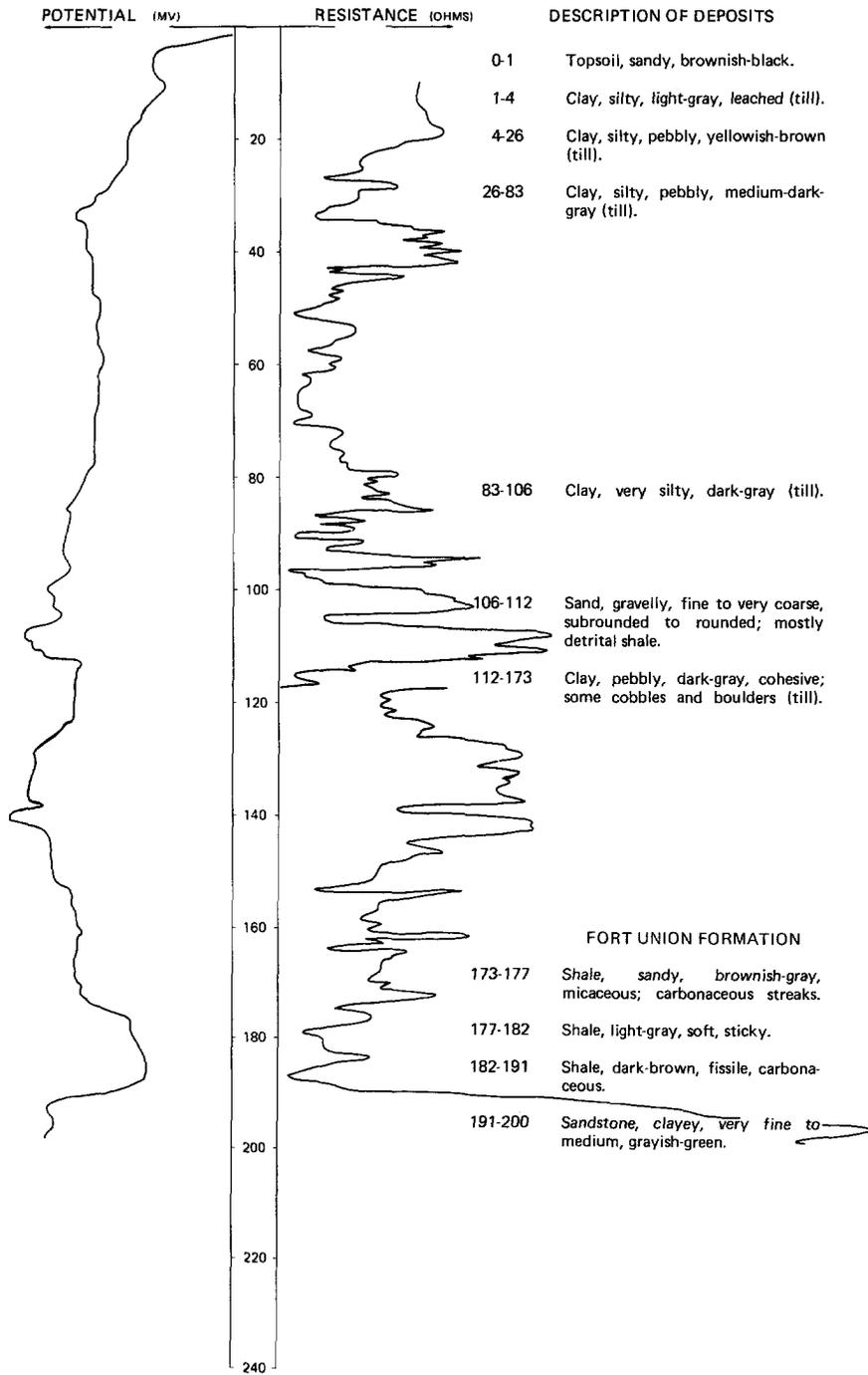
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil.....	1	1
	Clay; with stones.....	4	5
	Sand.....	10	15
	Clay.....	3	18
	Sand.....	17	35
	Clay.....	15	50
	Sand.....	8	58
	Clay.....	12	70
	Sand.....	8	78
	Clay.....	47	125
	Sand.....	5	130
	Clay and shale.....	75	205
	Sand and gravel.....	30	235
	Clay and shale.....	40	275
	Sand.....	20	295
	Clay and shale.....	75	370
	Sand.....	20	390
	Gravel and rocks.....	35	425
	Gravel and sand.....	55	480
	Clay and shale.....	25	505
	Sandstone and shale, blue.....	30	535

LOCATION: 145-074-29ADD

DATE DRILLED: 8/06/79

ALTITUDE: 1990
(FT. NGVD)

DEPTH: 200
(FT)



145-074-32DDD
(Log from Driver Well Drilling, Inc.)

Date drilled: 5/01/73

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	2	2
	Gravel-----	20	22
	Blue clay-----	7	29
	Mixed blue clay and gravel-----	3	32
	Clay-----	23	55
	Mixed blue clay and sand-----	4	59
	Blue till-----	151	210
	Gravel and blue sandy clay-----	25	235

145-074-34D
(Log from L.T.P. Enterprises Inc.)

Date drilled: 5/20/76

	Topsoil, black-----	2	2
	Sand and gravel, colored-----	62	64
	Finer sand, blue-----	3	67
	Sand, blue-----	5	72
	Sand, colored-----	17	89
	Sandy clay, blue-----	58	147
	Sand, colored-----	2	149
	Sandy clay, blue-----	3	152
	Dirty sand, blue-----	5	157
	Soft sandy clay, blue-----	17	174
	Sand, blue-----	5	179
	Sandy clay and shale, blue/dark brown-----	37	216
	Rock, colored-----	1	217
	Sand, blue-green-----	15	232
	Shale, colored-----	4.5	236.5
	Rock, brown-----	1	237.5
	Shale, colored-----	2.5	240
	Sand, blue-green-----	12	252
	Lenses of sand and shale; blue-green-----	20	272
	Shale, blue-green-----	20	292

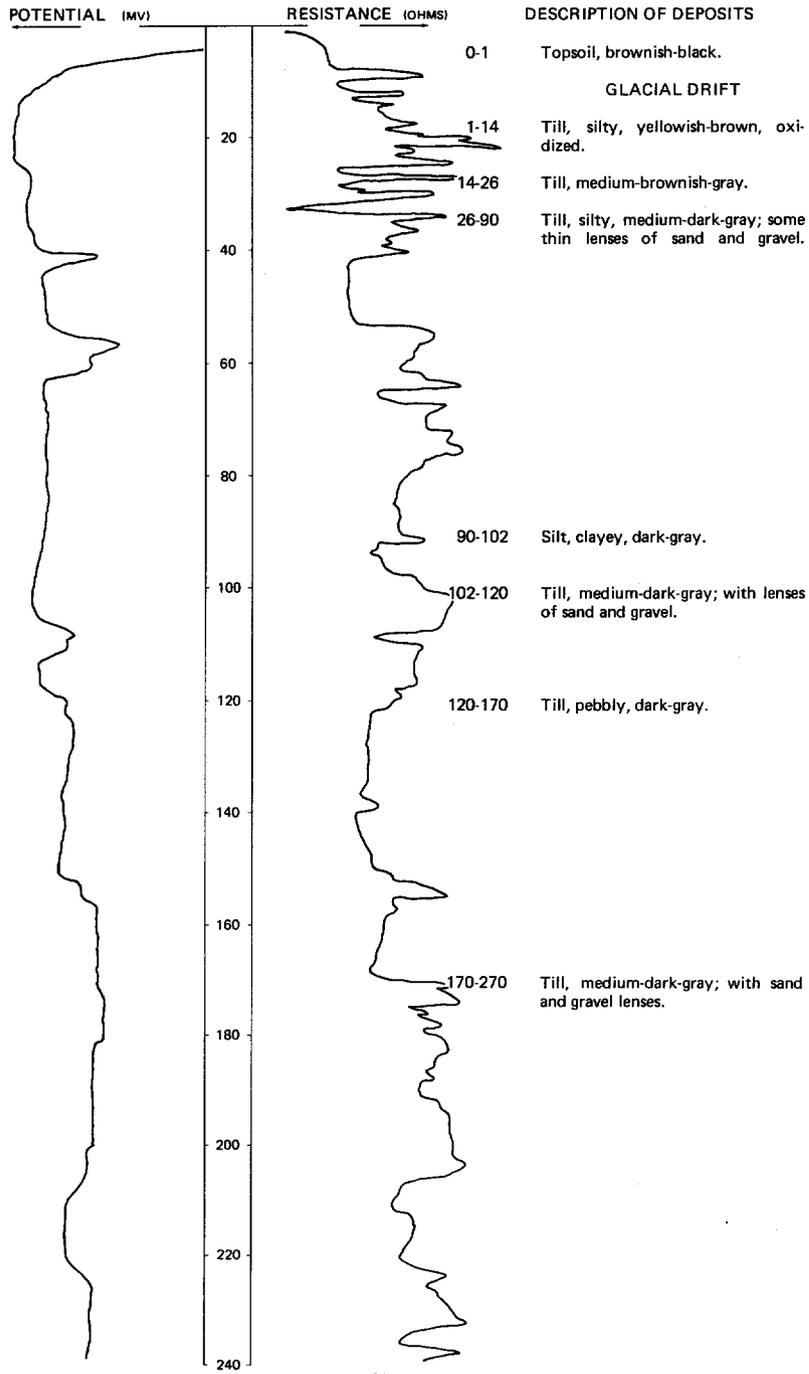
NDSWC 10243

LOCATION: 145-075-07DCD

DATE DRILLED: 8/29/78

ALTITUDE: 2000
(FT, NGVD)

DEPTH: 340
(FT)

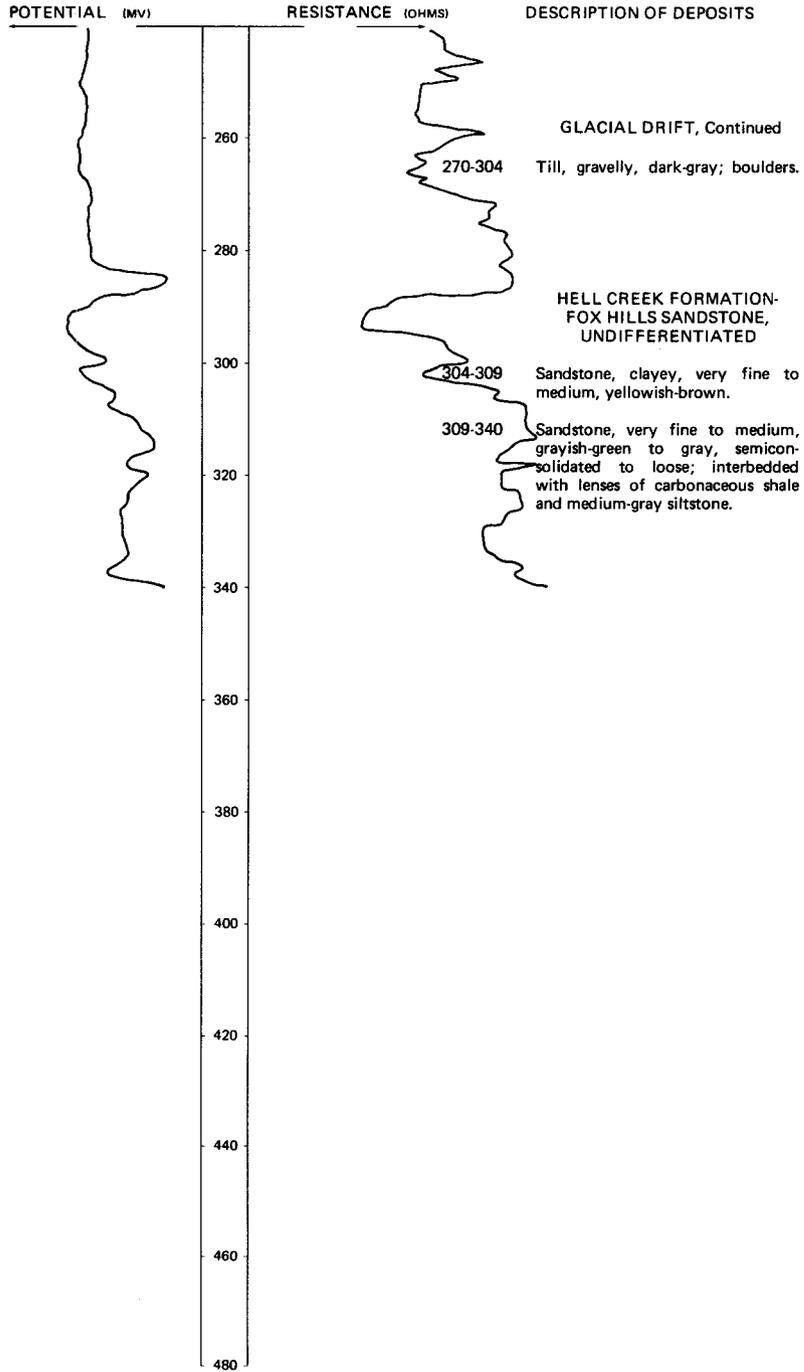


LOCATION: 145-075-07DCD

DATE DRILLED: 8/29/78

ALTITUDE: 2000
(FT, NGVD)

DEPTH: 340
(FT)

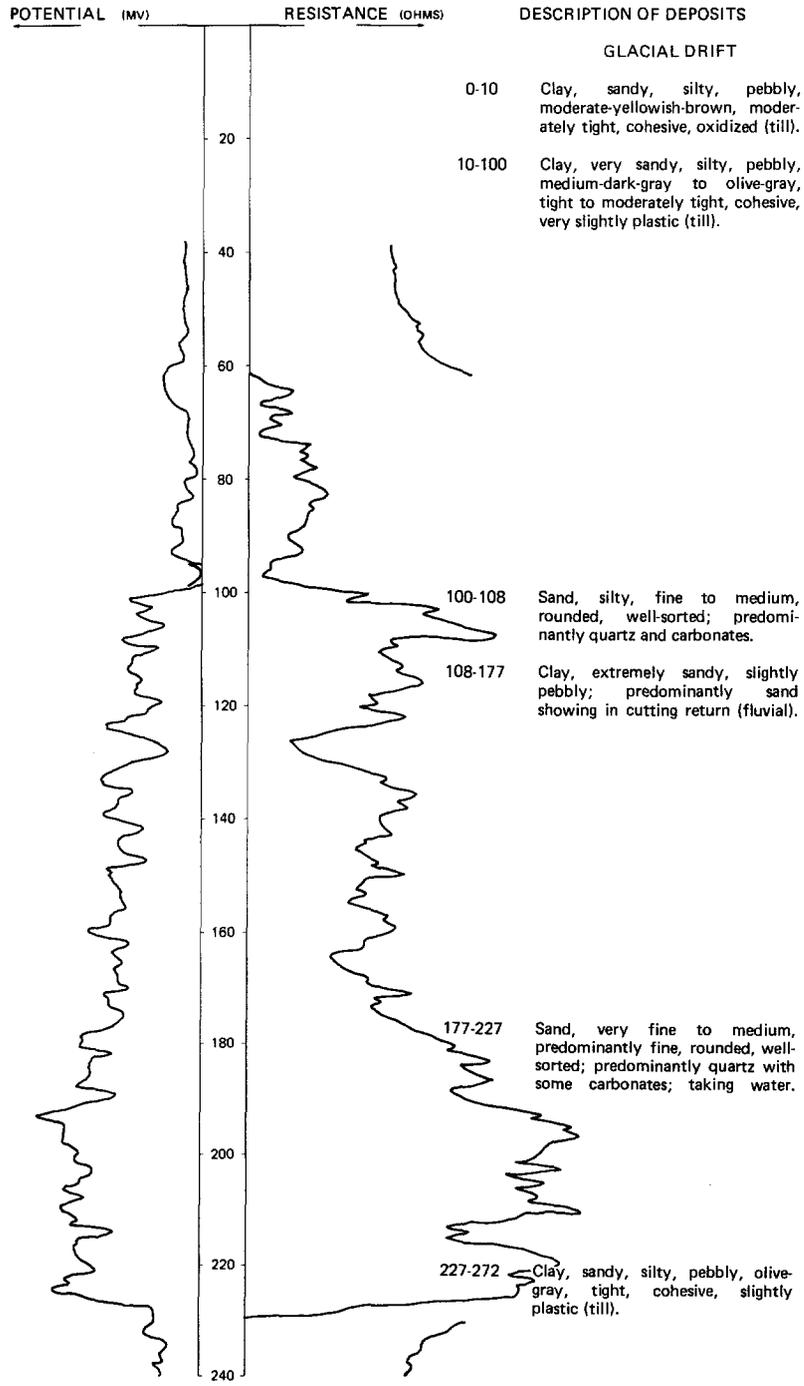


LOCATION: 145-075-09BBB1, 2, 3

DATE DRILLED: 10/11/77

ALTITUDE: 1945
(FT, NGVD)

DEPTH: 782
(FT)

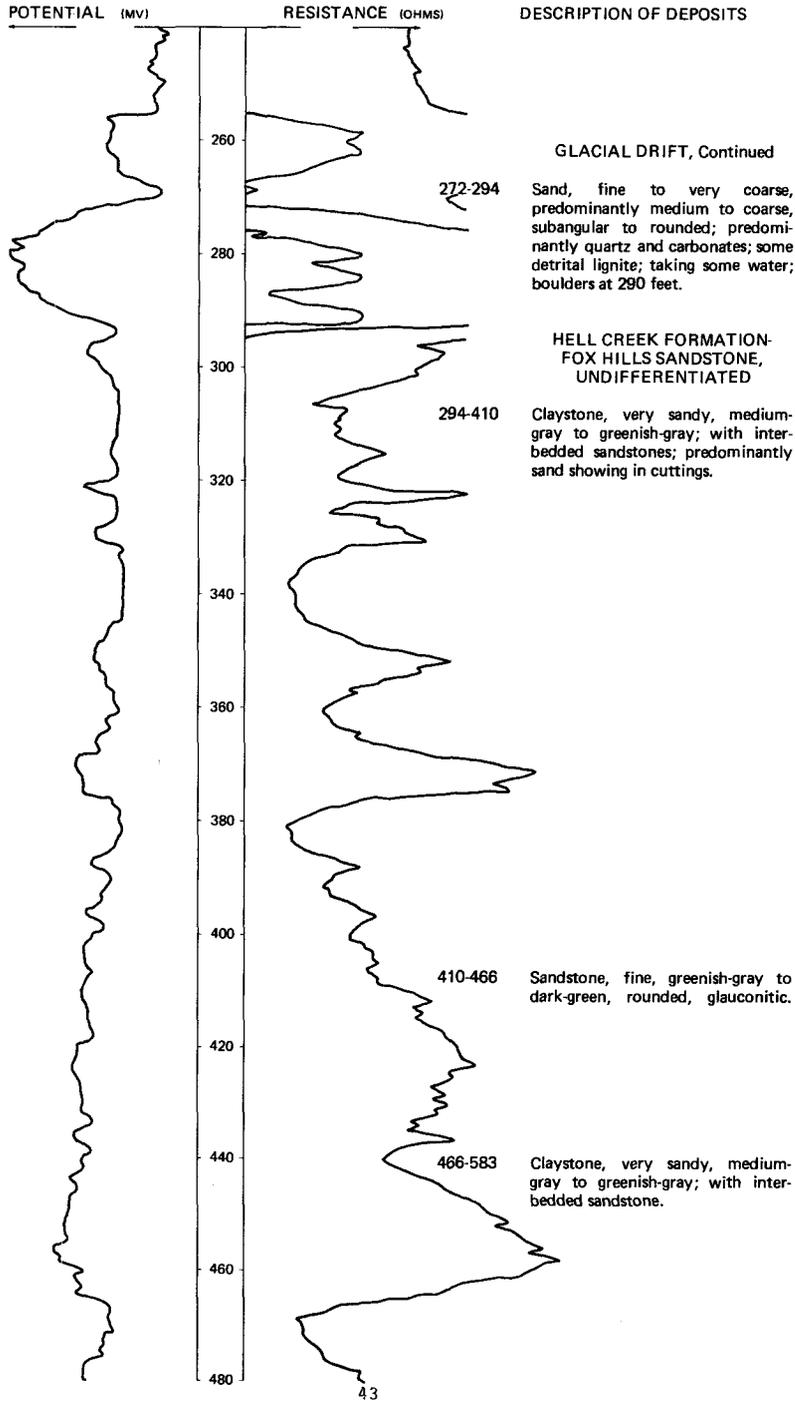


LOCATION: 145-075-09BBB1, 2, 3

DATE DRILLED: 10/11/77

ALTITUDE: 1945
(FT, NGVD)

DEPTH: 782
(FT)



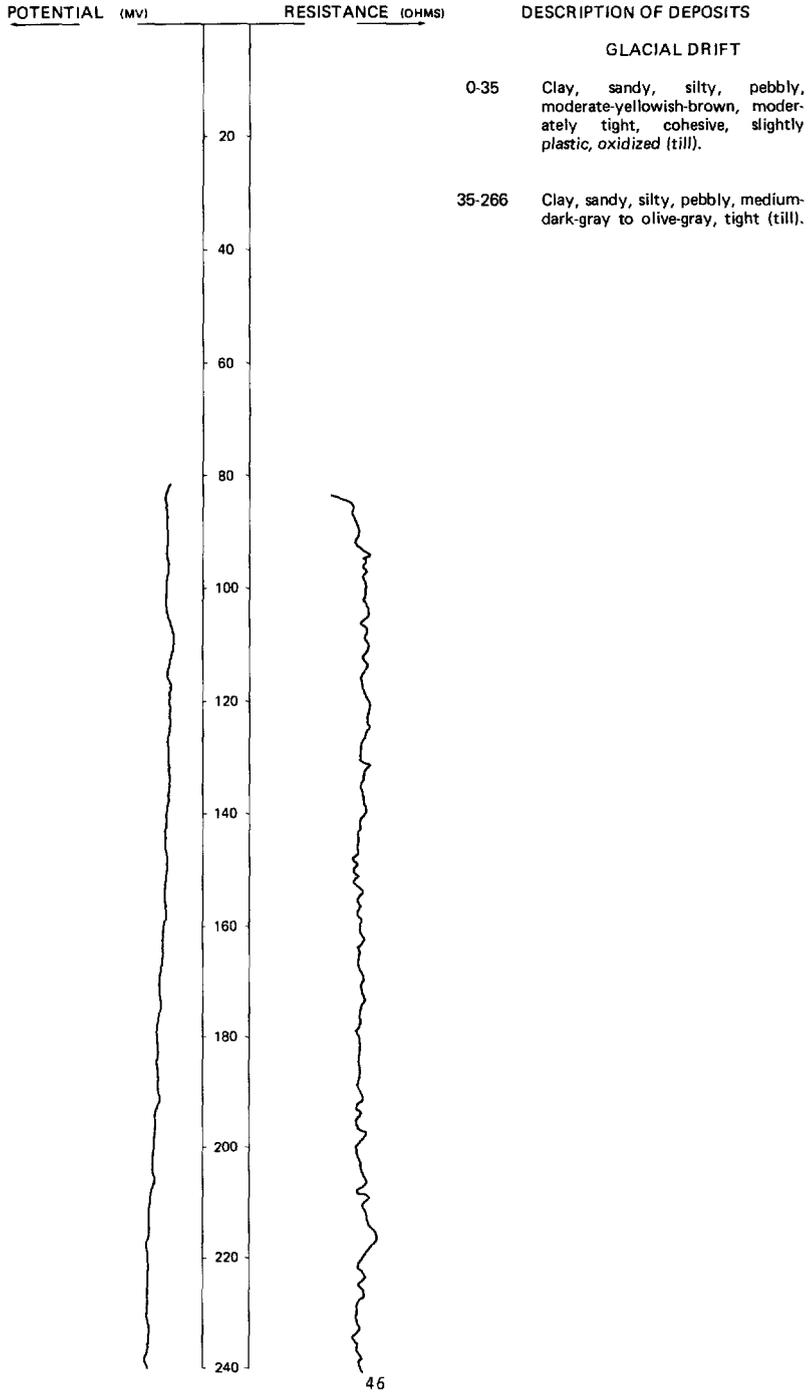
NDSWC 5354

LOCATION: 145-075-13AAA

DATE DRILLED: 7/28/78

ALTITUDE: 2020
(FT, NGVD)

DEPTH: 295
(FT)

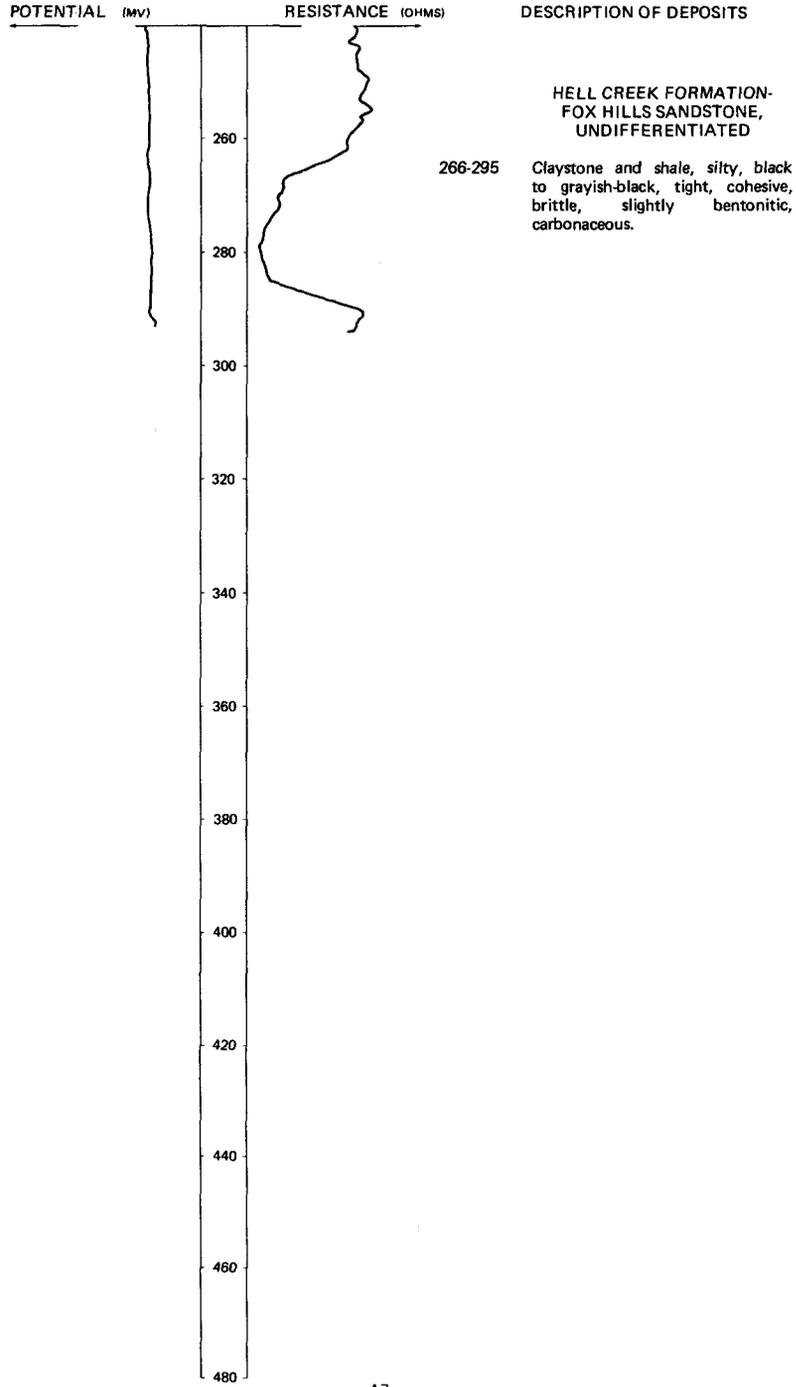


LOCATION: 145-075-13AAA

DATE DRILLED: 7/28/78

ALTITUDE: 2020
(FT, NGVD)

DEPTH: 295
(FT)

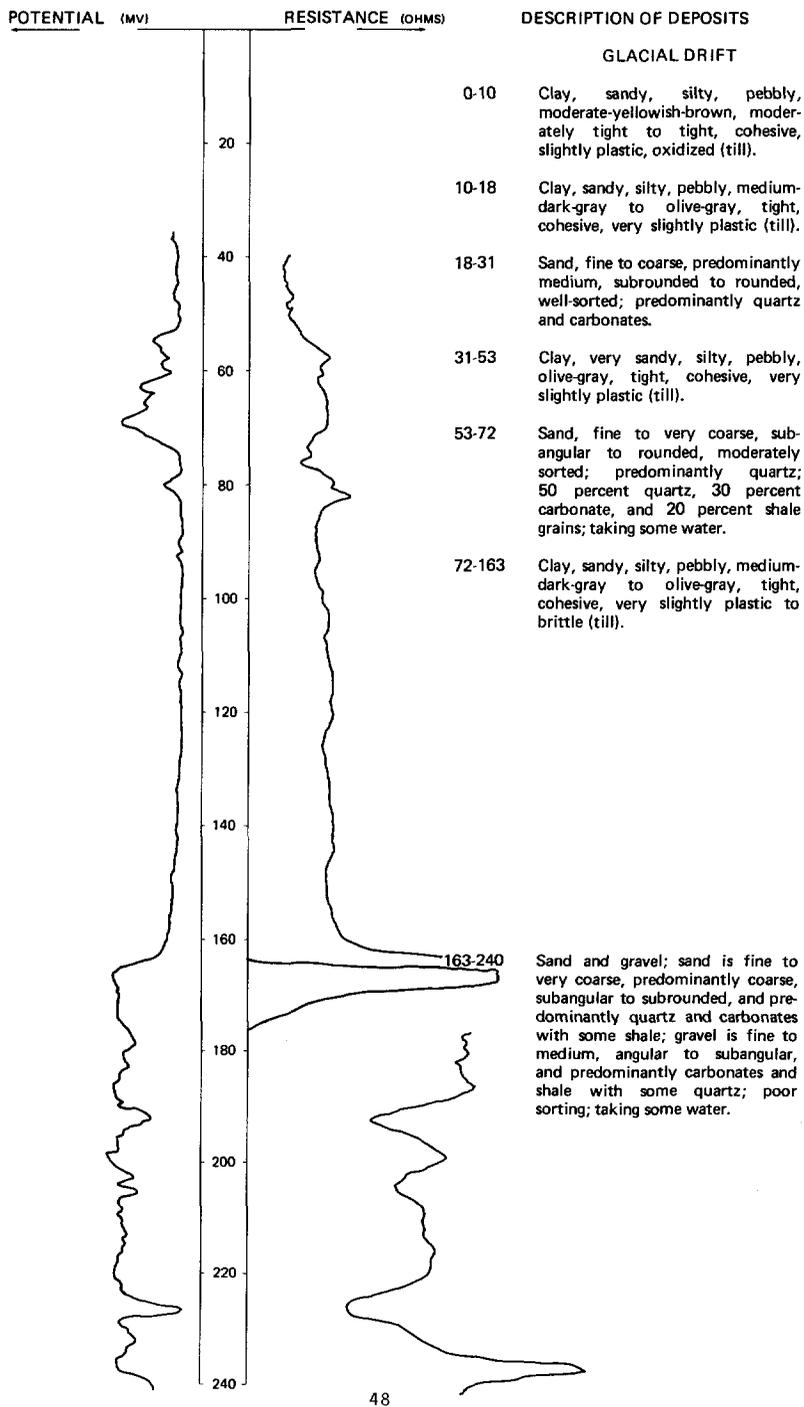


LOCATION: 145-075-14DDD

DATE DRILLED: 10/13/77

ALTITUDE: 1960
(FT, NGVD)

DEPTH: 382
(FT)



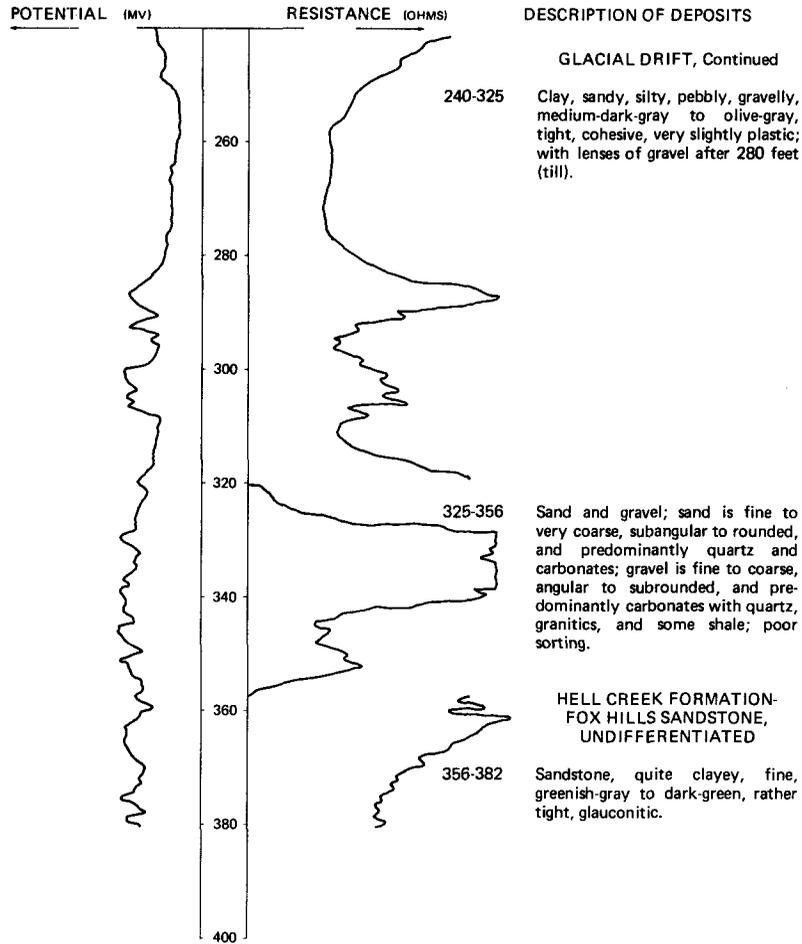
NDSWC 5252, Continued

LOCATION: 145-075-14DDD

DATE DRILLED: 10/13/77

ALTITUDE: 1960
(FT, NGVD)

DEPTH: 382
(FT)



145-075-18BCD
(Log from Feickert Drilling Co.)

Date drilled: 7/12/75

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil	2	2
	Clay	53	55
	Gravel	15	70
	Clay	50	120
	Sand	10	130
	Clay	110	240
	Sand	10	250
	Clay	40	290
	Sand	10	300

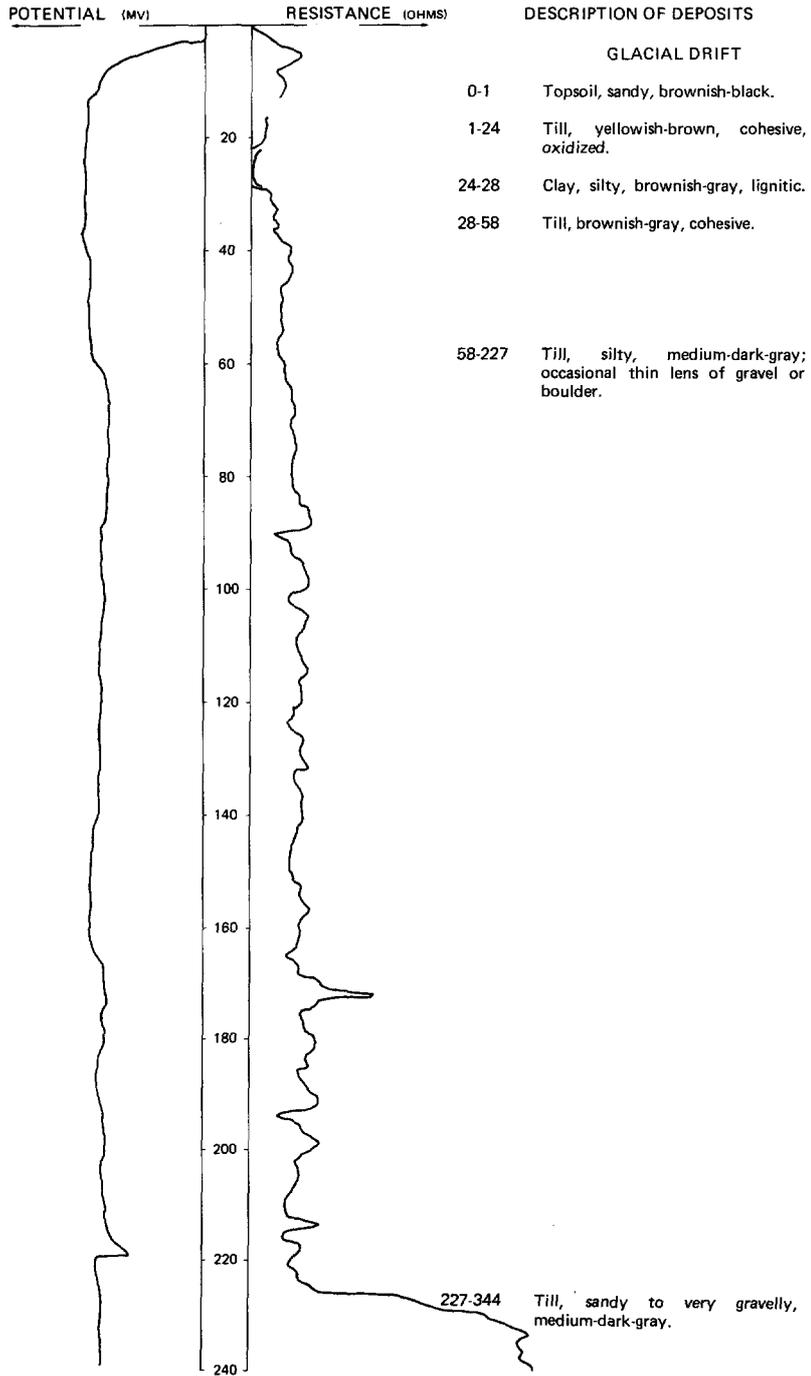
NDSWC 10240

LOCATION: 145-075-22DDD

DATE DRILLED: 8/28/78

ALTITUDE: 1996
(FT. NGVD)

DEPTH: 380
(FT)

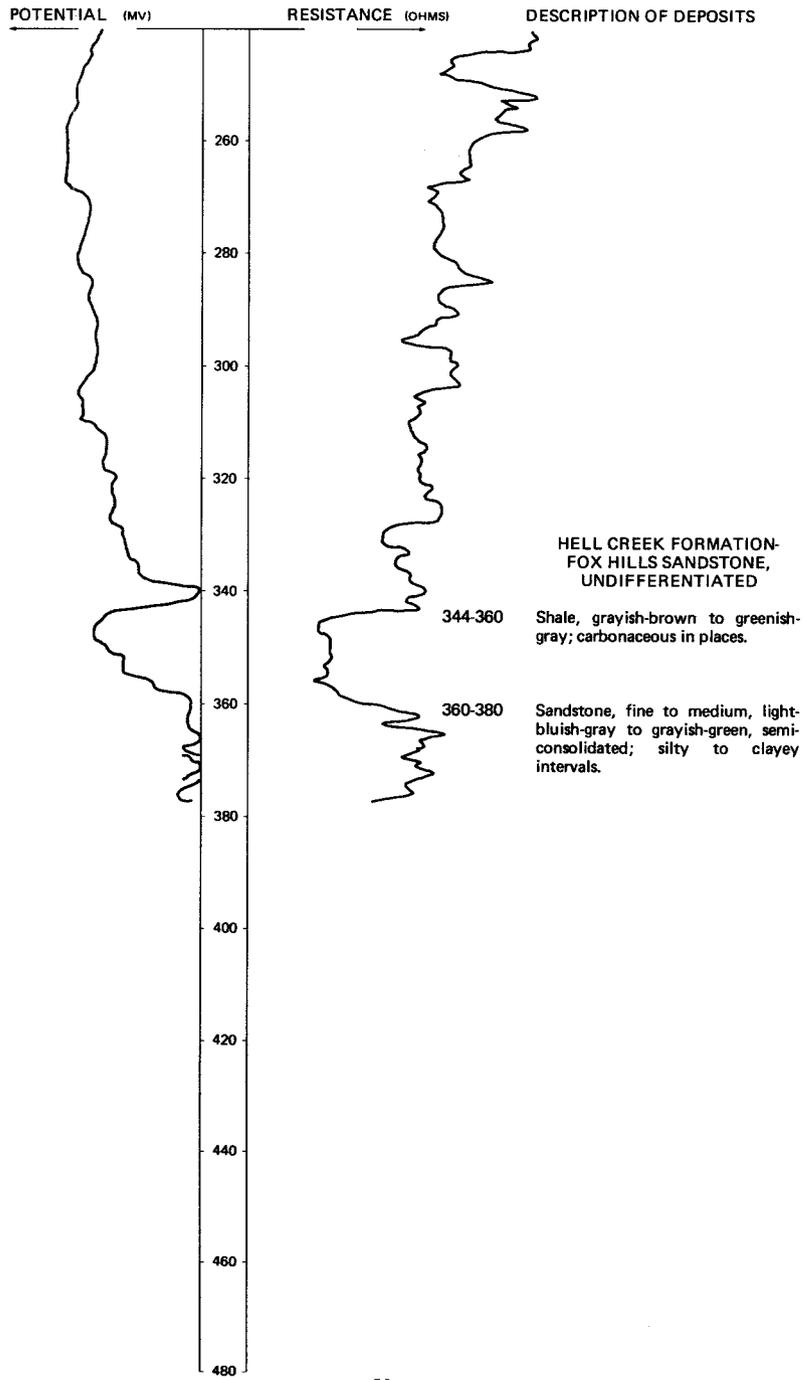


LOCATION: 145-075-22DDD

DATE DRILLED: 8/28/78

ALTITUDE: 1996
(FT, NGVD)

DEPTH: 380
(FT)



145-075-26DBB
(Log from Driver Well Drilling, Inc.)

Date drilled: 8/01/72

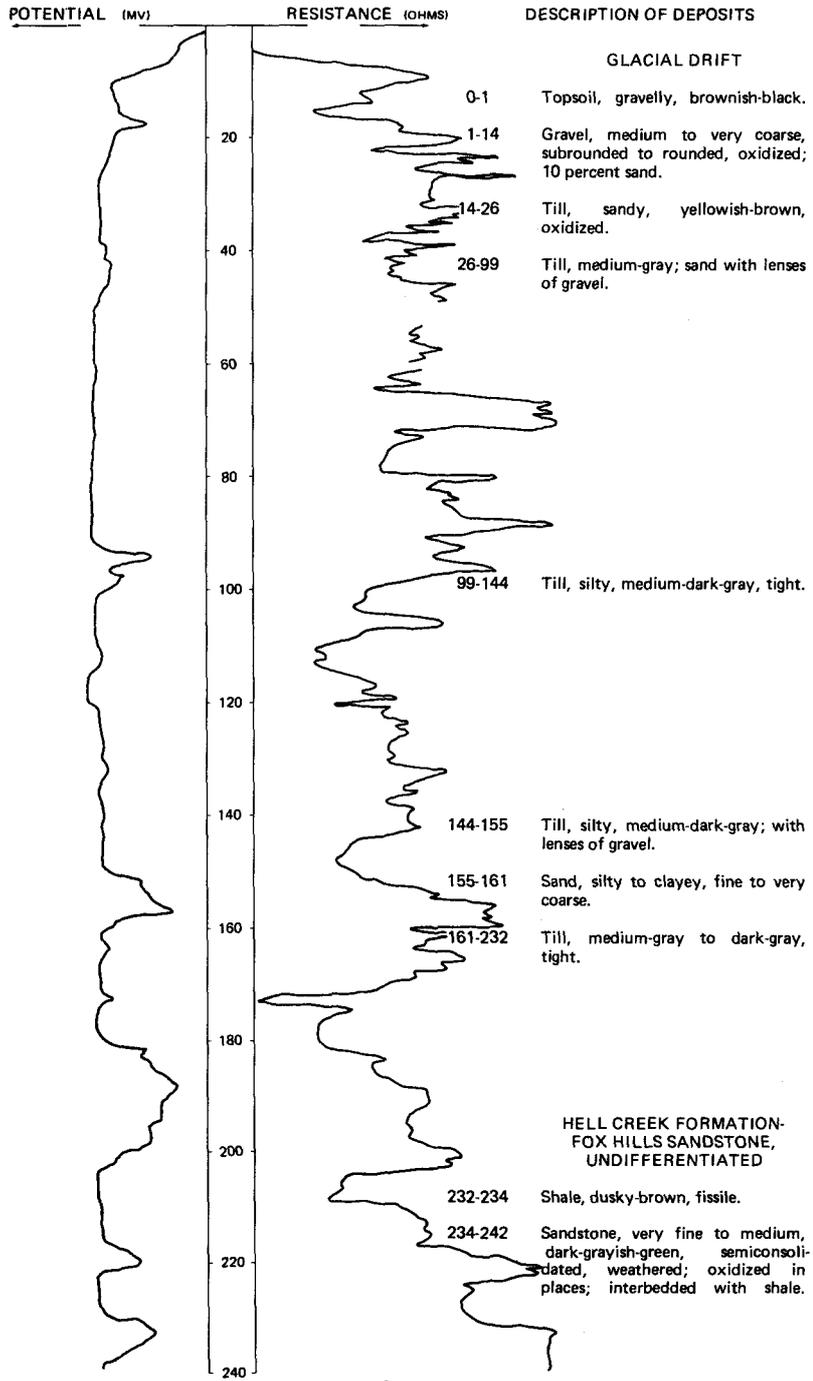
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil.....	2	2
	Gravel and sand.....	18	20
	Blue clay.....	10	30
	Gravel.....	2	32
	Blue clay.....	51	83
	Blue sand.....	5	88
	Blue clay.....	36	124
	Gravel and clay.....	2	126
	Clay.....	41	167
	Rock.....	1	168
	Clay.....	5	173
	Rock (granite).....	2	175
	Clay, soft.....	3	178
	Rock.....	1	179
	Clay.....	36	215
	Rock.....	3	218
	Clay.....	1	219
	Clay; with streaks of sand.....	3	222
	Water-bearing sand.....	18	240

LOCATION: 145-075-29BBB

DATE DRILLED: 8/29/78

ALTITUDE: 1970
(FT, NGVD)

DEPTH: 260
(FT)

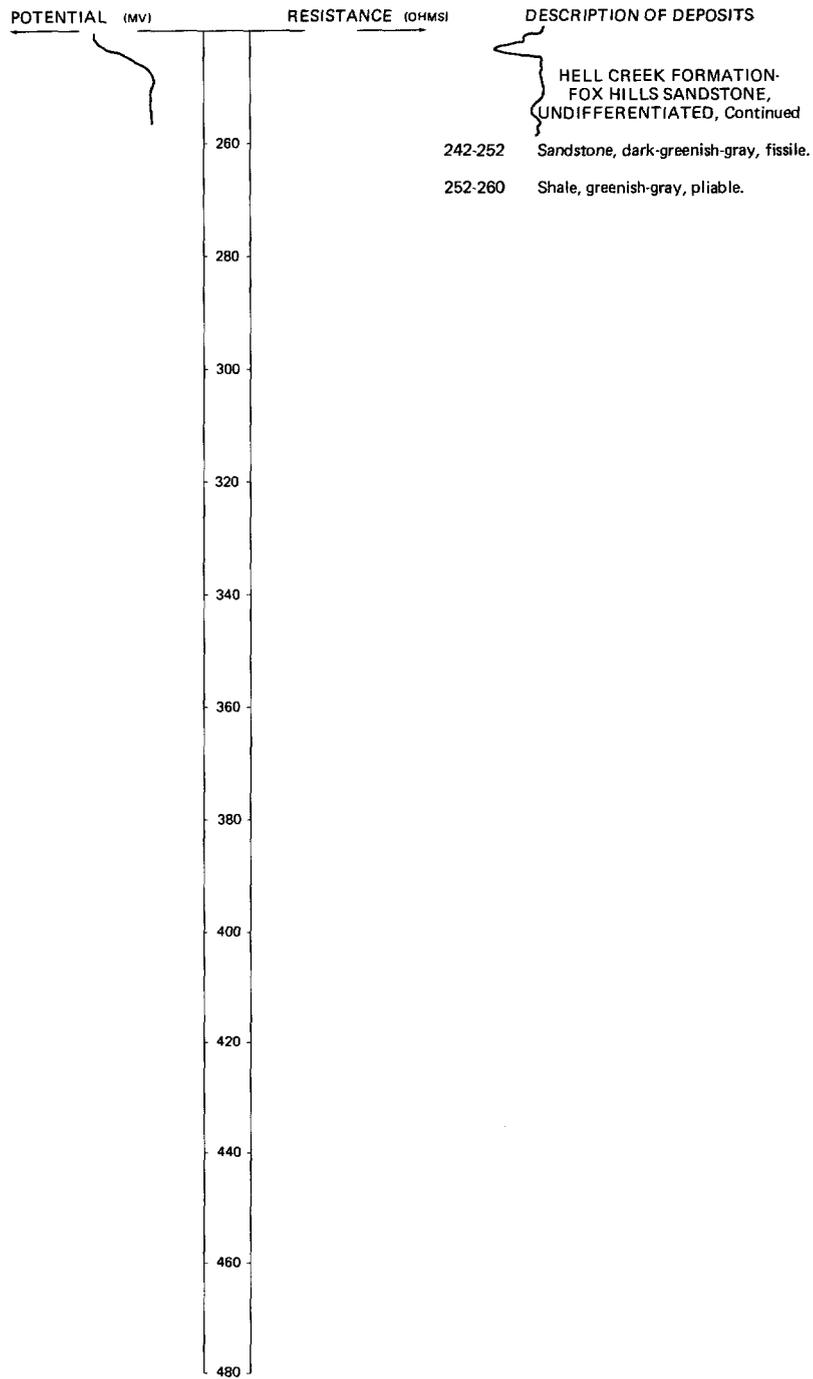


LOCATION: 145-075-29BBB

DATE DRILLED: 8/29/78

ALTITUDE: 1970
(FT, NGVD)

DEPTH: 260
(FT)

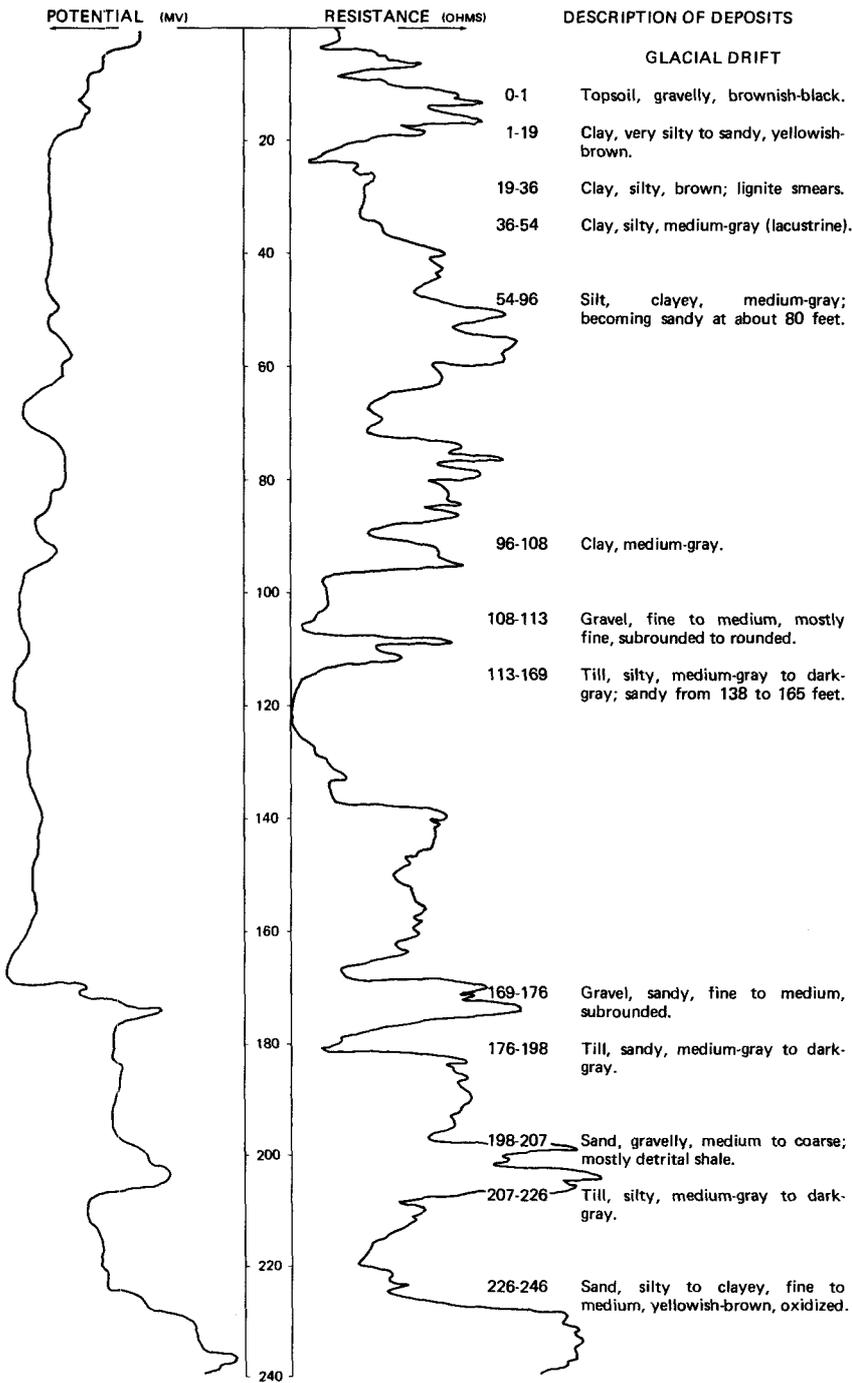


LOCATION: 145-075-34AAA

DATE DRILLED: 8/28/78

ALTITUDE: 1995
(FT, NGVD)

DEPTH: 280
(FT)



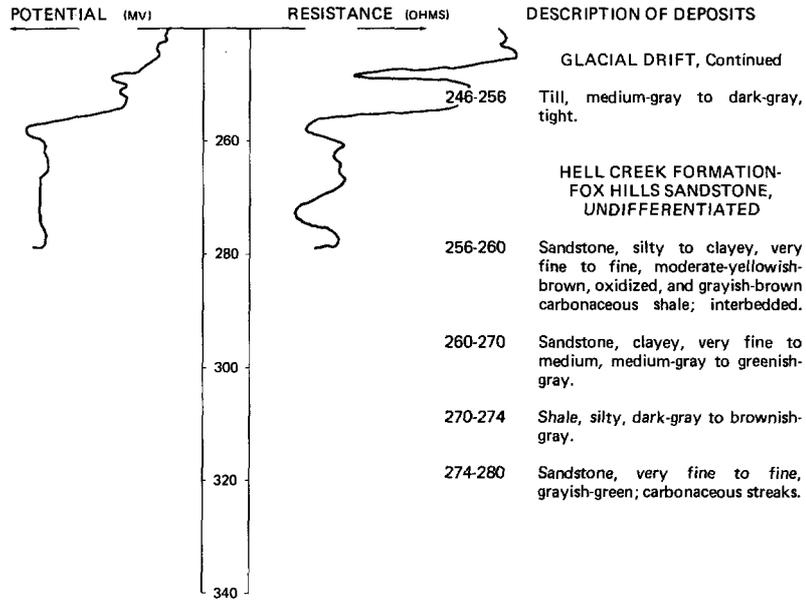
NDSWC 10239, Continued

LOCATION: 145-075-34AAA

DATE DRILLED: 8/28/78

ALTITUDE: 1995
(FT, NGVD)

DEPTH: 280
(FT)



145-075-34DCB
(Log from L.T.P. Enterprises Inc.)

Date drilled: 7/29/76

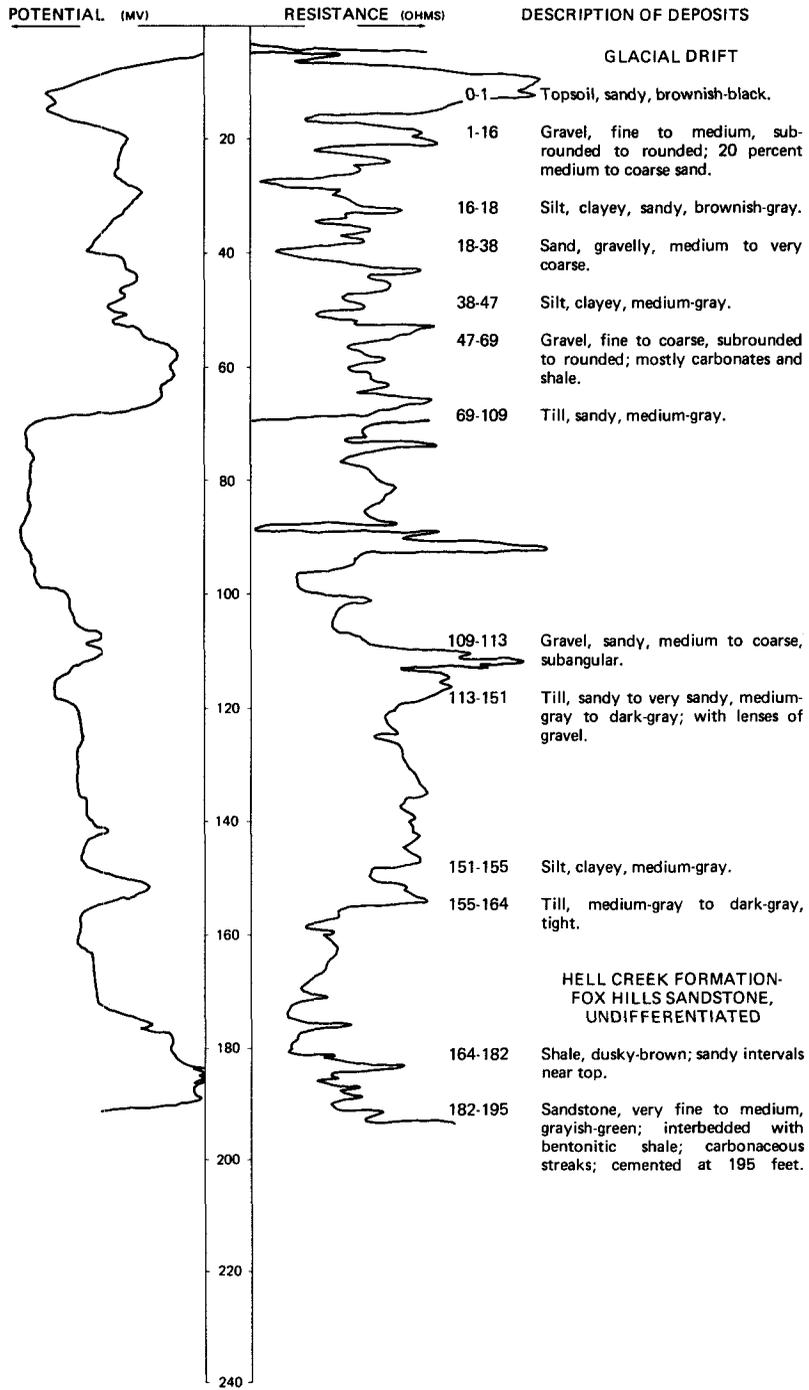
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Sand and gravel, brown	65	65
	Sand, dirty; lenses of clay	5	70
	Sand, fine; took water	5	75
	Sand, fine; lenses of pea rock; took water	15	90
	Sand, fine; took water	5	95
	Sand, very fine	2.5	97.5
	Clay	12.5	110

LOCATION: 145-075-35CCC

DATE DRILLED: 8/29/78

ALTITUDE: 1976
(FT, NGVD)

DEPTH: 195
(FT)



145-076-08DDA
(Log from Russell Drilling Co.)

Altitude: 1970 feet

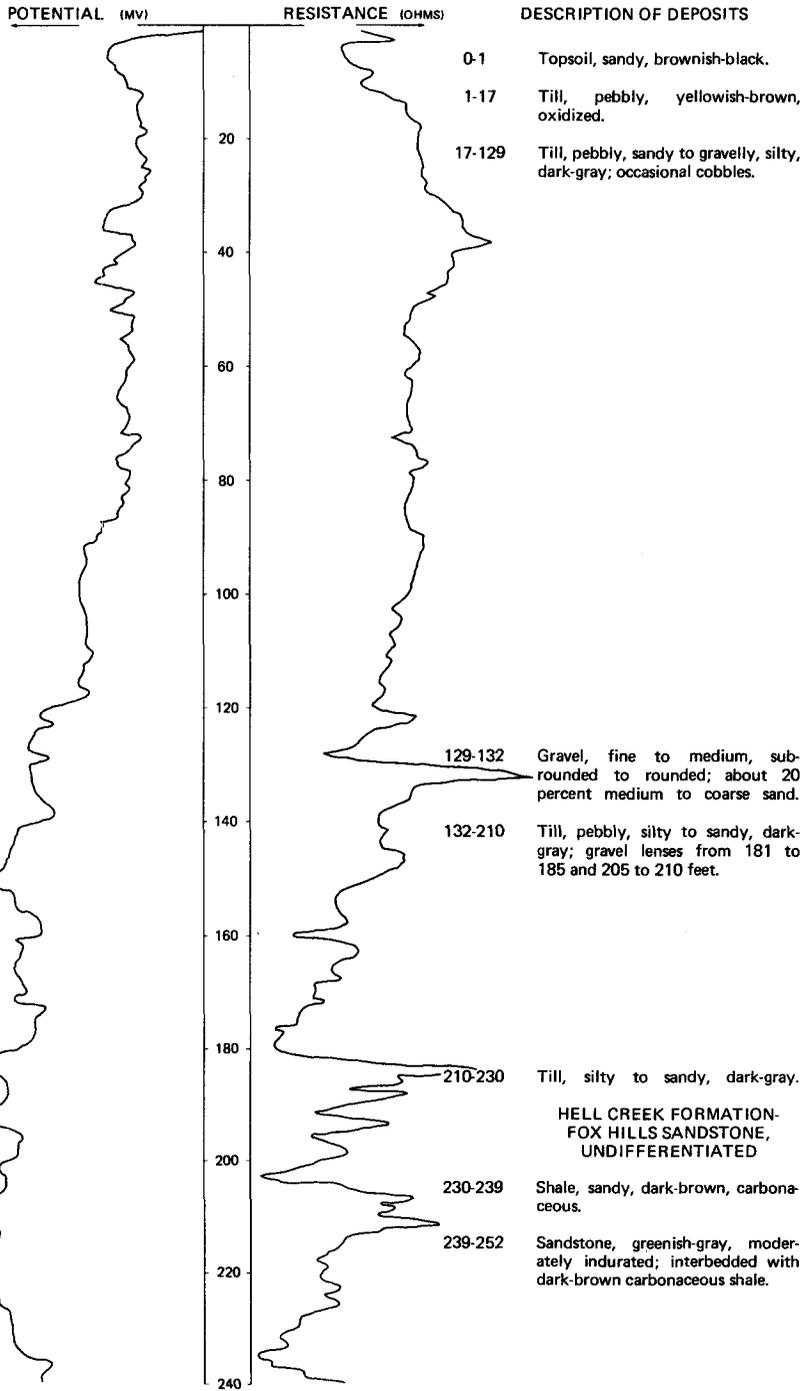
Date drilled: 12/02/75

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1	1
	Yellow silt and sand-----	8	9
	Yellow gravel and till-----	19	28
	Gray silty till-----	92	120
	Gray till; silt-----	85	205
	Yellow gravel and sand-----	70	275
	Gray till-----	5	280

NDSWC 11010

LOCATION: 145-076-20DDC
 ALTITUDE: 1960
 (FT, NGVD)

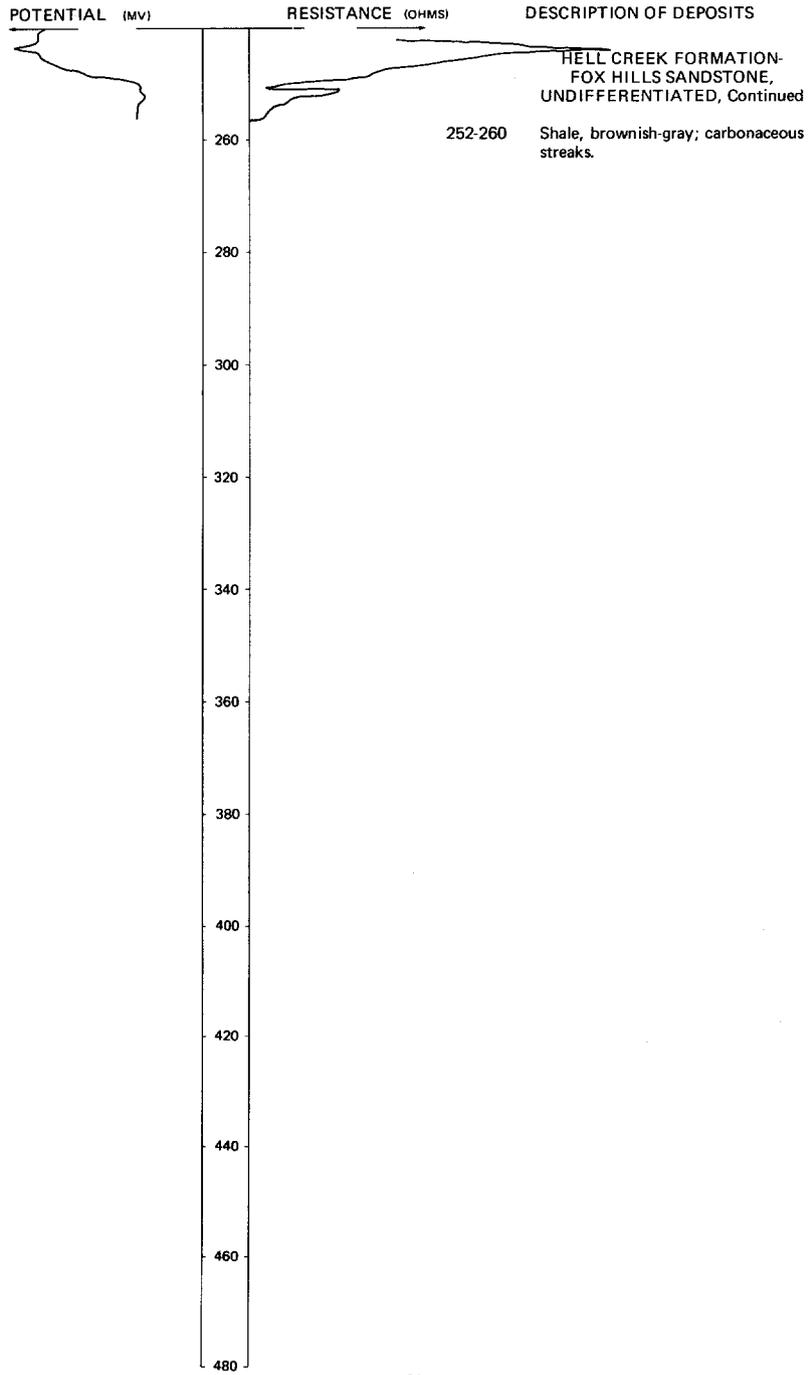
DATE DRILLED: 8/06/79
 DEPTH: 260
 (FT)



NDSWC 11010, Continued

LOCATION: 145-076-20DDC
ALTITUDE: 1960
(FT, NGVD)

DATE DRILLED: 8/06/79
DEPTH: 260
(FT)

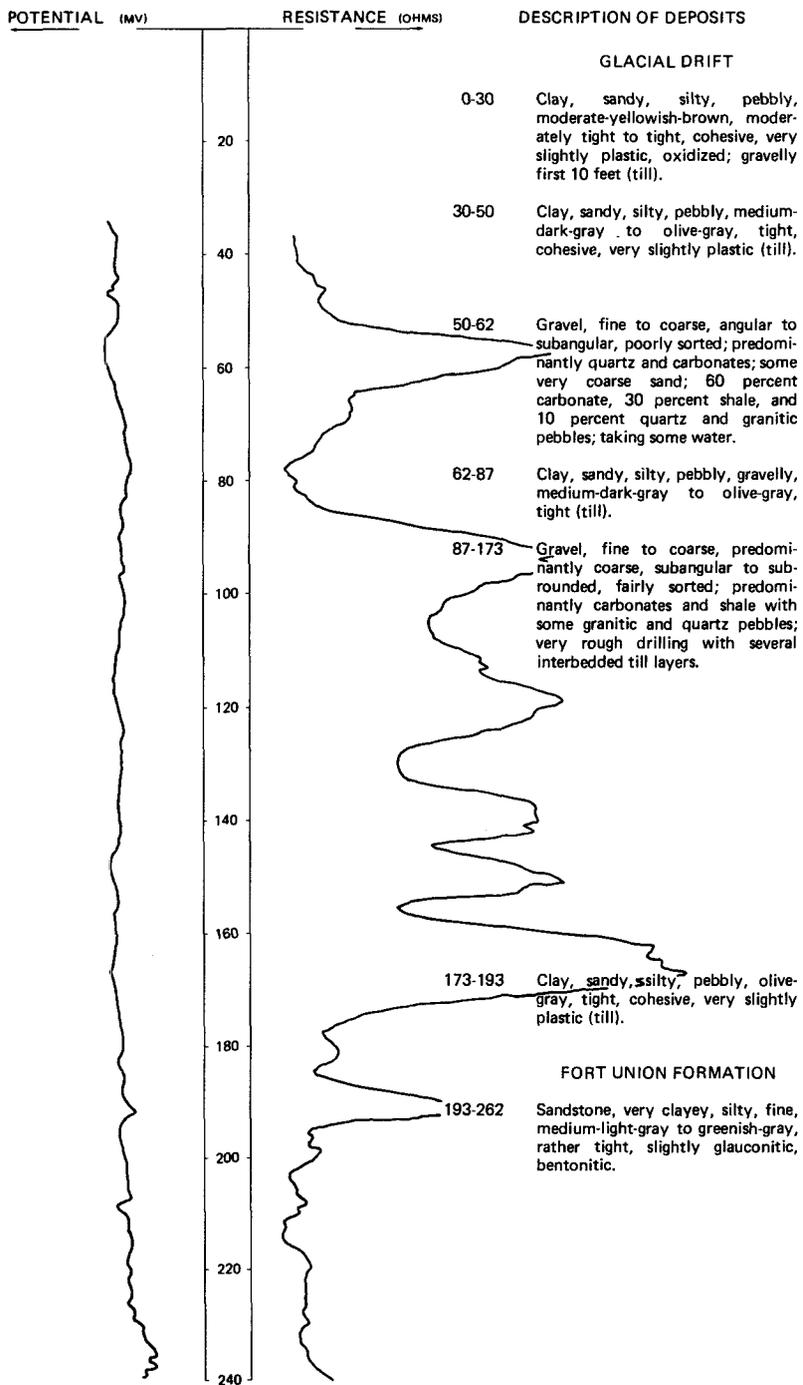


LOCATION: 145-076-23AAB

DATE DRILLED: 10/17/77

ALTITUDE: 2010
(FT, NGVD)

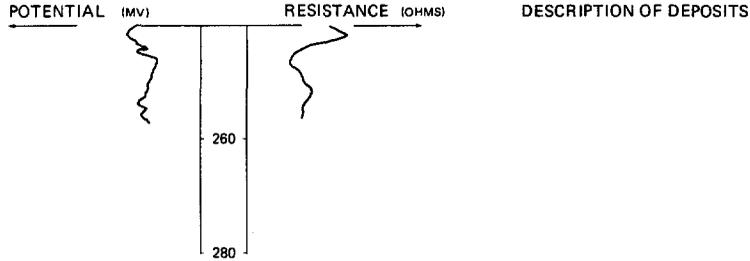
DEPTH: 262
(FT)



NDSWC 5255, Continued

LOCATION: 145-076-23AAB
 ALTITUDE: 2010
 (FT, NGVD)

DATE DRILLED: 10/17/77
 DEPTH: 262
 (FT)



145-077-04AAA
 NDSWC 5826

Altitude: 1905 feet

Date drilled: 9/18/70

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, sandy, pebbly, silty, grayish-black-----	1	1
	Gravel, sandy, clayey, silty, fine to coarse, mostly fine to medium, angular to rounded, fairly sorted; some cobbles; 50 percent carbonate, 25 percent shale, and 25 percent granitic and metamorphic pebbles; taking some water-----	17	18
	Sand, moderately gravelly, fine to very coarse, angular to rounded, moderately sorted to well-sorted, slightly lignitic; 50 percent quartz, 30 percent carbonate and feldspar, and 20 percent granitic and shale fragments; taking water; gravel caving from above-----	20	38
	Gravel, moderately sandy, fine to coarse, angular to rounded, fairly sorted, oxidized; much cobble- and boulder-sized material; some clay matrix; 50 percent carbonate, 25 percent shale, and 25 percent granitic and metamorphic pebbles; taking some water; caving in; very rough drilling-----	32	70
	Cobbles and boulders, gravelly, clayey; very rough drilling-----	7	77
	Clay, silty, moderately sandy, pebbly, olive-gray, moderately cohesive, moderately plastic, calcareous; a few cobbles and boulders (till)-----	13	90
	Abandoned hole at 90 feet due to severe caving-----	---	90

145-077-04ABC
 (Log from Driver Well Drilling, Inc.)

Date drilled: 11/01/72

Topsoil-----	2	2
Sand, fine-----	10	12
Gravel, coarse-----	28	40
Clay-----	2	42
Rocks and clay-----	8	50
Rock-----	2	52
Clay, coal, and rock-----	46	98
Solid rock-----	1	99
Clay, soft-----	16	115
Gray clay-----	75	190
Clay, soft-----	20	210
Streaks of sand-----	10	220
Water-bearing sand-----	10	230

145-077-04CDB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1864 feet	Date drilled:	12/13/54
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1	1
	Sand, medium to coarse; small proportion of silt and clay; 10 to 20 percent fine gravel; brown-----	11.6	12.6
	Silt and clay; gradations of clayey silt to silty clay; moderately compacted; gray-----	2.4	15
	Clay (glacial till), silty, sandy, pebbly, gray-----	53.5	68.5
	Sand and gravel; medium sand; fine gravel; clayey; gray-----	1.5	70

145-077-04DAB
(Log from Driver Well Drilling, Inc.)

		Date drilled:	5/22/73
	Topsoil-----	2	2
	Sand and rock-----	6	8
	Rock; gravel with clay-----	82	90
	Blue clay-----	44	134
	Coal-----	2	136
	Blue clay-----	14	150
	Coal-----	1	151
	Clay-----	1	152
	Rock; clay with coal-----	31	183
	Clay, soft-----	3	186
	Blue clay, hard-----	8	194
	Rock-----	2	196
	Blue clay-----	36	232
	Rock-----	1	233
	Water-bearing sand-----	2	235

145-077-05ABB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1873 feet	Date drilled:	3/19/68
Glacial drift:			
	Topsoil, organic; silty fine clay; sandy; black-----	1.5	1.5
	Clay, silty; calcareous silty fine uniform sand zone from 3 to 3.8 feet; clay from 3.8 to 4 feet; gravel from 3.8 to 4 feet; gray alluvium-----	2.5	4
	Sand and gravel; 60 percent gravel; 40 percent well-graded sand; subangular and rounded; clean; glaciofluvial; gray and brown-----	6	10
	Sand and gravel, clayey; well-graded sand from 10 to 15 feet; 10 to 20 percent silty clayey fines; acid reaction; fine to medium gravel with occasional coarse gravel; glaciofluvial; brown to gray-----	17	27
	Clay (glacial till); tough with soft zones; silty; sandy; fine gravels throughout; coarse to cobbly gravel from 55 to 60 feet-----	51	78
Fort Union Formation:			
	Clay shale, nonindurated; silt lens from 78 to 78.5 and 79.8 to 80 feet; light-gray silt laminations; gray-----	2	80

145-077-09ADD
NDSWC 5830

Altitude:	1885 feet	Date drilled:	9/23/70
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
Glacial drift:	Topsoil, sandy, pebbly, silty, brownish-black-----	1	1
	Gravel, moderately sandy to sandy, slightly clayey and silty, fine to coarse, mostly fine to medium, angular to rounded, fairly sorted, well-oxidized; about 50 percent carbonate, 30 percent granitic and metamorphic, and 20 percent shale and siltstone pebbles; taking water rapidly-----	20	21
	Sand, slightly to moderately gravelly, fine to very coarse, mostly medium to coarse, angular to subrounded, moderately well sorted, slightly oxidized; mostly quartz and carbonates; some shale; detrital lignite; taking water-----	29	50
	Gravel, moderately sandy, fine to coarse, angular to rounded; about 60 percent carbonate, 30 percent granitic and metamorphic, and 10 percent shale, siltstone, and lignite; caving slightly; taking water-----	14	64
	Clay, very silty, sandy, cohesive, slightly plastic, calcareous; medium dark gray with light-olive-gray laminations (fluvial)-----	12	76
	Clay, silty, moderately sandy, pebbly, olive-gray, moderately cohesive, moderately plastic, calcareous; a few cobbles (till)-----	12	88
	Sand, fine to very coarse, angular to subrounded, moderately well sorted; mostly quartz and carbonates; some shale and lignite-----	3	91
	Clay, silty, slightly sandy, pebbly, olive-gray, moderately cohesive, moderately plastic, calcareous; a few cobbles (till)-----	45	136
	Gravel, very sandy, fine to medium, angular to subrounded; primarily carbonates; some granitics and shale-----	7	143
	Clay, silty, moderately sandy, pebbly, olive-gray to medium-dark-gray, cohesive, moderately plastic, calcareous (till)-----	27	170
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:	Shale, moderately sandy to sandy, clayey, dark-greenish-gray to brownish-gray, moderately indurated, noncalcareous, glauconitic, micaceous-----	30	200

145-077-09BAA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1856 feet	Date drilled:	3/01/68
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, organic; very fine sandy silt; occasional fine gravel; sandy from 3.5 to 4 feet; moderate acid reaction; black-----	4	4
	Silty sand; fine to medium grained; 10 to 20 percent silty fines with trace of clay; few gravels from 4 to 5 feet; cobbles at 5 feet; 20 to 30 percent fine gravel; organic; moderate acid reaction; glaciofluvial; dark gray to gray-----	5	9
	Clay, lacustrine, dark-gray-----	1.5	10.5
	Sand, fine to medium; zones of well-graded sand; 10 percent fine gravel from 10.5 to 20 feet; cobbles at 15 feet; shale throughout; occasional lignite; 10 to 15 percent silty fines; grayish brown-----	14.5	25
	Silty sand; fine grained; occasional fine gravel; 20 percent silty fines; glaciofluvial; dark gray-----	2	27
	Clay (glacial till), silty, sandy; gravels throughout; clay zone from 20 to 33.5 feet; sandy clay from 66 to 70 feet; gray-----	49.5	76.5
	Sand; fine to medium-coarse grained from 78 to 80 feet; clean with trace of silt; glaciofluvial; gray-----	3.5	80

145-077-09BBB
(Log from Driver Well Drilling, Inc.)

Date drilled: 8/21/72

Topsoil-----	1	1
Sand and rock; 6 to 8 inches-----	5	6
Gravel and rock-----	4	10
Gravel and sand-----	6	16
Pea rock and larger-----	34	50
Rock; 6 to 8 inches; and gravel-----	13	63
Blue hardpan and clay-----	12	75
Blue clay-----	55	130
Clay, soft-----	26	156
Rock-----	1	157
Clay, soft-----	9	166
Rock-----	1	167
Clay-----	31	198
Rock-----	2	200
Clay-----	8	208
Rock-----	1	209
Clay-----	5	214
Sand-----	16	230

145-077-09DBB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1867 feet	Date drilled:	12/15/54
	Topsoil-----	1	1
	Sand and gravel, medium to coarse; 10 to 20 percent medium gravel; clayey; brown-----	13.6	14.6
	Sand, fine to medium; very silty with silt laminations; cohesionless; brown-----	15.9	30.5
	Sand; small proportion of medium-fine gravel; fairly clean; lignite slack at sand; glacial till contact; brown-----	7.2	37.7
	Clay (glacial till), silty, sandy, soft to stiff; few pebbles; gray-----	32.3	70

145-077-09DDD
 (Log from Driver Well Drilling, Inc.)

Date drilled: 8/16/73

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil	2	2
	Sand, gravel, and rock	74	76
	Clay	34	110
	Rock	1	111
	Clay, hard	14	125
	Clay, soft	3	128
	Rock	5	133
	Clay	16	149
	Rock	1	150
	Blue clay	37	187
	Brown hardpan	33	220
	Blue hardpan	10	230
	Blue clay and coal	5	235
	Blue hardpan	11	246
	Rock, hard	1	247
	Water-bearing sand	3	250

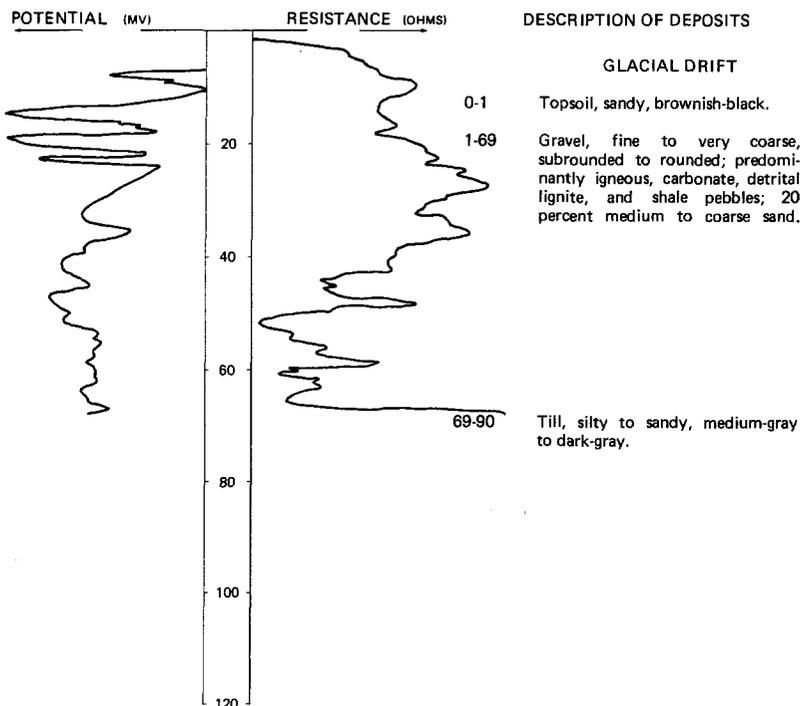
NDSWC 10246

LOCATION: 145-077-16AAB

DATE DRILLED: 8/31/78

ALTITUDE: 1857
 (FT, NGVD)

DEPTH: 90
 (FT)



145-077-16ACC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1857 feet	Date drilled:	2/14/55
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Ice and water-----	7	7
	Clay, silty, gravelly-----	7	14
	Sand and gravel; medium to coarse fairly clean sand; 20 percent fine gravel; grayish-brown-----	46	60

145-077-16CAA
(Log from Driver Well Drilling, Inc.)

		Date drilled:	5/06/72
	Topsoil-----	2	2
	Gravel and sand-----	20	22
	Blue clay-----	6	28
	Gravel and sandrock-----	4	32
	Gray clay-----	53	85
	Clay and gravel; mixed-----	1	86
	Blue clay-----	8	94
	Rock-----	2	96
	Blue clay-----	19	115
	Rock-----	1	116
	Gray clay-----	40	156
	Rock-----	1	157
	Blue clay-----	36	193
	Sandy clay-----	26	219
	Water-bearing sand-----	11	230

145-077-16DAC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1853 feet	Date drilled:	2/08/68
	Ice-----	1.5	1.5
	Silty clay; coarse gravels from 8 to 10 feet; alluvium-----	8.5	10
	Clayey gravel; fine to coarse gravel; medium to coarse sand; acid reaction; 20 to 30 percent silty to clayey fines; glaciofluvial; light gray-----	10	20
	Sand and gravel; well-graded sand; clean; 20 to 30 percent fine gravel; 3/4 inch maximum size; glaciofluvial; brown-----	5	25
	Silty sand; silty fine uniform sand, gravel, and clay lenses; glaciofluvial; grayish-----	5	30
	Clay (glacial till); fine to medium sand lenses; fine gravel throughout; lignite fragments-----	10	40

145-077-21ACA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1857 feet	Date drilled:	2/26/68
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, organic; silty clay; trace of fine sand; gravels from 2 to 3 feet; slight acid reaction; black-----	4	4
	Clayey sand; well-graded sand; 15 to 30 percent clay fines; 20 percent gravel; active acid reaction; glaciofluvial; brown to dark gray-----	6	10
	Silty sand; fine uniform sand; trace of clay; some gravel; mild acid reaction; glaciofluvial; gray-----	4	14
	Clayey sand and gravel; well-graded sand; fine to medium gravel; 10 to 20 percent clayey fines; 30 percent gravel; silty zone from 14 to 15 feet; glaciofluvial; gray-----	9	23
	Sand and gravel; sand with lenses of fine sand; 10 percent silt; 40 percent fine to medium gravel; lignite and shale throughout; glaciofluvial; gray-----	13	36
	Clayey sand and gravel; lignite from 36 to 39 feet; well-graded sand; fine to medium gravel; 10 to 20 percent clayey fines; 30 percent gravel; glaciofluvial; black to brown-----	13	49
	Clay (glacial till), silty, sandy; gravels throughout; some lignite; gray-----	5	54

145-077-21CDC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1868 feet	Date drilled:	12/20/54
	Sand, fine, very silty, clayey, grayish-brown-----	2.4	2.4
	Sand, fine to medium, silty; trace of clay; thin lignite and clay streaks; brown to gray-----	29.8	32.2
	Silt and sand; some clay; laminated; compacted; gray-----	6.4	38.6
	Sand and gravel; fine to medium sand; medium gravel; silty; gray-----	2.6	41.2
	Silt and sand; fine to medium sand; medium gravel; silty; gray-----	3.4	44.6
	Sand and gravel; fine to coarse sand and fine gravel; clean; well graded; gray-----	9.8	54.4
	Clay (glacial till), silty, sandy, pebbly, gray-----	10.6	65

145-077-22BAA
(Log from Driver Well Drilling, Inc.)

	Date drilled:	8/01/74
Topsoil-----	2	2
Gravel, rock, and sand-----	63	65
Boulders-----	1	66
Blue clay-----	119	185
Rock-----	11	196
Blue clay-----	54	250
Water-bearing sand-----	5	255

145-077-22BBA
(Log modified from U.S. Bureau of Reclamation)

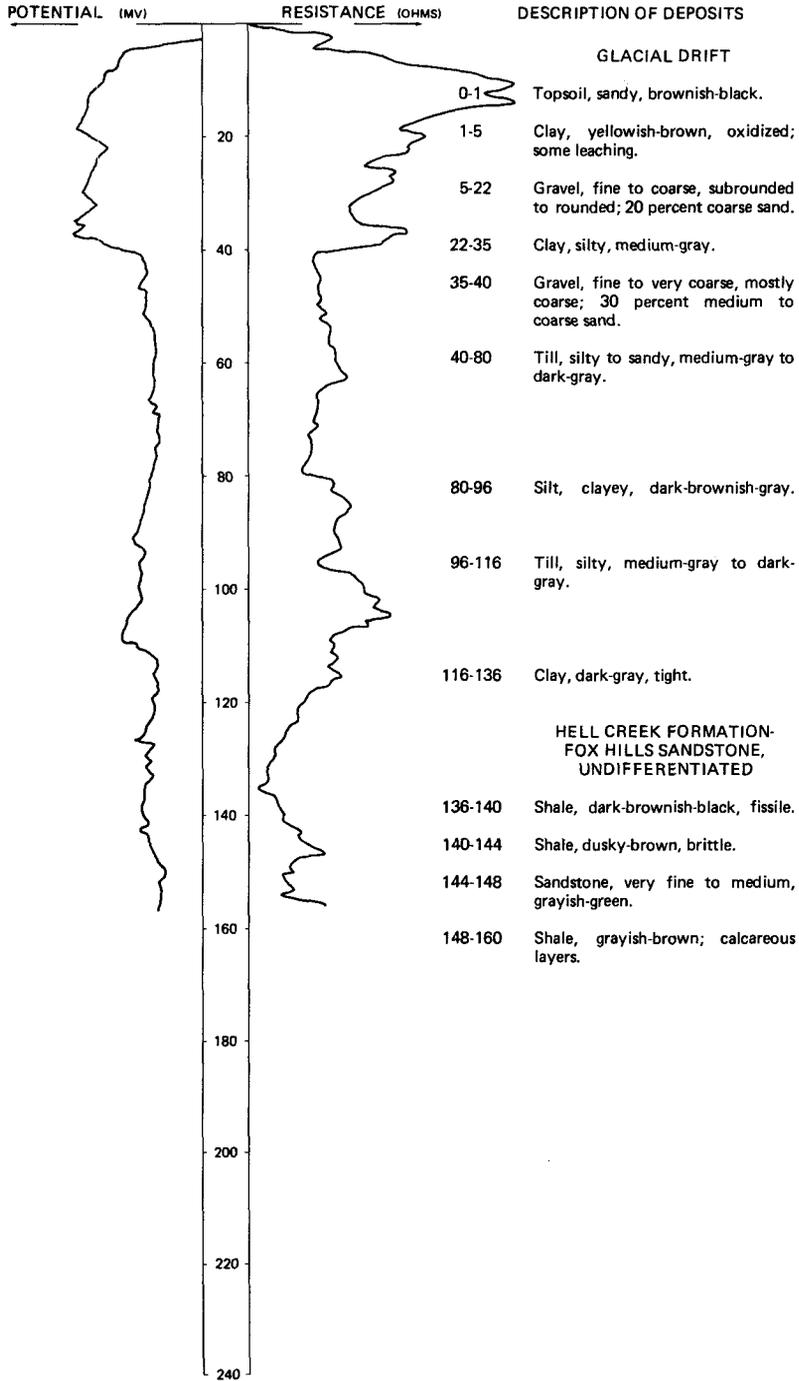
Altitude:	1856 feet	Date drilled:	7/23/71
	Glacial till, sandy-----	5	5
	Clayey gravel-----	5	10
	Gravel; clay seams-----	10	20
	Silty gravel, medium-----	20	40
	Gravel and clay-----	10	50

LOCATION: 145-077-22BBB

DATE DRILLED: 8/31/78

ALTITUDE: 1860
(FT, NGVD)

DEPTH: 160
(FT)



145-077-28BDC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1866 feet	Date drilled:	12/21/54
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1	1
	Silt, clayey, crumbly, brown-----	1.5	2.5
	Silt and sand; fine sand to silt; compacted; brown to gray-----	9.6	12.1
	Sand and gravel, medium to coarse; some silt; brown to gray-----	17.8	29.9
	Clay (glacial till), silty, sandy, pebbly, gray-----	30.1	60

145-077-28CCB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1862 feet	Date drilled:	2/20/68
	Topsoil, organic, silty, clayey; trace of fine sand; black-----	2.5	2.5
	Silty clay, calcareous; gravelly from 4.5 to 5 feet; alluvium; grayish brown; light gray-----	2.5	5
	Clayey sand, well-graded; 20 percent fine gravel; 12 percent clayey fines; brown-----	3	8
	Sand, well-graded; clean to silty gravel; shale throughout; lignite from 17 to 19 feet and 20 to 27.5 feet; glaciofluvial; gray and brown-----	19.5	27.5
	Clay (glacial till), silty; 20 percent fine to medium sand; gravel throughout; some cobbles; gray-----	22.5	50

145-077-29DDD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1862 feet	Date drilled:	3/11/68
	Topsoil, silty, black-----	3.5	3.5
	Sand and gravel, coarse; silty lenses-----	23.5	27
	Clay (glacial till); silty layers; gray-----	13	40
	Clay (glacial till); sandy layers; gray-----	20	60

145-077-30CDA
(Log from Driver Well Drilling, Inc.)

		Date drilled:	7/17/73
	Topsoil-----	2	2
	Gravel and clay-----	43	45
	Clay-----	48	93
	Sandrock-----	1	94
	Clay-----	24	118
	Rock-----	1	119
	Gray clay, soft-----	58	177
	Gray clay, dark-----	18	195
	Gray clay, soft-----	74	269
	Clay, hard-----	61	330
	Water-bearing sand-----	20	350

145-077-31CDA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1881 feet	Date drilled:	5/12/71
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, black, gravelly-----	1.5	1.5
	Clay (glacial till), brown, moist-----	28.5	30
	Clay (glacial till), gray, moist, plastic; clayey sand from 89 to 90 feet-----	82	112
	Boulders-----	3	115
	Shale, gray, sandy-----	185	300

145-077-32ABD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1861 feet	Date drilled:	2/19/68
	Topsoil, organic; clayey silt; fine gravel; medium acid reaction; black-----	4	4
	Clayey gravel, calcareous, silty, sandy; 20 to 30 percent gravel; glaciofluvial; brown-----	6	10
	Sand, medium to coarse; 20 to 30 percent fine gravel; clay zones at 12, 15, and 20 feet; shale throughout; glaciofluvial; gray-----	15	25
	Sand and gravel; 50 percent sand; 45 percent fine gravel; 5 percent clayey fines; some coarse gravel (2 to 3 inches); lignite from 30 to 31 feet; glaciofluvial; gray-----	15	40
	Sand and gravel; 50 percent sand; 50 percent fine gravels; shale throughout; glaciofluvial; gray-----	5	45
	Clayey gravel; fine to medium grained; subrounded; calcareous; clayey gravel till from 50 to 52.5 feet; 10 percent clayey fines; well-graded sands; glaciofluvial; gray-----	7.5	52.5
	Clay (glacial till); 20 percent fine sand; gravel throughout; some cobbles; gray-----	7.5	60

145-077-32CDC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1860 feet	Date drilled:	3/05/68
Glacial drift:	Topsoil, organic; silty fine sand; trace of clay; black-----	3	3
	Clay; silty with trace of fine sand; calcareous; lacustrine; gray-----	2	5
	Sandy clay; fine to medium sand; fine to medium gravel; calcareous; 20 to 30 percent silty to clayey fines; glaciofluvial; brown-----	3	8
	Clayey sand and gravel; active acid reaction; 30 to 40 percent gravel; 40 percent sand; 20 percent silty clay fines; glaciofluvial; light gray-----	7	15
	Silty sand and gravel; well-graded sand; 30 to 40 percent fine to medium gravel; calcareous; silty; glaciofluvial; brown-----	4	19
	Sand; silty and clayey zones; medium-grained sand; 30 percent fine gravel; shale throughout; glaciofluvial; grayish brown-----	6.5	25.5
	Sand and gravel; well-graded sand; 20 percent fine gravel; shale throughout; coarse gravel at 26 feet; glaciofluvial; grayish brown-----	10	35.5
	Clayey sand and gravel; well-graded sand; 40 percent fine to medium gravel; coarse gravel from 38 to 40 feet; 20 percent silty to clayey fines; glaciofluvial; light gray-----	18.5	54
	Clay (glacial till), sandy, calcareous; fine gravel throughout; silty; some coarse gravel; gray-----	6	60
Fort Union Formation:	Clay shale, nonindurated; lenses of fine silt; calcareous in silt zones; gray-----	5	65

145-077-32DAB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1863 feet	Date drilled:	1/05/55
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, silt, and clay-----	1.5	1.5
	Sand and gravel; coarse sand; fine gravel; silty clay; brown-----	8.5	10
	Sand, fine to coarse, clean, well-graded, gray-----	14	24
	Clay (glacial till), silty, sandy, pebbly, gray-----	41	65

145-077-32DCC
(Log from Mann Drilling Co.)

Altitude:	2000 feet	Date drilled:	2/17/71
	Buff sand and gravel-----	32	32
	Gray till-----	50	82
	Gray clay-----	60	142
	Sandstone-----	2	144
	Dark-gray clay-----	91	235
	Sand, lignite, and clay-----	28	263
	Dark-gray clay-----	187	450
	Silty sand-----	20	470
	Dark clay, brown-----	60	530
	Sand-----	30	560

145-077-33BBA
(Log modified from U.S. Bureau of Reclamation)

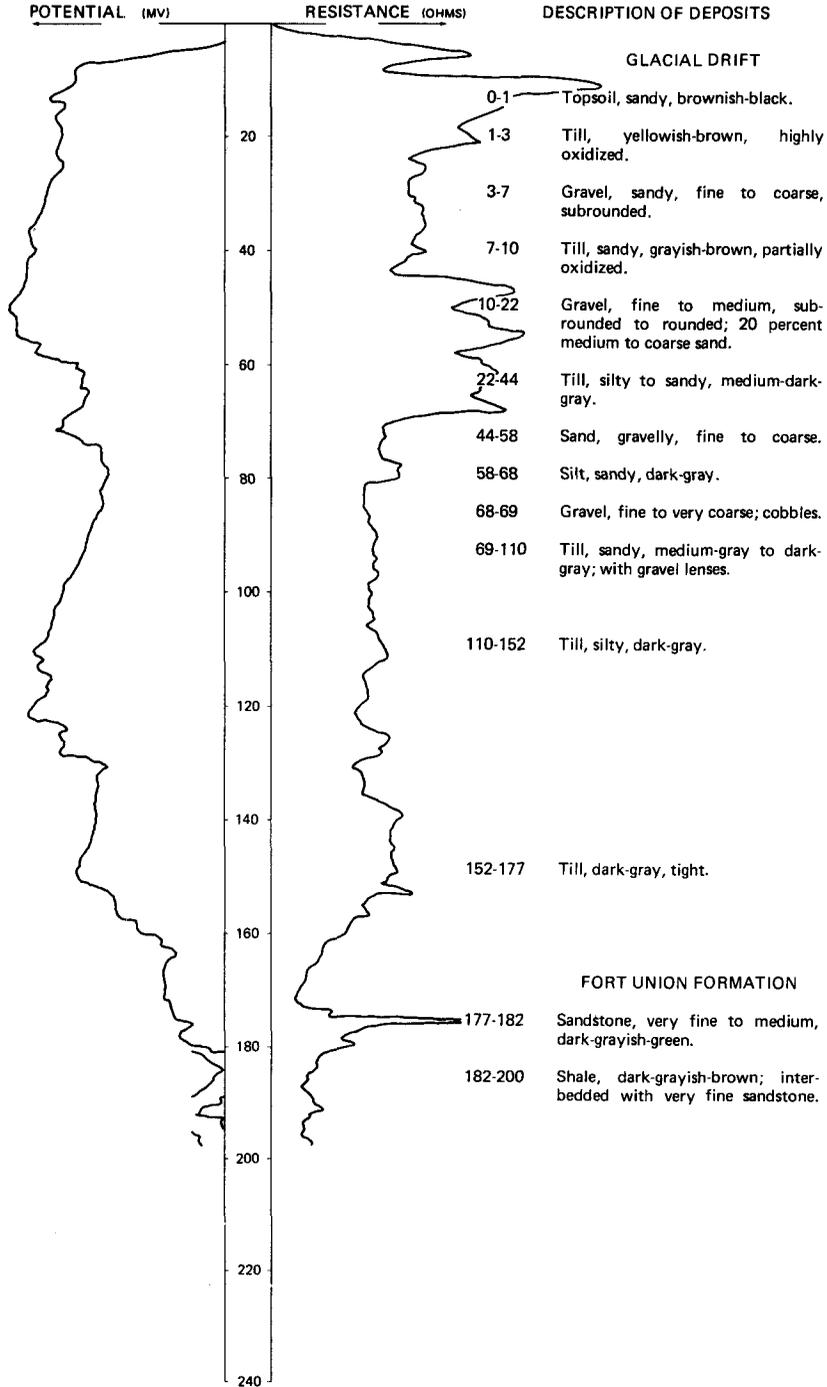
Altitude:	1867 feet	Date drilled:	1/03/55
	Topsoil, silt, and clay-----	1.5	1.5
	Sand and gravel; fine sand and silt; fine gravel; silty trace of clay; brown-----	15.5	17
	Silt and sand; very fine sand and silt; laminated; gray-----	5	22
	Sand and gravel; medium to coarse sand; 30 percent fine gravel; silty; gray-----	22	44
	Clay (glacial till), silty, sandy, pebbly, gray-----	21	65

LOCATION: 145-077-34AAD

DATE DRILLED: 8/31/78

ALTITUDE: 1930
(FT. NGVD)

DEPTH: 200
(FT)



145-077-35888
NDSWC 5825

Altitude: 1923 feet

Date drilled: 9/18/70

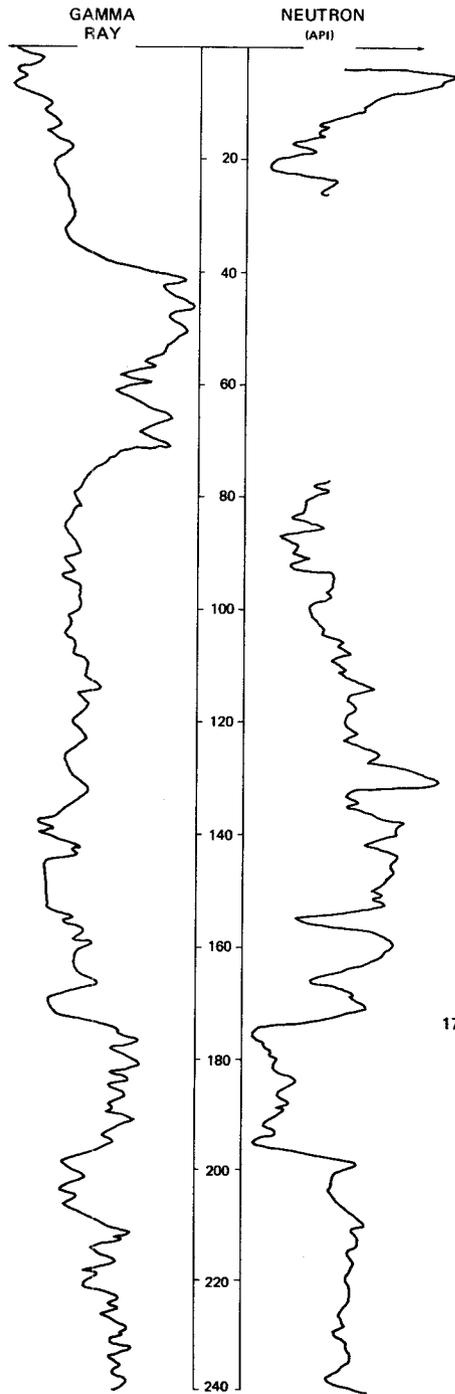
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
Glacial drift:			
	Topsoil, sandy, pebbly, gravelly, brown-----	1	1
	Sand, gravelly, fine to very coarse, angular to subrounded, moderately well sorted; mostly oxidized carbonates and quartz; taking water-----	3	4
	Clay, sandy, silty, pebbly, moderate-yellowish-brown, cohesive, slightly plastic, oxidized (till)-----	2	6
	Gravel, sandy, fine to coarse, angular to rounded, poorly sorted, oxidized; cobbles; mostly carbonates and granitics-----	5	11
	Clay, silty, moderately sandy, yellowish-brown, cohesive, slightly plastic, oxidized (till)-----	2	13
	Clay, silty, slightly sandy, pebbly, olive-gray, cohesive, moderately plastic, calcareous; a few cobbles and boulders (till)-----	25	38
	Clay, very silty, very cohesive, very plastic, highly calcareous; medium dark gray with light-olive-gray laminations (fluvial)-----	12	50
	Clay, silty, slightly sandy, pebbly, olive-gray, moderately cohesive, slightly plastic, calcareous; a few cobbles (till)-----	18	68
	Gravel, slightly sandy, fine to coarse, angular to rounded, poorly sorted; mostly carbonates and granitics; some shale-----	7	75
	Clay, silty, slightly sandy, pebbly, olive-gray, cohesive, moderately plastic, calcareous; a few cobbles (till)-----	75	150
Fort Union Formation:			
	Shale, moderately clayey, sandy, medium-dark-gray, indurated, noncalcareous; bedded; numerous quartz and mica grains-----	14	164
	Sandstone, fine, medium-bluish-gray, very indurated, glauconitic; well cemented with calcite-----	2	166
	Shale, moderately clayey, sandy, brownish-gray, moderately indurated, noncalcareous; with medium-dark-gray bedding-----	14	180

LOCATION: 145-078-05888

DATE DRILLED: 7/11/78

ALTITUDE: 1910
(FT, NGVD)

DEPTH: 755
(FT)



DESCRIPTION OF DEPOSITS

GLACIAL DRIFT

- 0-10 Sand, very fine to coarse, predominantly medium, rounded, well-sorted, oxidized; mostly quartz; some carbonates.
- 10-173 Clay, sandy, silty, pebbly, medium-dark-gray to olive-gray, tight, cohesive, very slightly plastic (till).

FORT UNION FORMATION

- 173-240 Clay, silty, medium-gray to dark-gray, smooth, tight, cohesive, brittle; turned greenish gray about 205 feet.

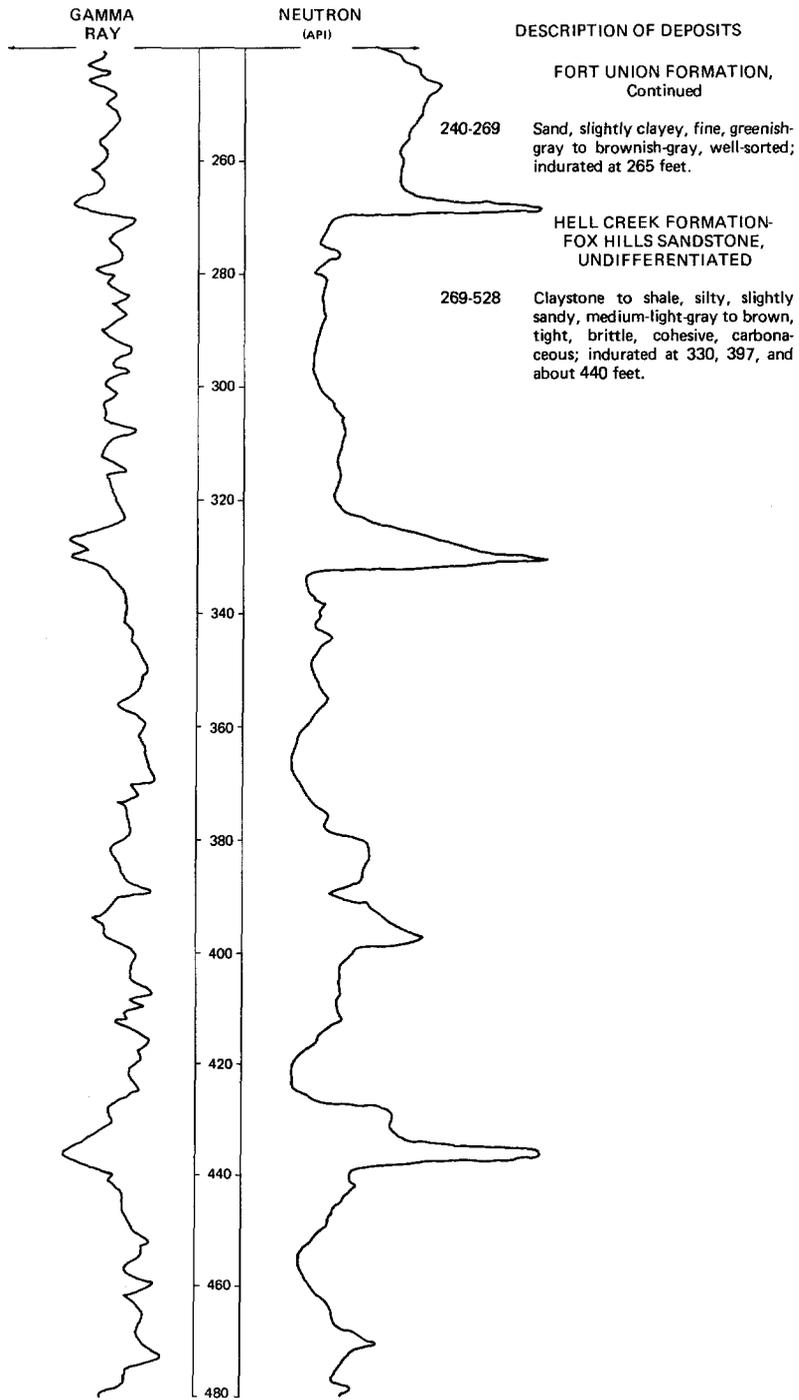
NDSWC 5342, Continued

LOCATION: 145-078-05BBB

DATE DRILLED: 7/11/78

ALTITUDE: 1910
(FT, NGVD)

DEPTH: 755
(FT)

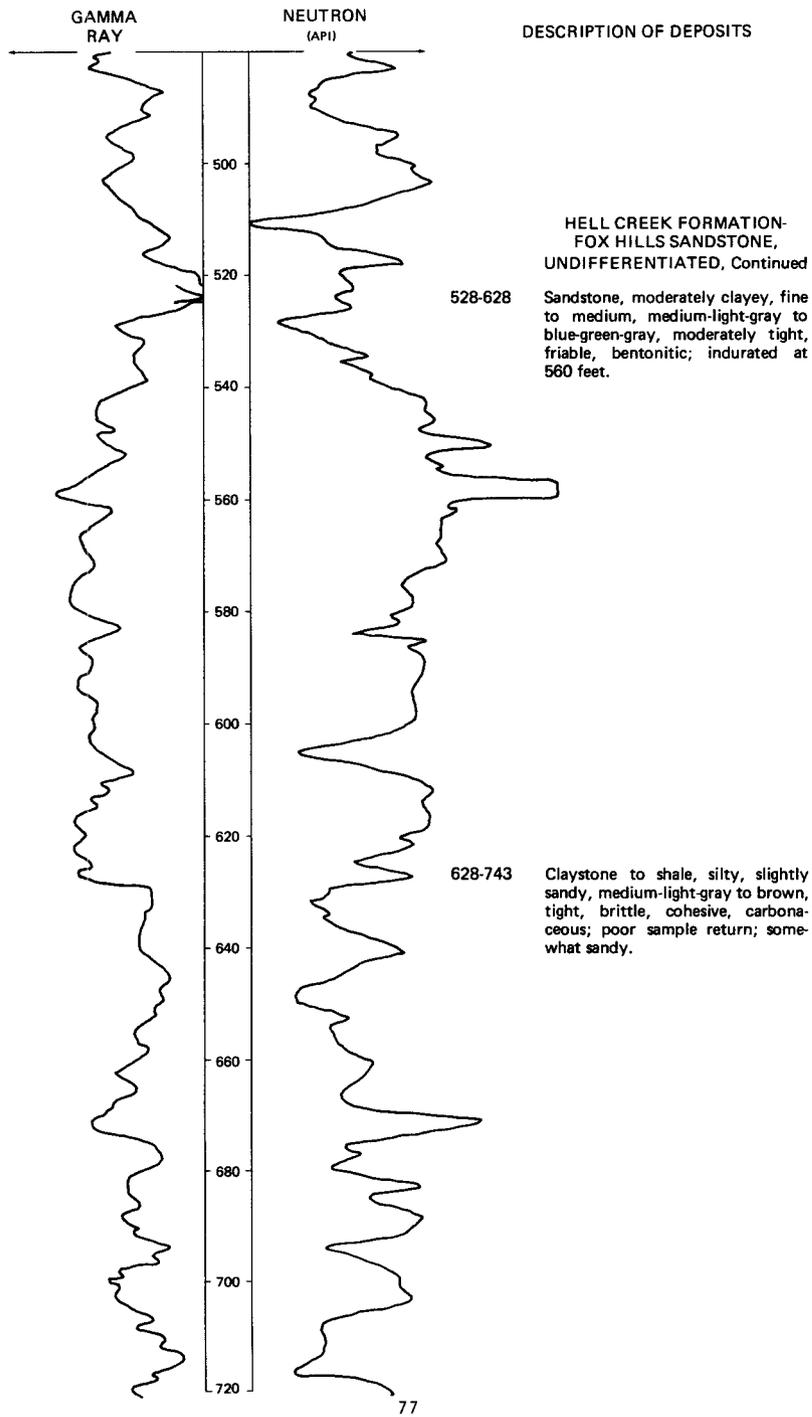


LOCATION: 145-078-05BBB

DATE DRILLED: 7/11/78

ALTITUDE: 1910
(FT, NGVD)

DEPTH: 755
(FT)

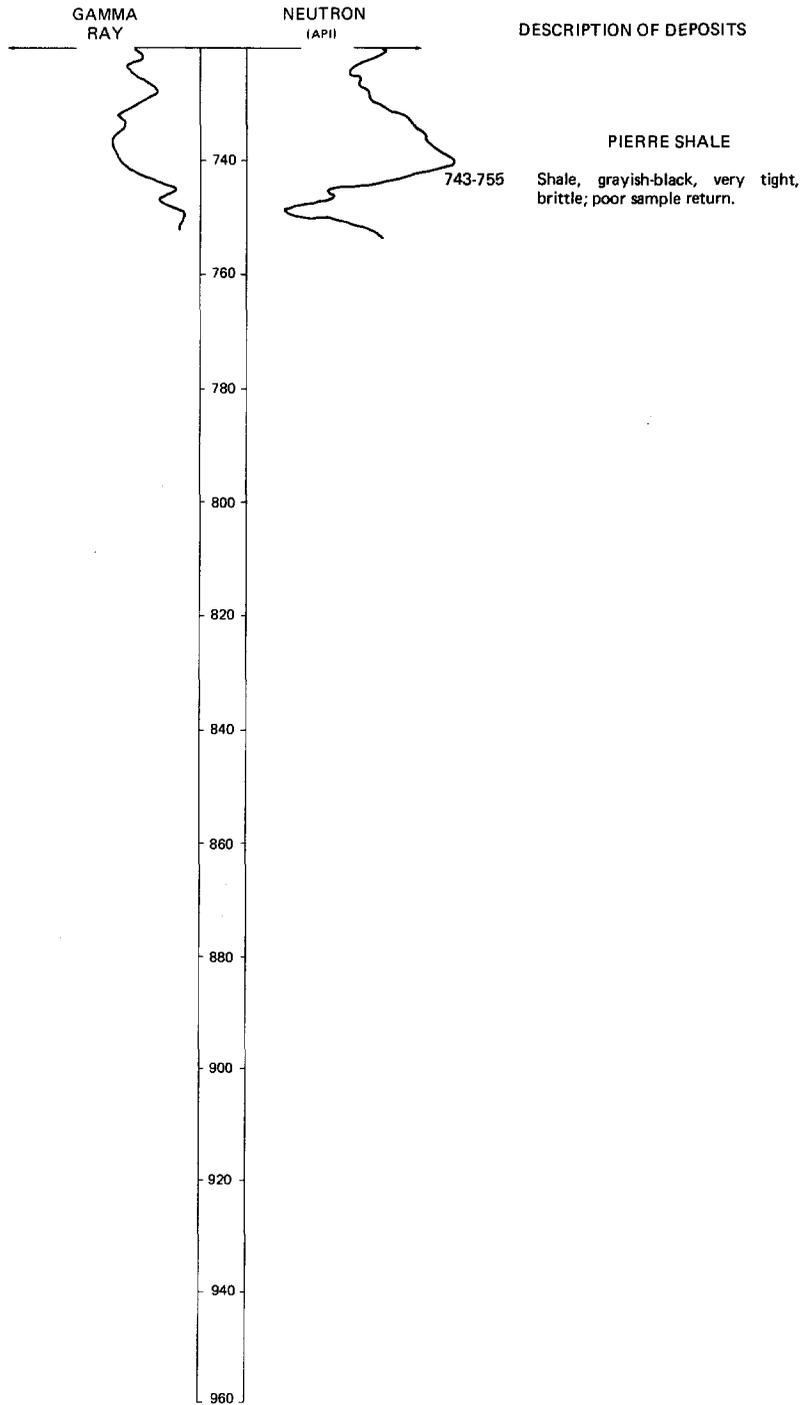


LOCATION: 145-078-05888

DATE DRILLED: 7/11/78

ALTITUDE: 1910
(FT, NGVD)

DEPTH: 755
(FT)

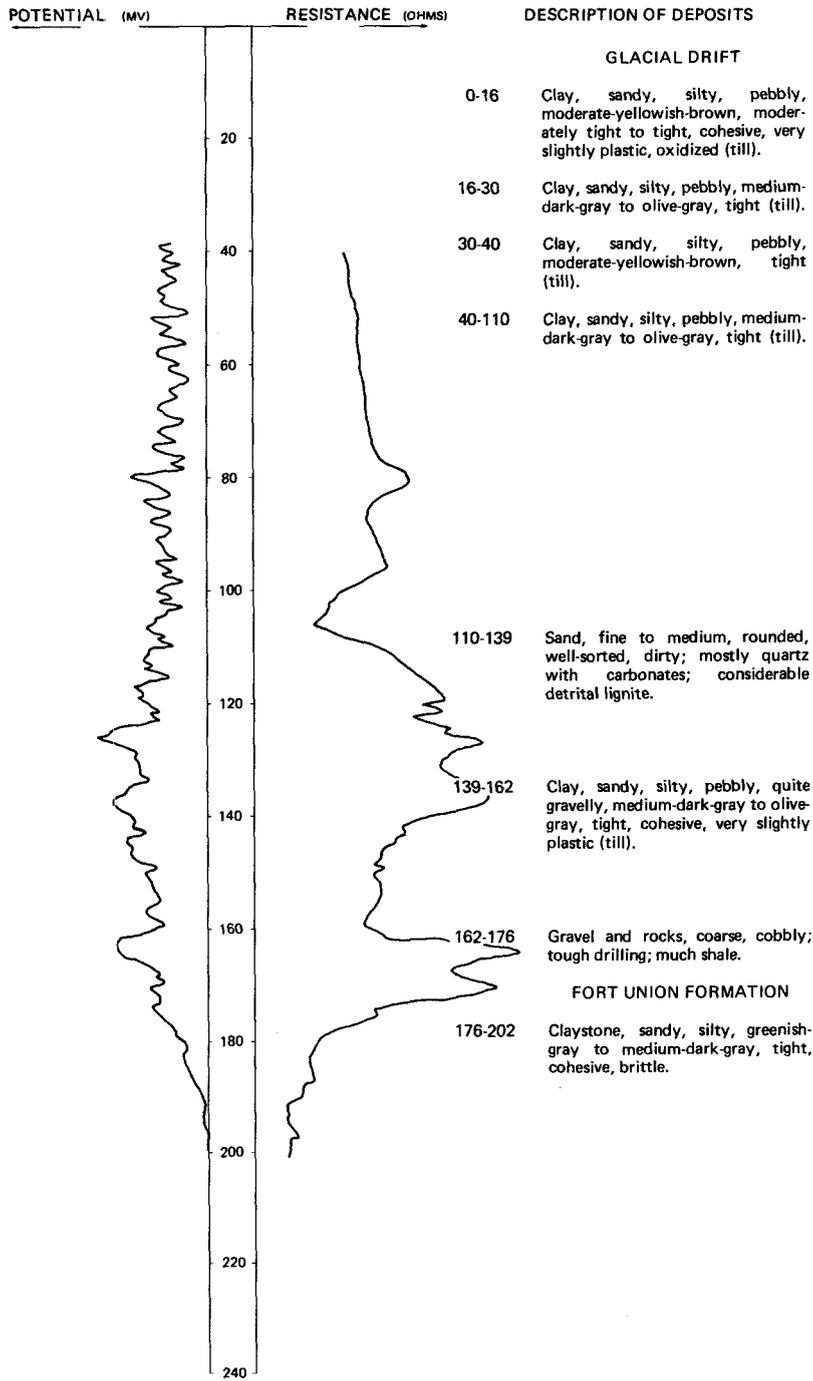


LOCATION: 145-078-14BCB

DATE DRILLED: 10/24/77

ALTITUDE: 1850
(FT. NGVD)

DEPTH: 202
(FT)

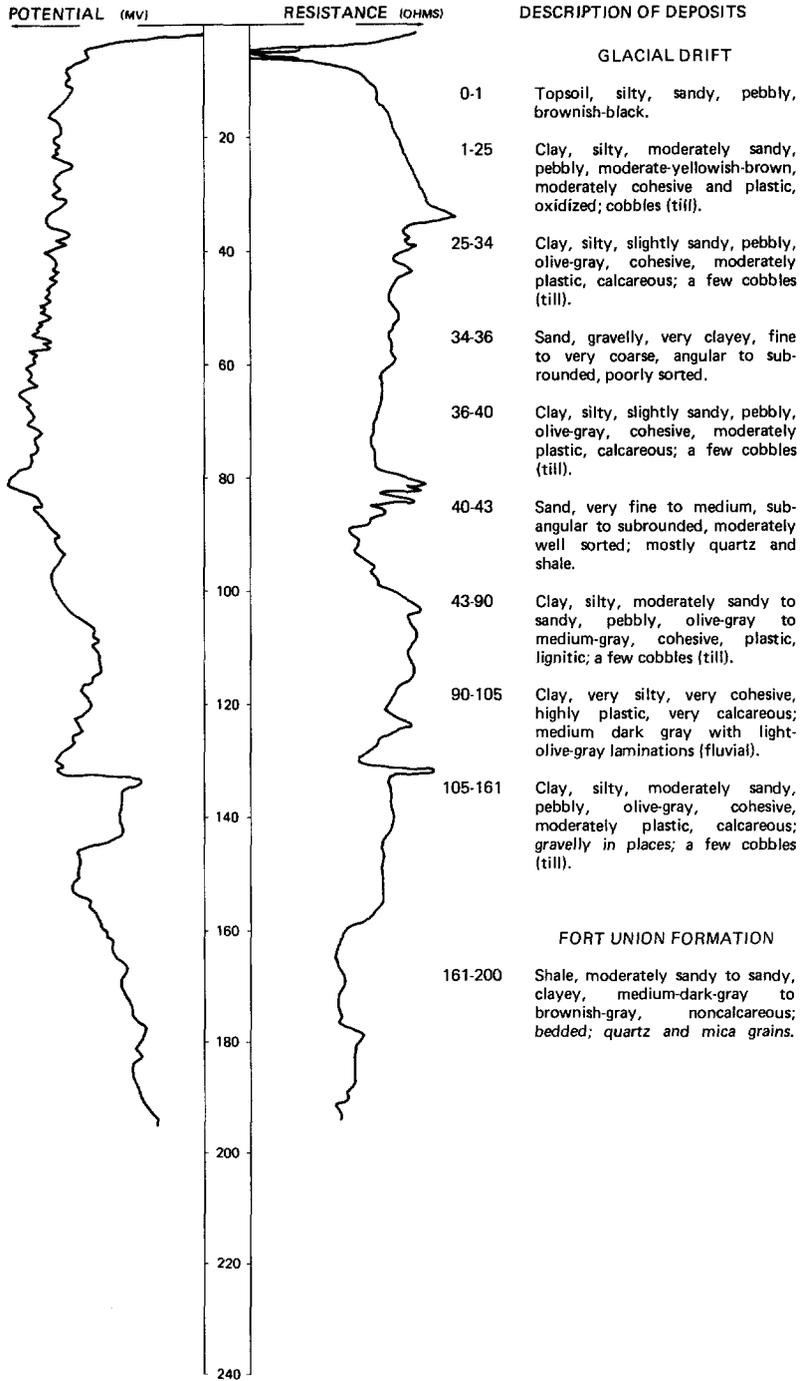


LOCATION: 145-078-26DAA

DATE DRILLED: 9/17/70

ALTITUDE: 1910
(FT. NGVD)

DEPTH: 200
(FT)



145-078-28BCA
(Log modified from U.S. Bureau of Reclamation)

Altitude: 1863 feet

Date drilled: 6/01/55

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	0.8	0.8
	Sand, coarse, cobbly, and gravelly-----	20.2	21
	Clay (glacial till), gray-----	5	26
	Clay (glacial till), silty, sandy, gray-----	8	34
	Clay (glacial till); occasional boulders-----	23	57

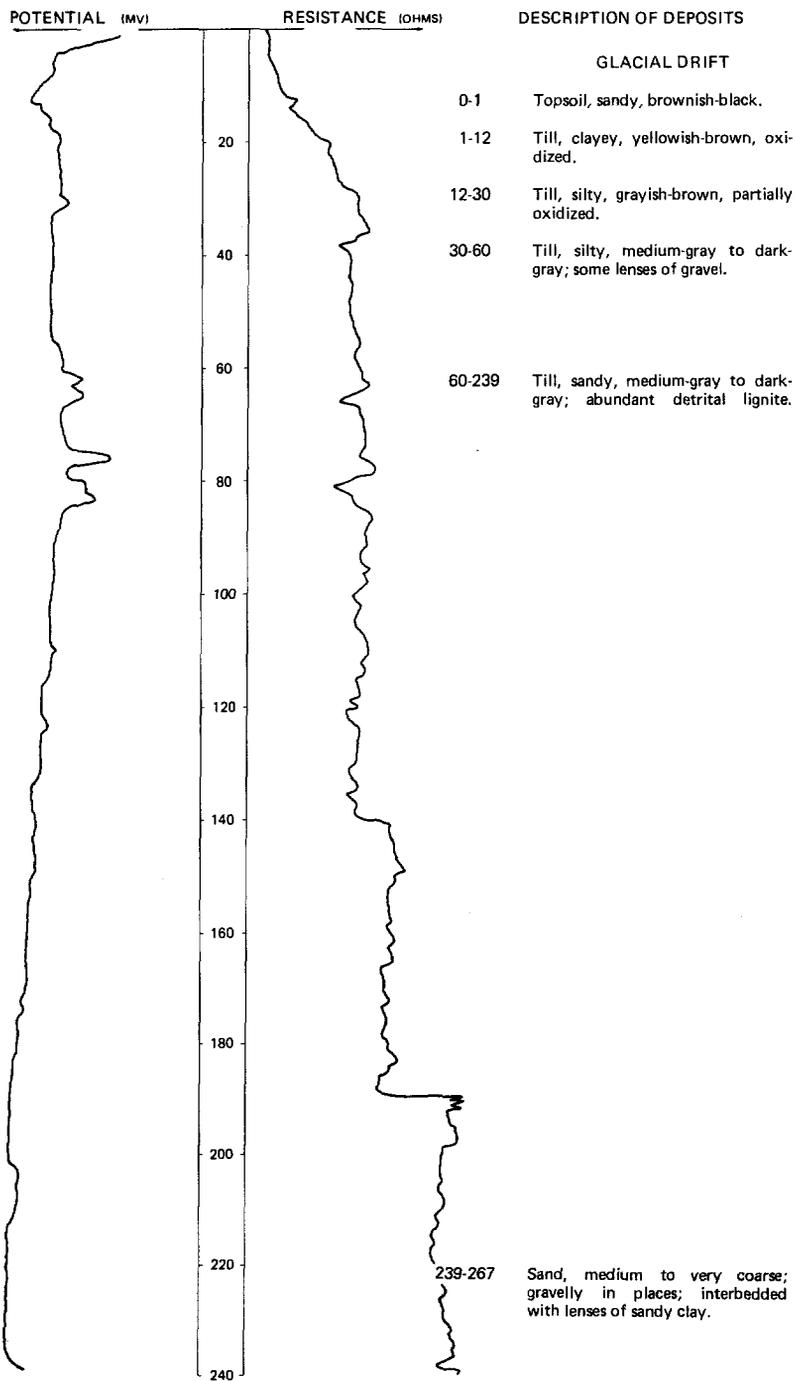
NDSWC 10244

LOCATION: 146-074-10CCC

DATE DRILLED: 8/30/78

ALTITUDE: 1955
(FT, NGVD)

DEPTH: 380
(FT)

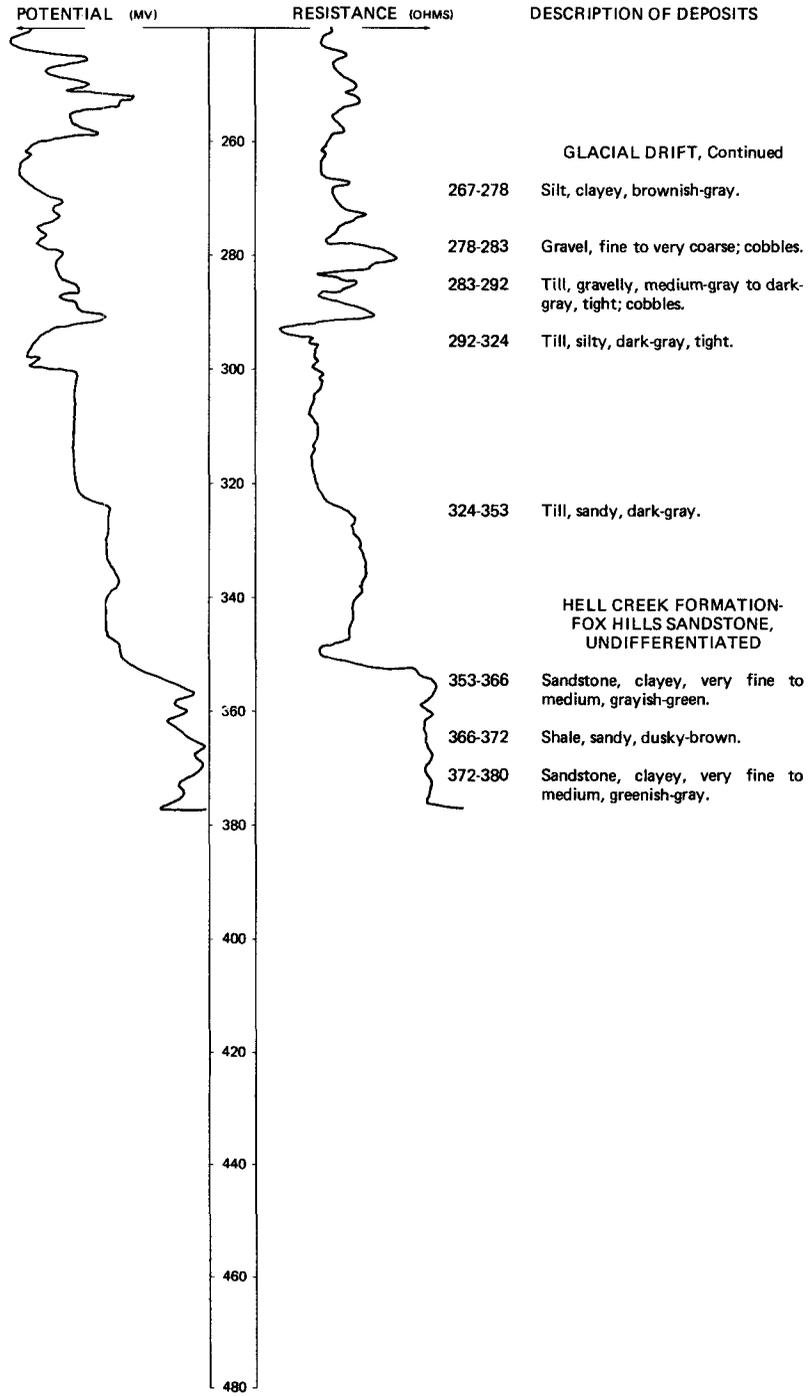


LOCATION: 146-074-10CCC

DATE DRILLED: 8/30/78

ALTITUDE: 1955
(FT, NGVD)

DEPTH: 380
(FT)



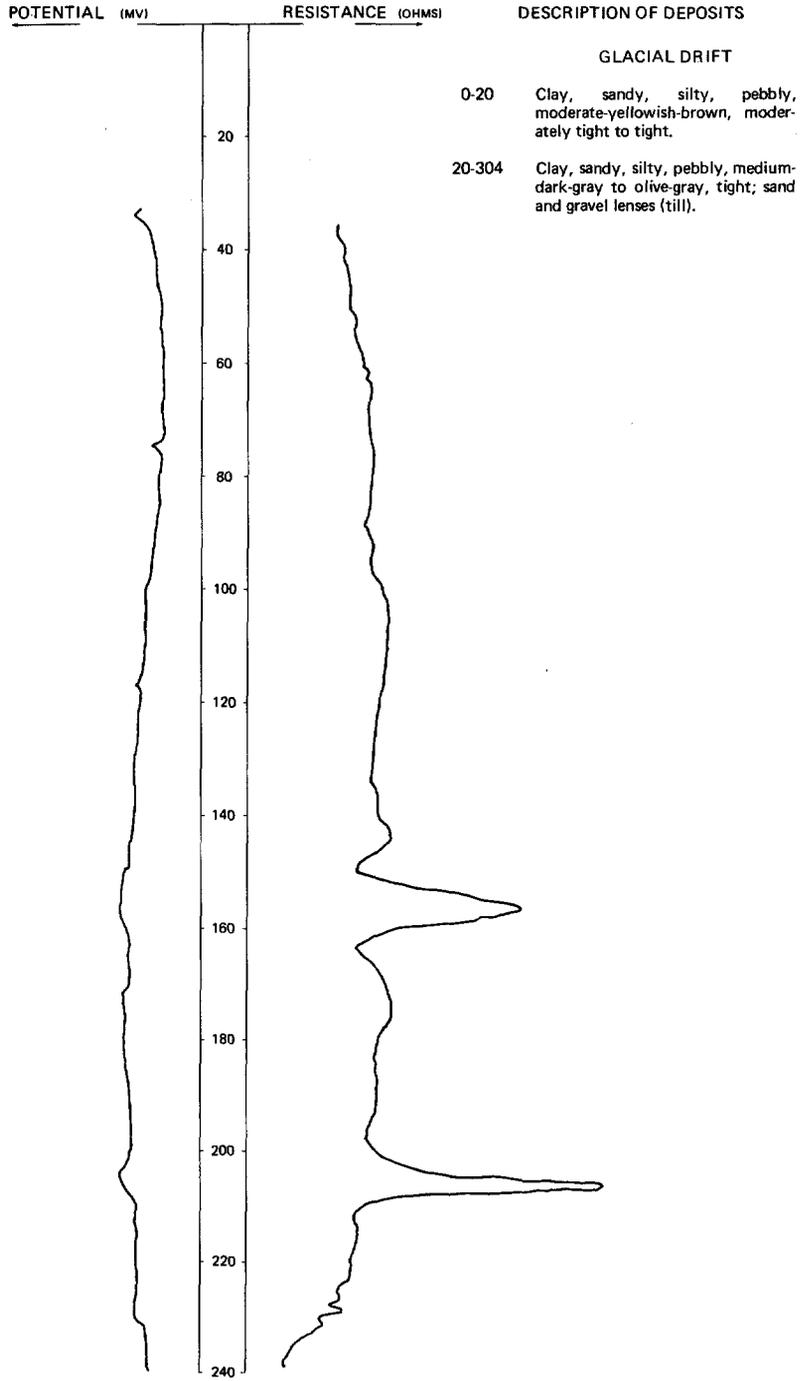
NDSWC 5250

LOCATION: 146-074-21CCC

DATE DRILLED: 10/11/77

ALTITUDE: 1980
(FT, NGVD)

DEPTH: 642
(FT)

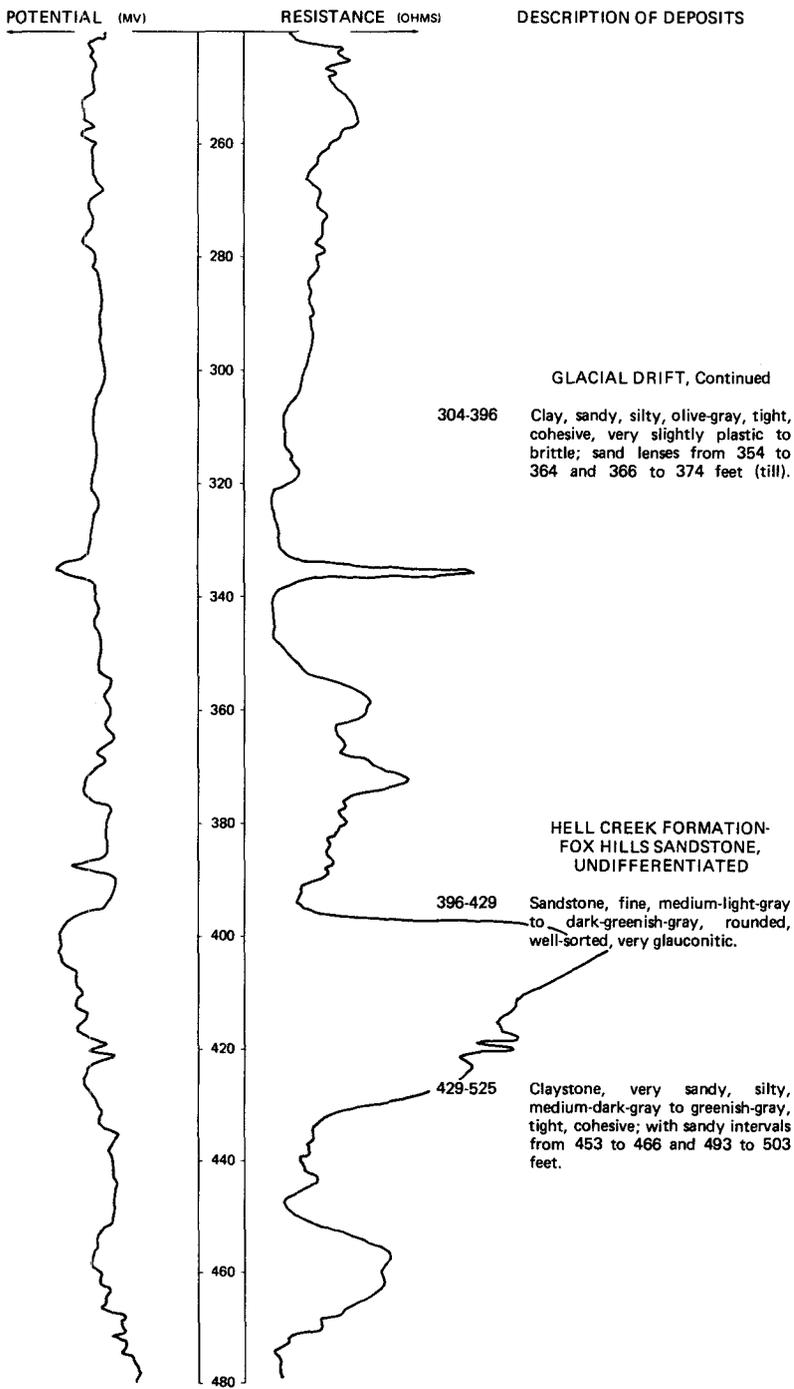


LOCATION: 146-074-21CCC

DATE DRILLED: 10/11/77

ALTITUDE: 1980
(FT, NGVD)

DEPTH: 642
(FT)

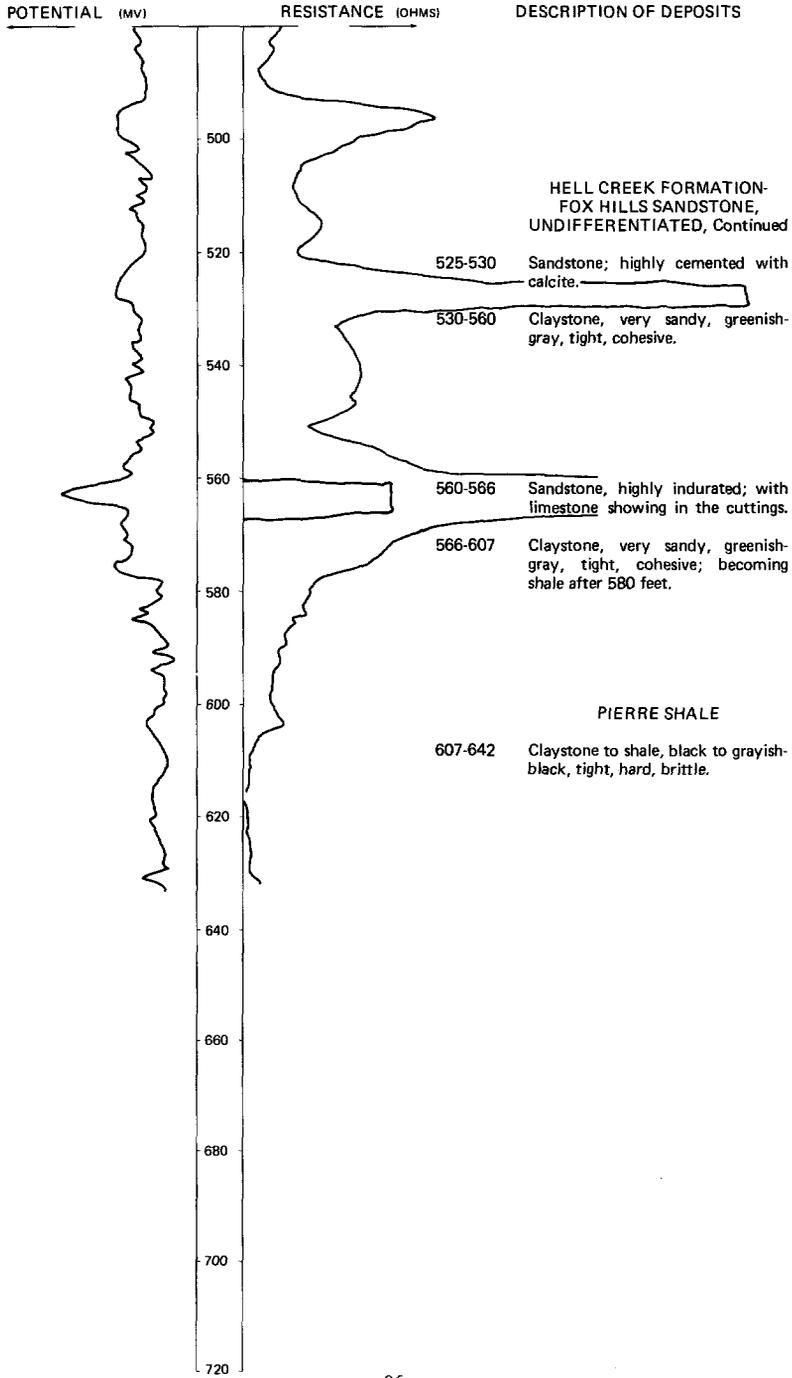


LOCATION: 146-074-21CCC

DATE DRILLED: 10/11/77

ALTITUDE: 1980
(FT. NGVD)

DEPTH: 642
(FT)



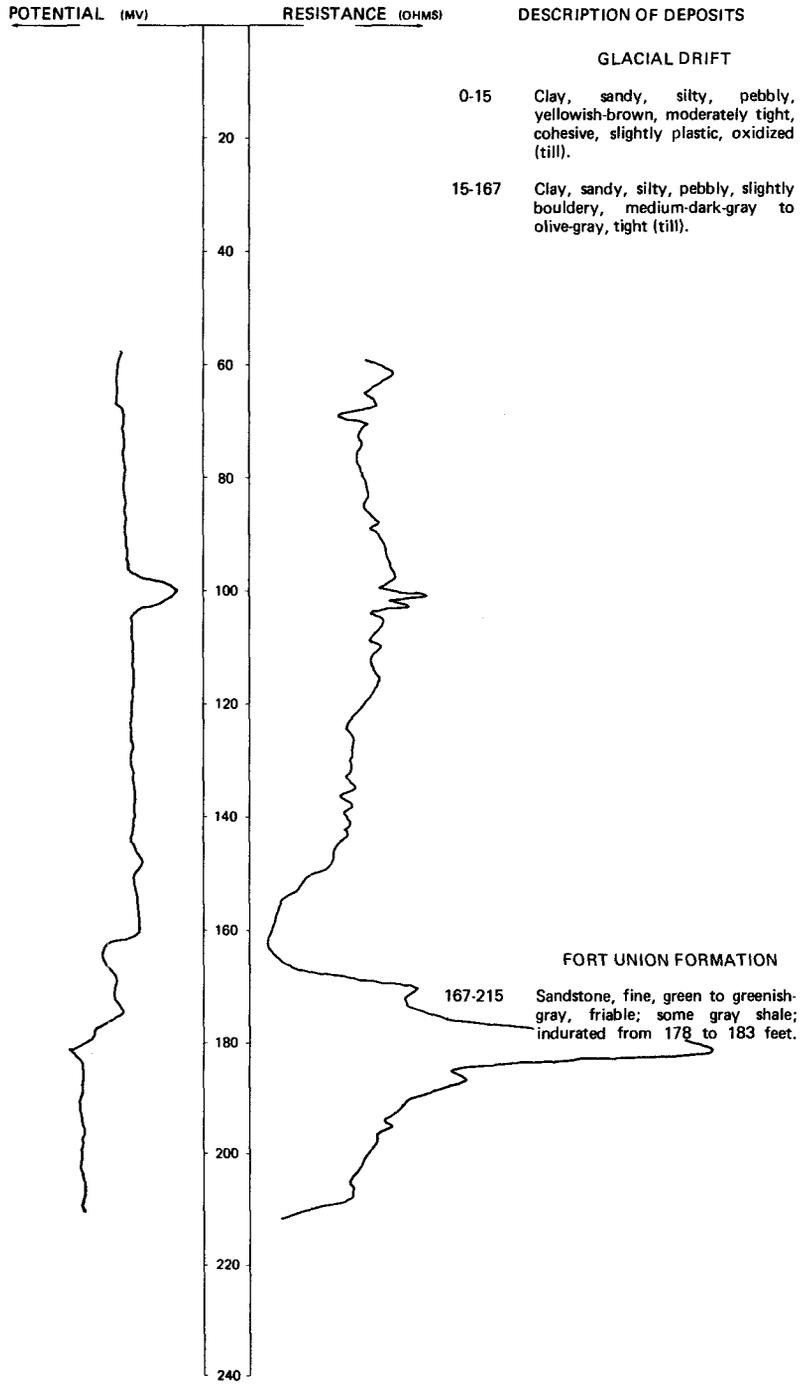
NDSWC 5351

LOCATION: 146-074-32BBA

DATE DRILLED: 7/27/78

ALTITUDE: 2025
(FT, NGVD)

DEPTH: 215
(FT)

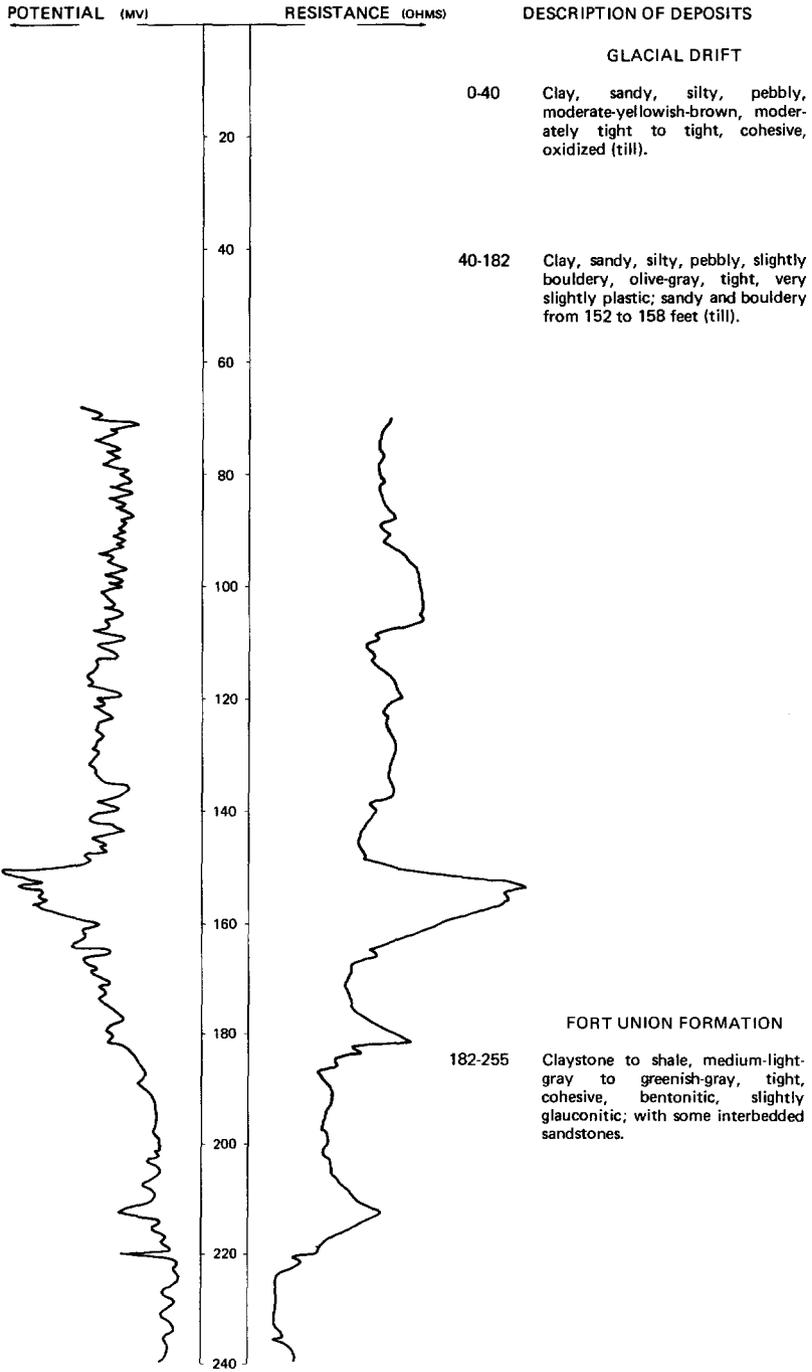


LOCATION: 146-075-04BBB

DATE DRILLED: 7/25/78

ALTITUDE: 2030
(FT, NGVD)

DEPTH: 255
(FT)



NDSWC 5349, Continued

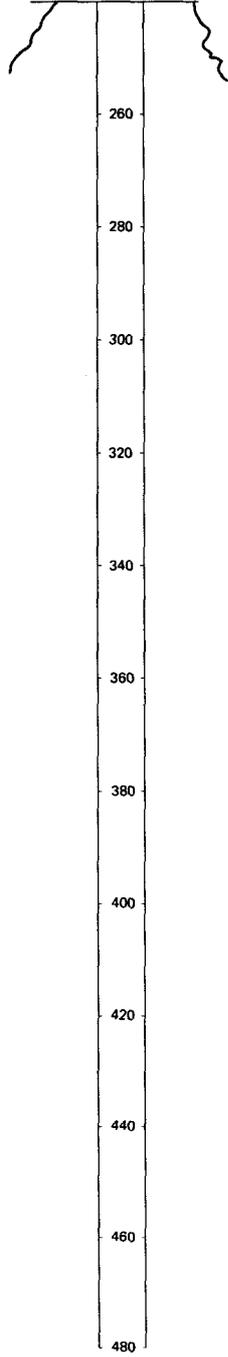
LOCATION: 146-075-04BBB

DATE DRILLED: 7/25/78

ALTITUDE: 2030
(FT, NGVD)

DEPTH: 255
(FT)

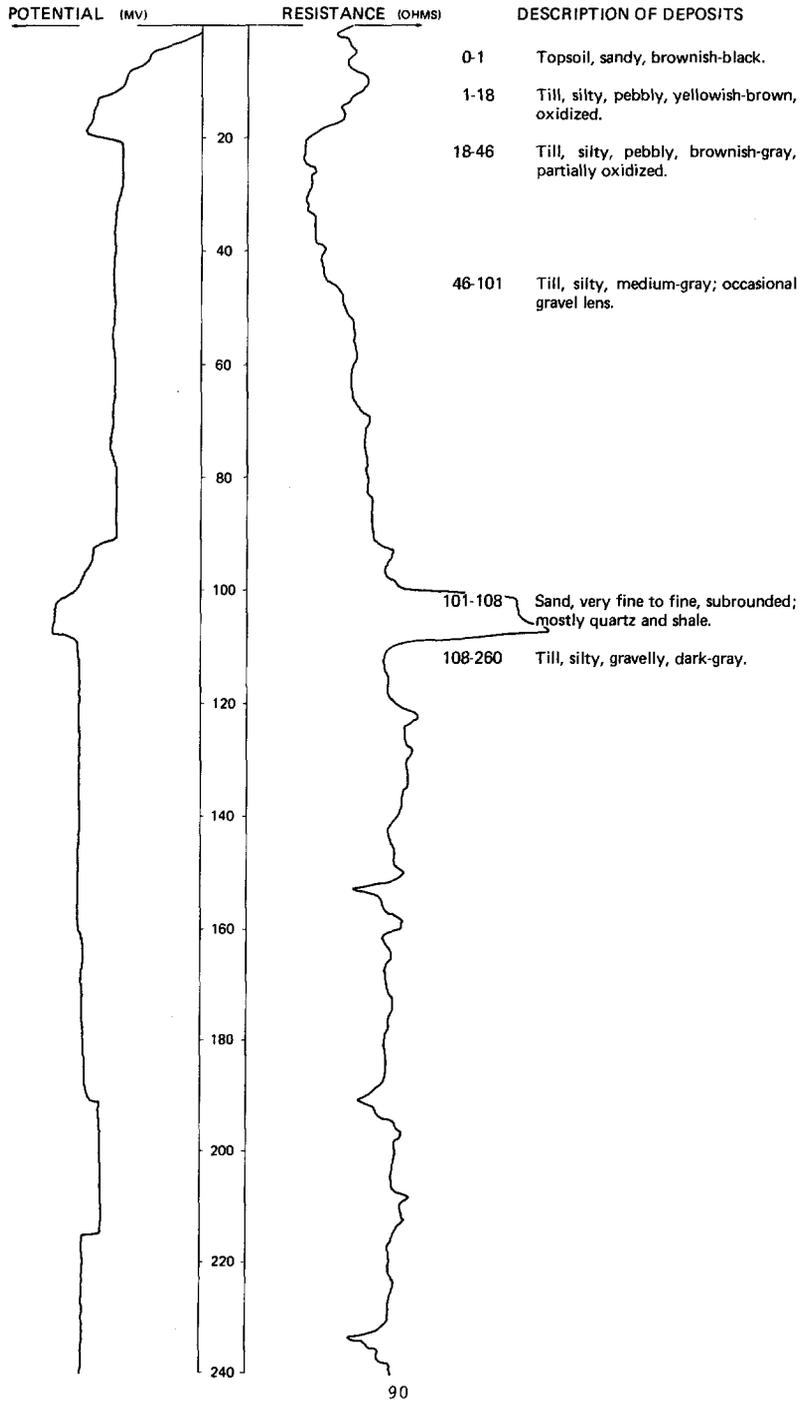
POTENTIAL (MV) RESISTANCE (OHMS) DESCRIPTION OF DEPOSITS



NDSWC 11015

LOCATION: 146-075-08ADD
ALTITUDE: 2040
(FT, NGVD)

DATE DRILLED: 8/08/79
DEPTH: 470
(FT)



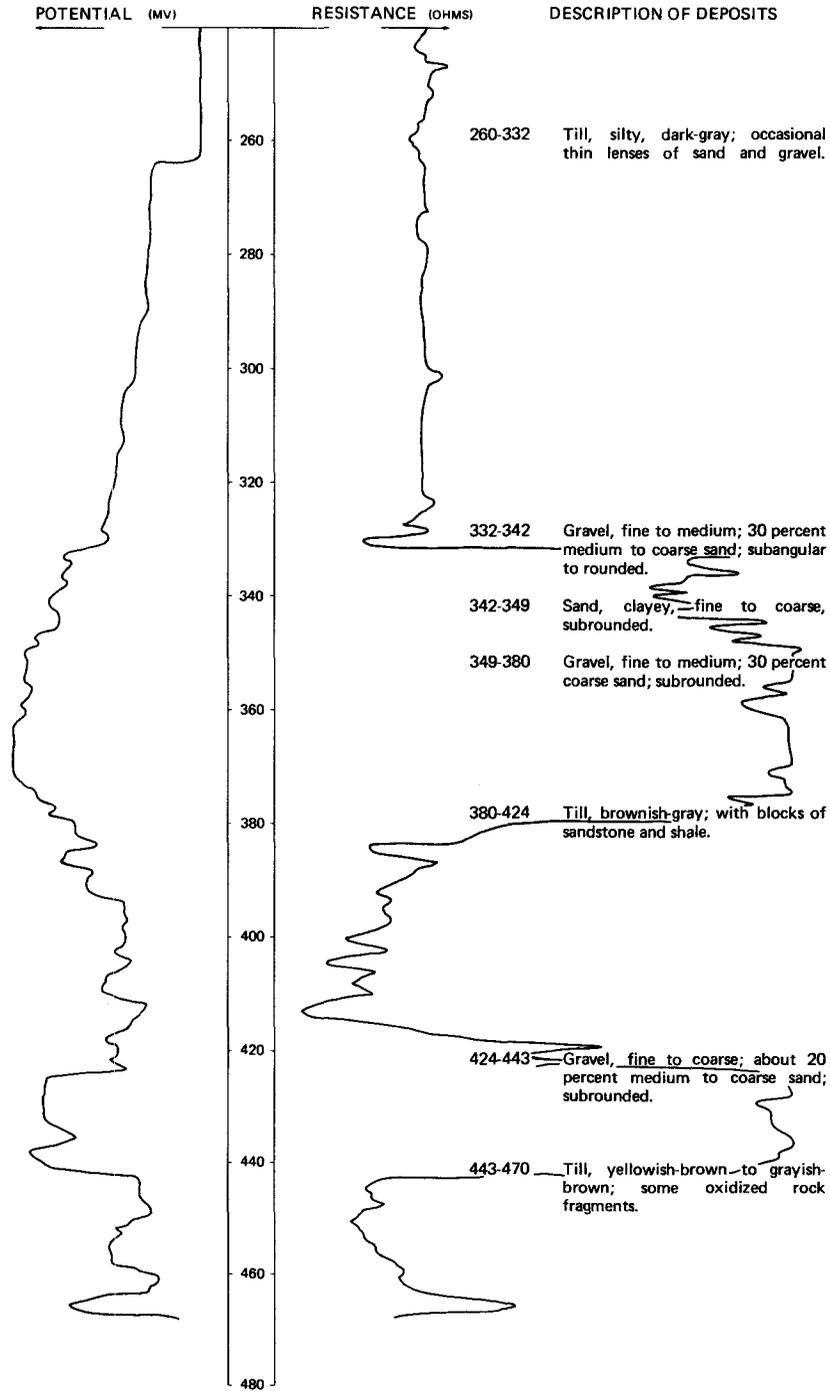
NDSWC 11015, Continued

LOCATION: 146-075-08ADD

DATE DRILLED: 8/08/79

ALTITUDE: 2040
(FT, NGVD)

DEPTH: 470
(FT)

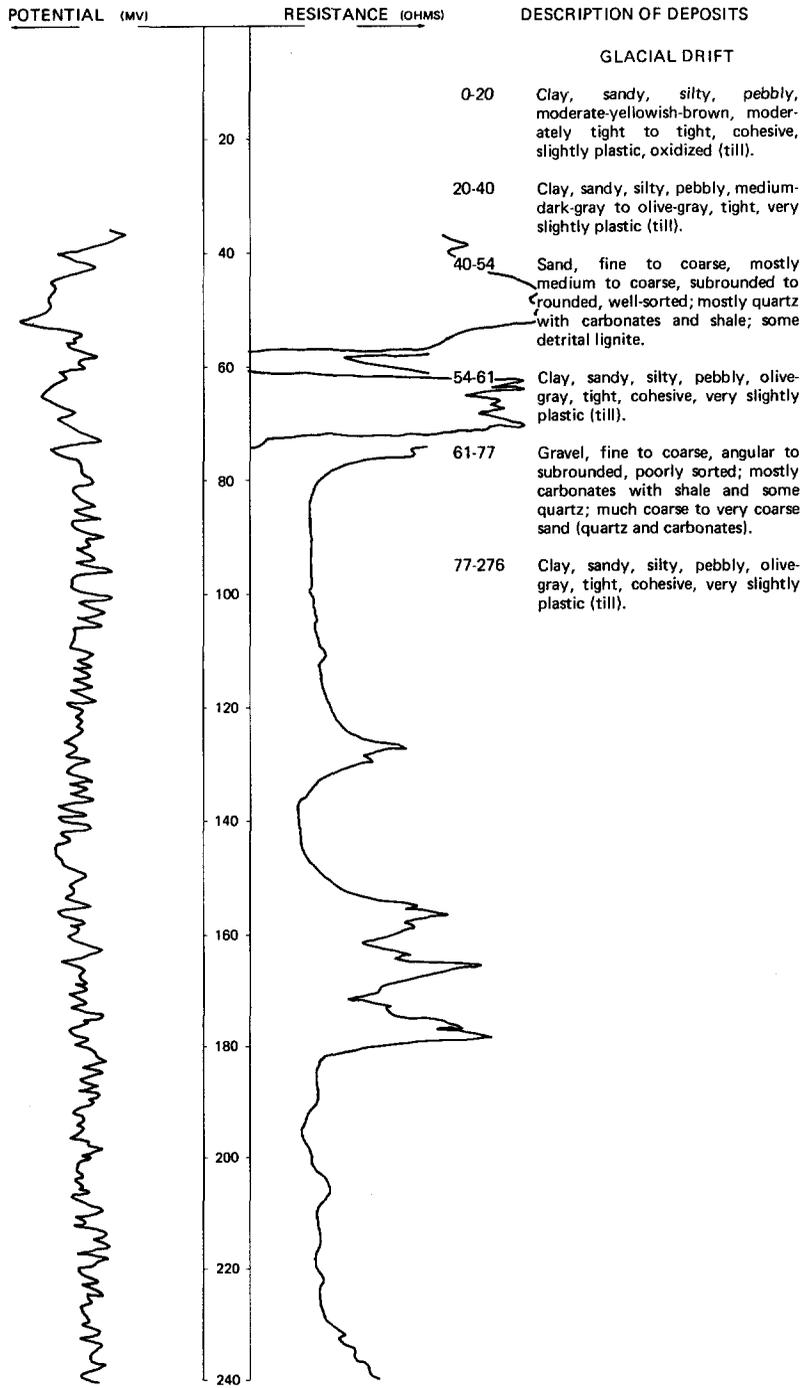


LOCATION: 146-075-19ADA

DATE DRILLED: 10/14/77

ALTITUDE: 2010
(FT, NGVD)

DEPTH: 352
(FT)

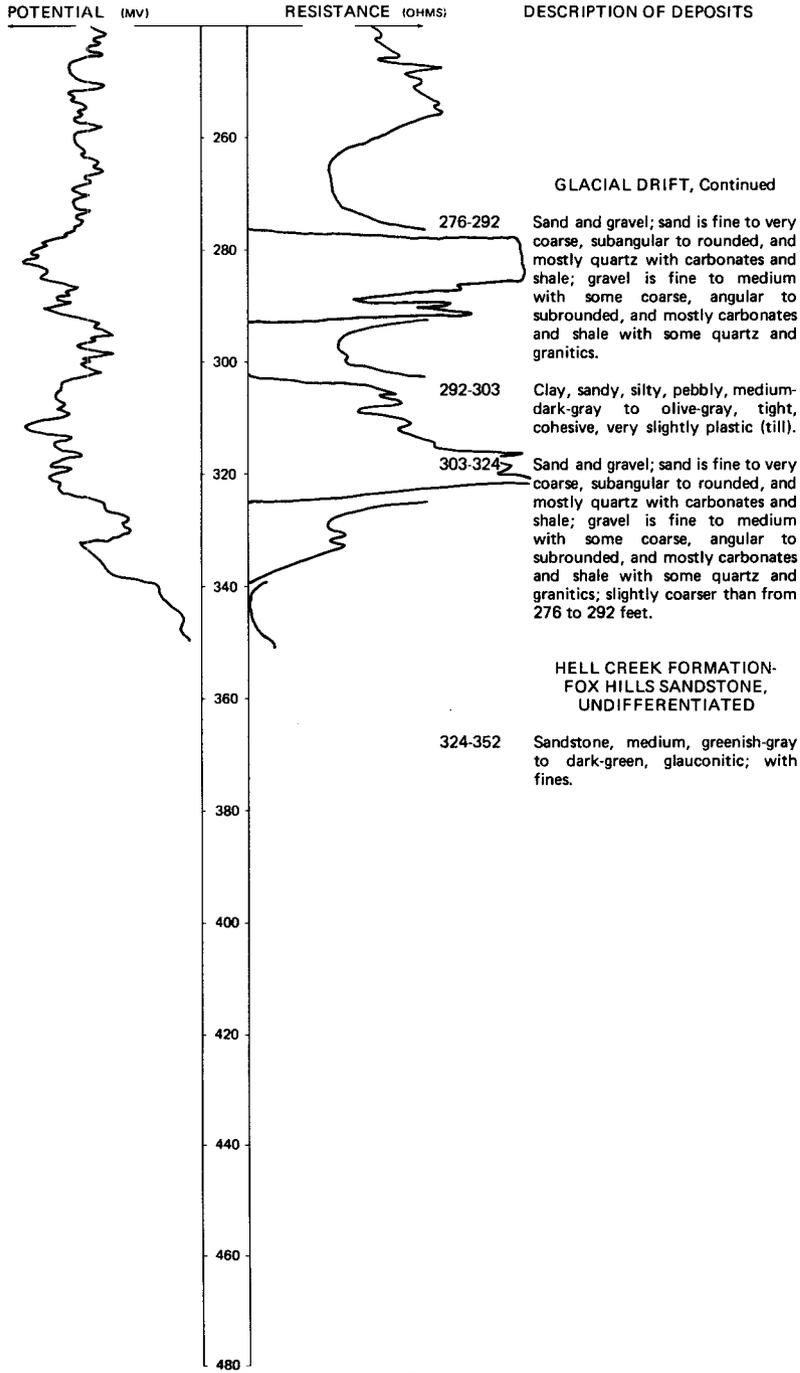


LOCATION: 146-075-19ADA

DATE DRILLED: 10/14/77

ALTITUDE: 2010
(FT, NGVD)

DEPTH: 352
(FT)



146-075-27CAC
(Log from Bower Drilling Co.)

Date drilled: 8/01/75

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1	1
	Yellow sand-----	3	4
	Yellow clay-----	66	70
	Gravel-----	2	72
	Brown clay-----	78	150
	Gray clay and small stones-----	162.5	312.5
	Rocks-----	.5	313
	Gray sand and fine gravel-----	13	326

146-076-01DDD
(Log from Feickert Drilling Co.)

Altitude: 1995 feet

Date drilled: 5/03/73

	Gravel and sand-----	50	50
	Clay-----	45	95
	Sand-----	45	140
	Clay-----	15	155
	Sand and gravel-----	25	180

146-076-03DDC
(Log from Russell Drilling Co.)

Altitude: 1980 feet

Date drilled: 2/28/76

	Brown till-----	23	23
	Blue till-----	268	291
	Gravel-----	3	294
	Gravelly till-----	308	602
	Rocky till-----	28	630
	Fine sand and gravel-----	50	680
	Till; with gravel layers-----	62	742

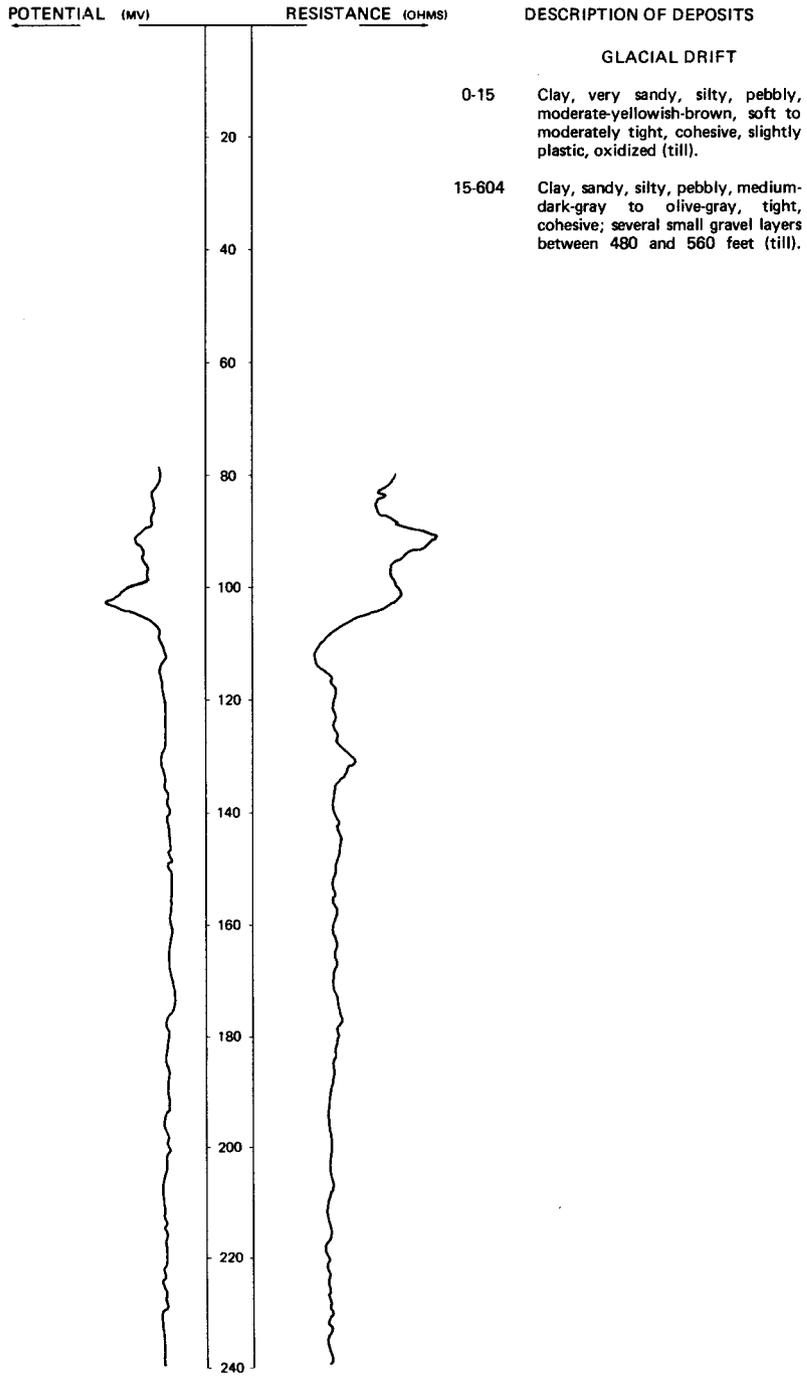
NDSWC 5355

LOCATION: 146-076-03DDD

DATE DRILLED: 7/28/78

ALTITUDE: 1980
(FT, NGVD)

DEPTH: 675
(FT)

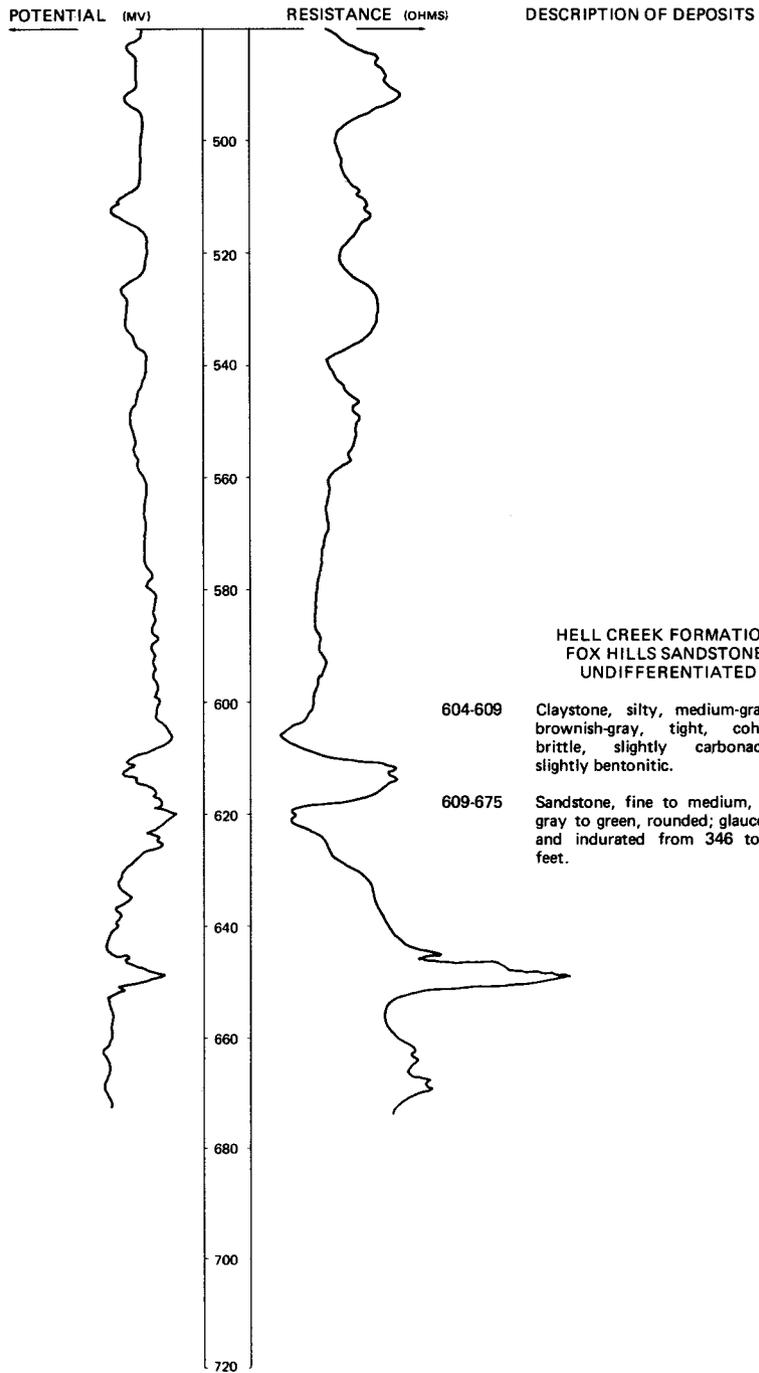


LOCATION: 146-076-03DDD

DATE DRILLED: 7/28/78

ALTITUDE: 1980
(FT, NGVD)

DEPTH: 675
(FT)

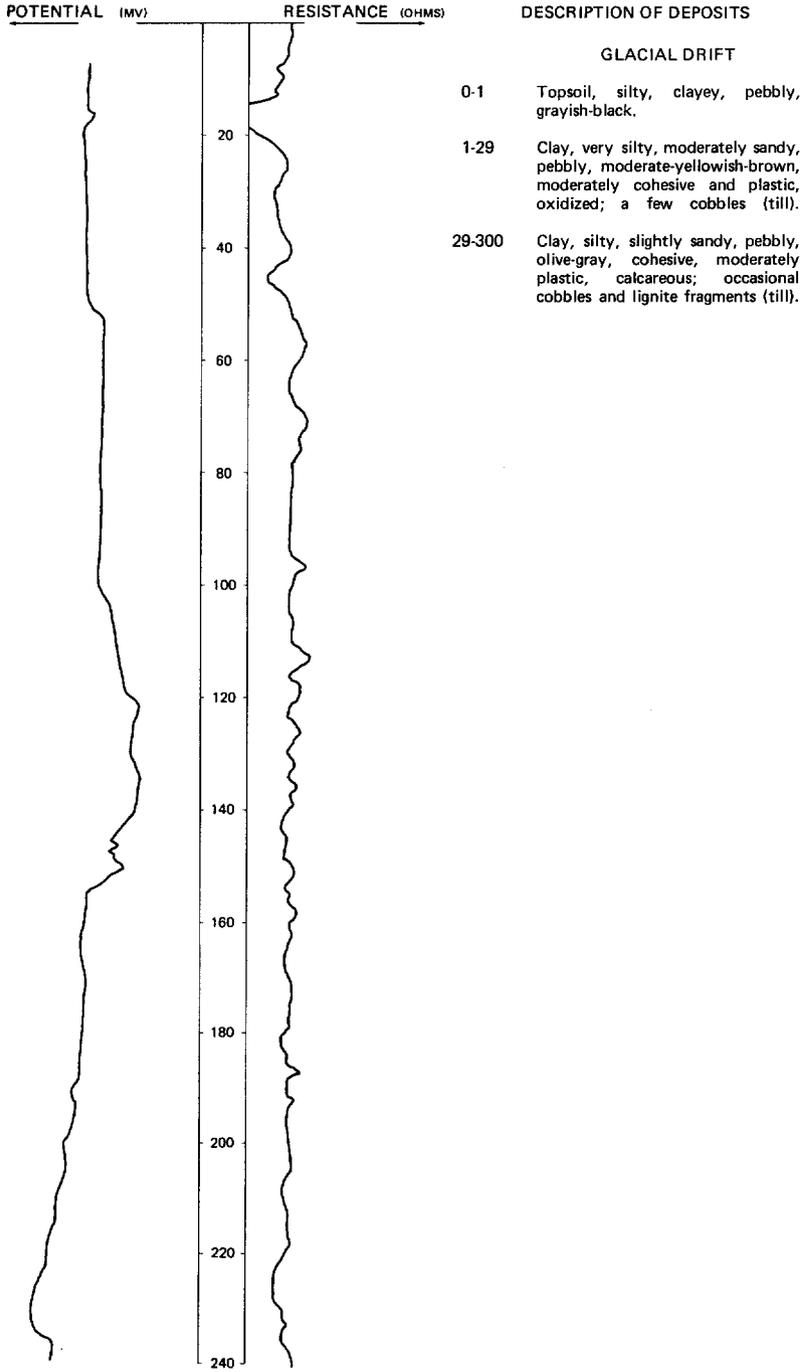


LOCATION: 146-076-19CDD

DATE DRILLED: 9/22/70

ALTITUDE: 1950
(FT, NGVD)

DEPTH: 600
(FT)

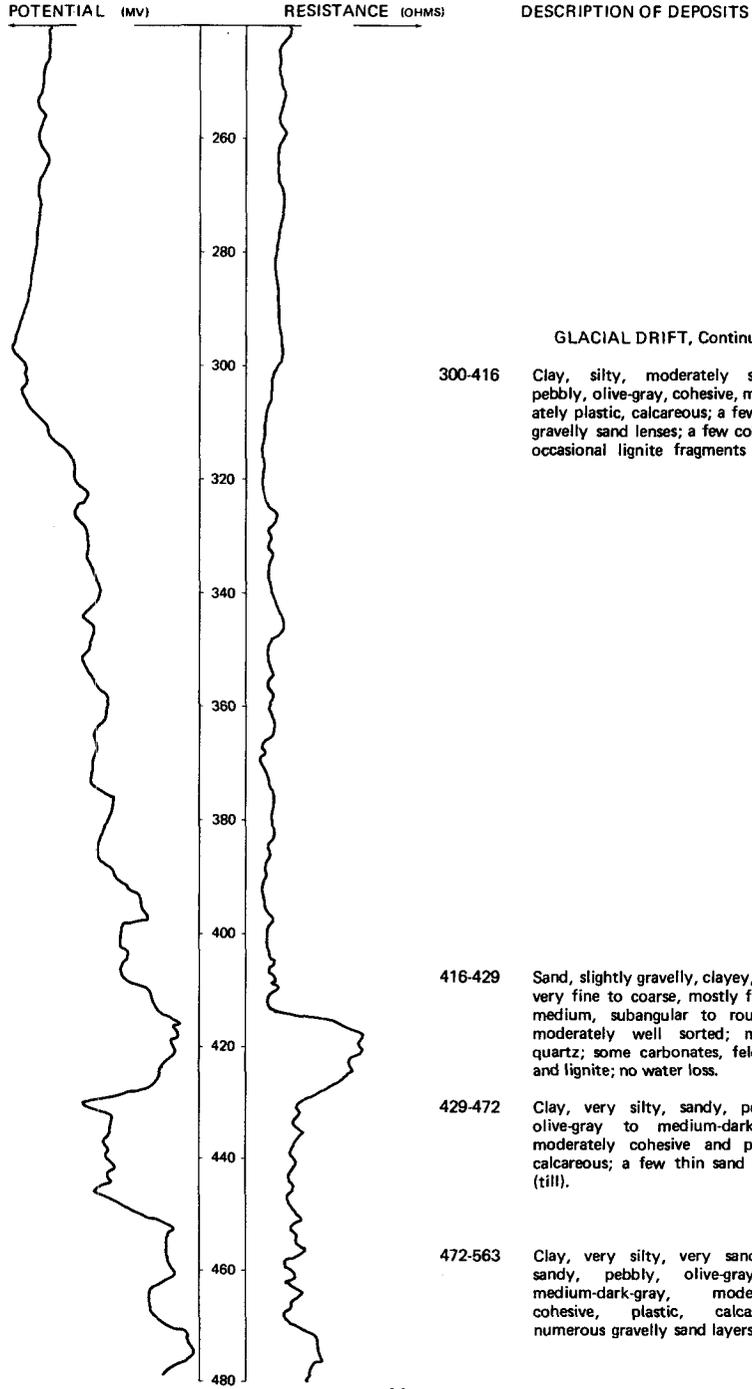


LOCATION: 146-076-19CDD

DATE DRILLED: 9/22/70

ALTITUDE: 1950
(FT, NGVD)

DEPTH: 600
(FT)



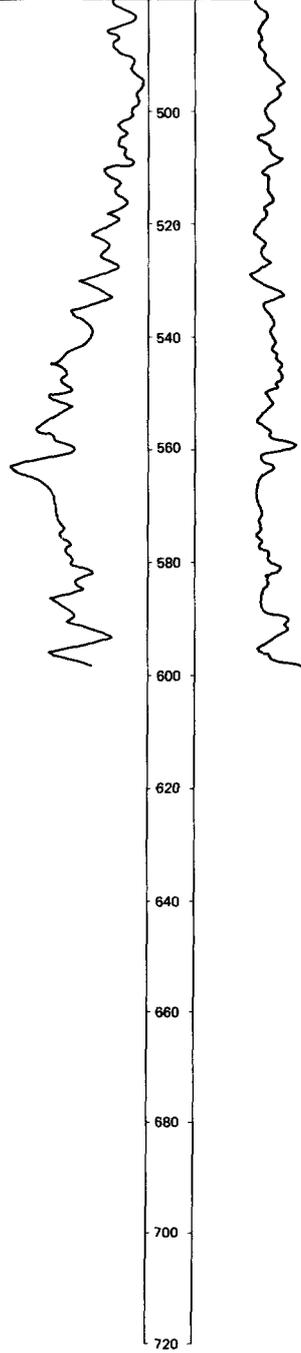
LOCATION: 146-076-19CDD

DATE DRILLED: 9/22/70

ALTITUDE: 1950
(FT. NGVD)

DEPTH: 600
(FT)

POTENTIAL (MV) RESISTANCE (OHMS) DESCRIPTION OF DEPOSITS



HELL CREEK FORMATION-
FOX HILLS SANDSTONE,
UNDIFFERENTIATED

563-600 Sandstone, slightly clayey, very fine to fine, dark-greenish-gray to dark-brownish-gray, subangular, consolidated, loosely cemented, noncalcareous, micaceous; bedded.

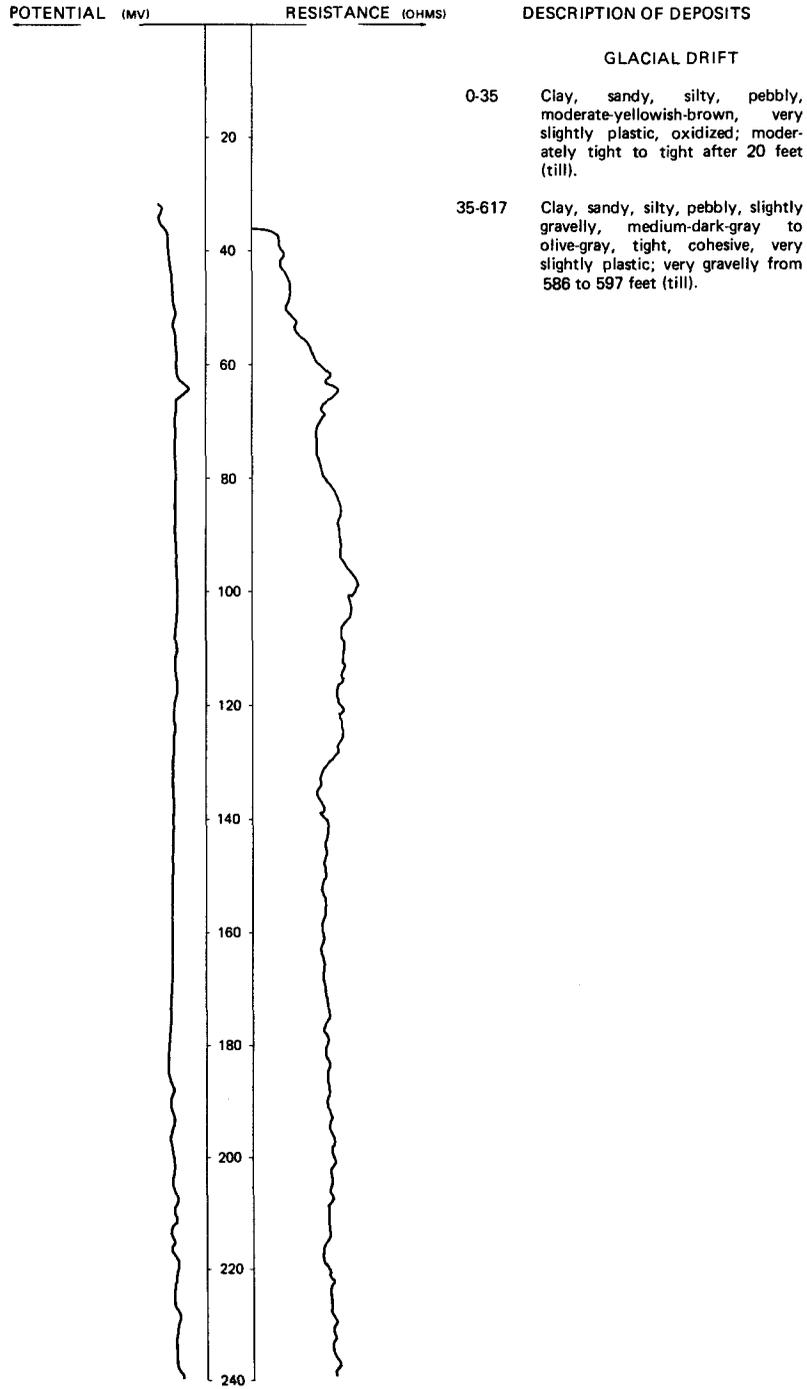
NDSWC 5254

LOCATION: 146-076-27AAA

DATE DRILLED: 10/17/77

ALTITUDE: 1970
(FT, NGVD)

DEPTH: 642
(FT)

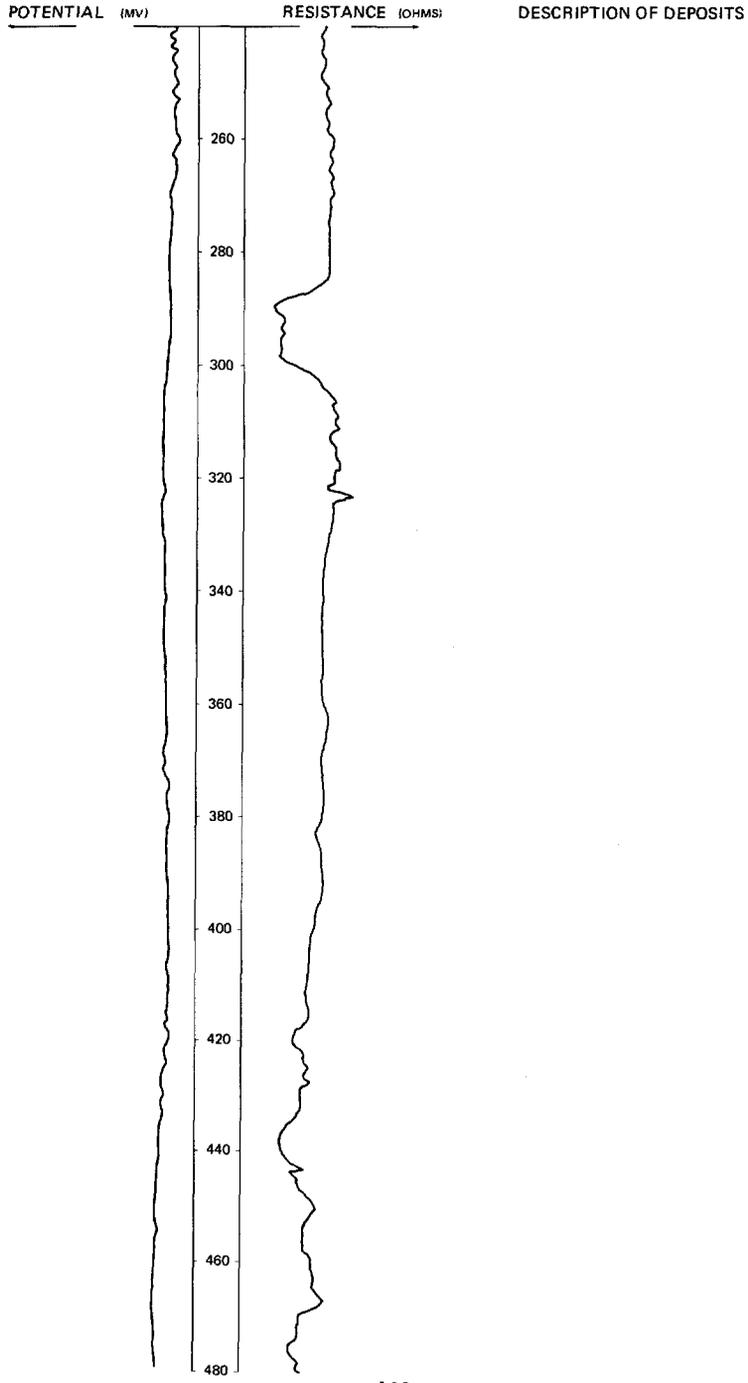


LOCATION: 146-076-27AAA

DATE DRILLED: 10/17/77

ALTITUDE: 1970
(FT, NGVD)

DEPTH: 642
(FT)

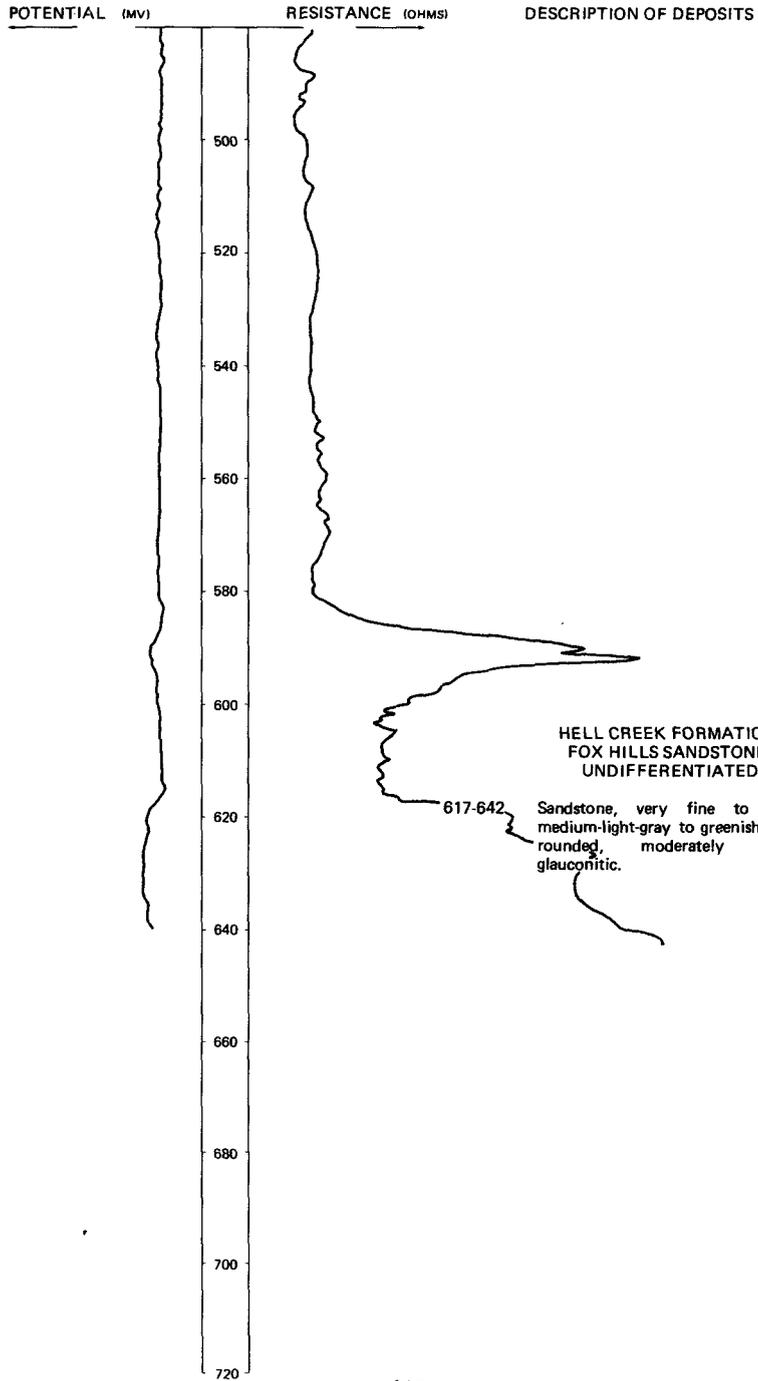


LOCATION: 146-076-27AAA

DATE DRILLED: 10/17/77

ALTITUDE: 1970
(FT, NGVD)

DEPTH: 642
(FT)



146-076-33DAA
(Log from Russell Drilling Co.)

Altitude:	1980 feet	Date drilled:	1/07/75
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1	1
	Yellow till-----	34	35
	Till-----	316	351
	Gravel and sand-----	5	356
	Till-----	184	540
	Shale-----	20	560
	Sand-----	80	640

146-077-03BBD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1920 feet	Date drilled:	8/26/68
	Topsoil, organic; silty sand; black-----	0.5	0.5
	Silty sand; 20 percent silty fines; trace of clay; 20 percent fine gravel; some medium-size gravel; fine to medium sand from 13 to 15 feet; glaciofluvial; brown-----	17.5	18
	Clay (glacial till), silty, sandy; fine gravel and lignite; sandy from 24 to 25 feet; brown-----	8	26
	Silt; fine sandy silt; calcareous; brown-----	4	30
	Silty sand; uniform fine grain; 30 percent silty fines; calcareous; glaciofluvial; brown-----	11	41
	Silt; fine sandy silt; slight acid reaction; fine sand lens at 50 feet; gray-----	19	60
	Silty sand; uniform fine sand; glaciofluvial; gray-----	7	67
	Silt; fine sandy silt; glaciofluvial; gray-----	8	75
	Silty sand; uniform very fine grain; glaciofluvial; gray-----	6	81
	Silt; fine sandy silt; till from 105 to 106 feet; glaciofluvial; gray-----	39	120

146-077-03CBB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1897 feet	Date drilled:	6/08/55
	Sand, fine, and coarse gravel; brown-----	15.5	15.5
	Sand, medium; lignite throughout; some coarse gravel; gray-----	11.5	27
	Sand and gravel, clayey and silty-----	3.5	30.5
	Silt; medium sand and lignite patches; gray-----	4.5	35
	Clay (glacial till), sandy, gray-----	15.4	50.4
	Sand, silty, gray-----	13.1	63.5
	Clay (glacial till), gray-----	11.5	75
	Sand, silty, gray-----	10	85

146-077-04ADA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1913 feet	Date drilled:	6/14/66
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, organic; silty fine sand; black-----	0.5	0.5
	Silty sand, calcareous; 15 percent silty fines; 20 percent fine gravel; well-graded sand; tan to brown-----	7.5	8
	Sand, calcareous, well-graded; with 10 percent fine gravel; clean to silty; tan to brown-----	5	13
	Clay (glacial till), silty, sandy; lignite; fine gravels; gray-----	8.5	21.5
	Silty sand; very fine to silty fine sand; 40 percent silt; glaciofluvial; brown to gray-----	18.5	40
	Clay (glacial till), silty, sandy, gravelly; silt zone from 47 to 50 feet; clay laminations; gray-----	11.5	51.5
	Silt; very fine clean sand; silty clay; glaciofluvial; gray-----	8.5	60
	Silty sand; lenses of clean fine sand; lignite; 30 percent silty fines; glaciofluvial; gray-----	14.5	74.5
	Clay (glacial till) and gray till-----	5.5	80
	Silt; very fine sandy silt; lenses of clean fine sand; glaciofluvial; gray-----	27	107
	Sand; very fine sand; silty in zones; some lignite; glaciofluvial; gray-----	11	118
	Silt; very fine sandy silt; lignite slack; dark silt; silty clay lenses; lacustrine-----	51.5	169.5
	Clayey silt, very silty; some coarse angular sand; lignite and fine gravels; slight acid reaction; gray-----	10.5	180
	Clay, silty, sandy; fine to medium subrounded gravels throughout; slight acid reaction; dark gray-----	120	300

146-077-04DBD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1900 feet	Date drilled:	8/09/68
	Topsoil, organic; sandy clay; black-----	1	1
	Sandy clay; silty sandy scattered fine gravel-----	8	9
	Silty clay, calcareous, glaciofluvial, dark gray-----	6	15
	Clay (glacial till), silty, sandy; fine gravel; lignite; slight acid reaction; dark gray-----	12	27
	Clayey silt; clay lenses; till finger from 30 to 31 feet; slight acid reaction; glaciofluvial; dark gray-----	19	46
	Sandy silt; very fine uniform grain; calcareous; glaciofluvial; gray-----	14	60
	Clay (glacial till), silty, sandy; gravel; lignite throughout; slight acid reaction; dark gray-----	6	66
	Silty sand, very fine, calcareous, glaciofluvial, gray-----	3	69
	Clay (glacial till), silty, sandy; gravel; lignite fragments throughout; calcareous; dark gray-----	10.5	79.5
	Silt; sandy zones; clayey zones; calcareous; glaciofluvial-----	15	94.5
	Clay (glacial till), calcareous, silty, sandy; gravel; lignite throughout; dark gray-----	15.5	110
	Silt; sand lenses; calcareous; glaciofluvial; dark gray-----	5	115
	Clay (glacial till), calcareous, silty; sandy lignite throughout; dark gray-----	4.5	119.5
	Silt, calcareous, glaciofluvial, gray-----	.5	120

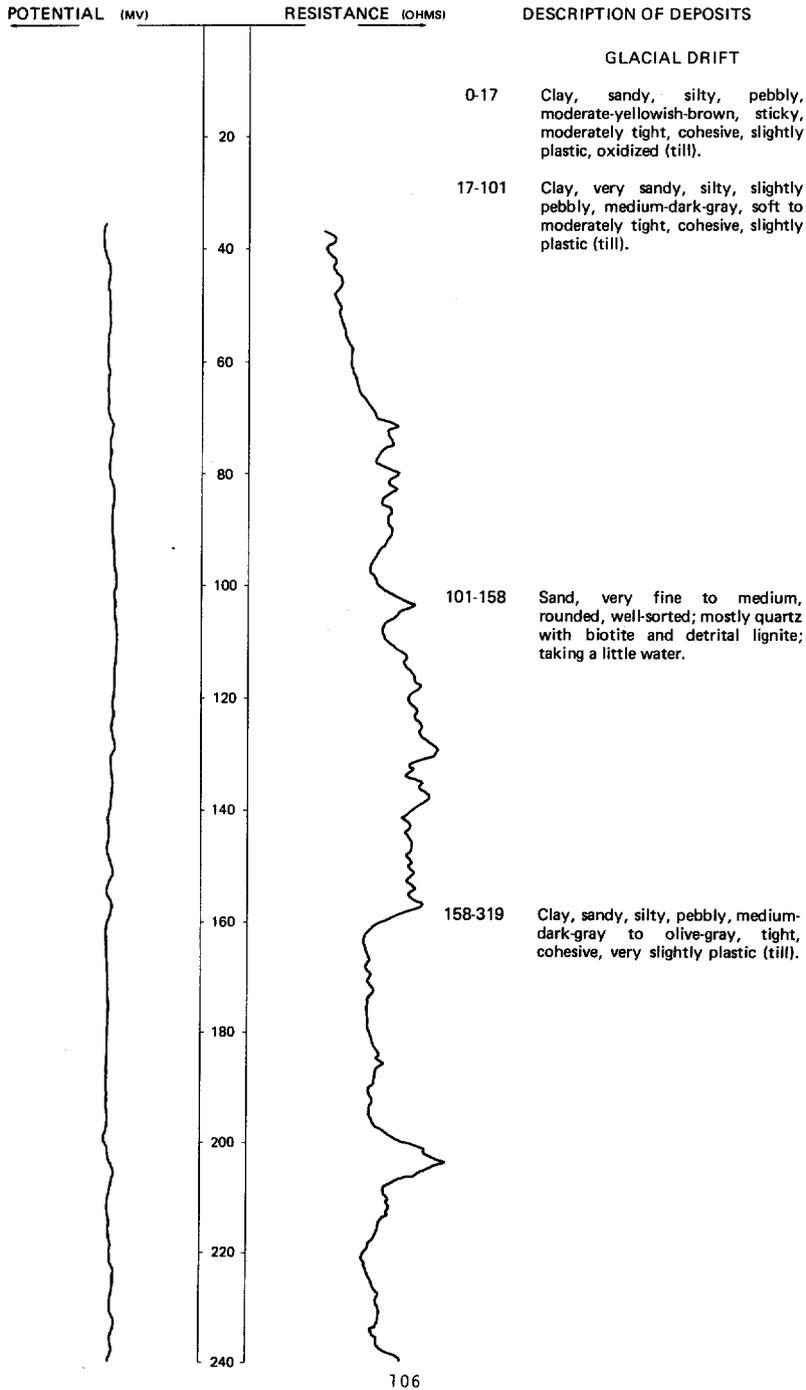
NDSWC 5264

LOCATION: 146-077-07AAB

DATE DRILLED: 10/26/77

ALTITUDE: 1890
(FT. NGVD)

DEPTH: 422
(FT)

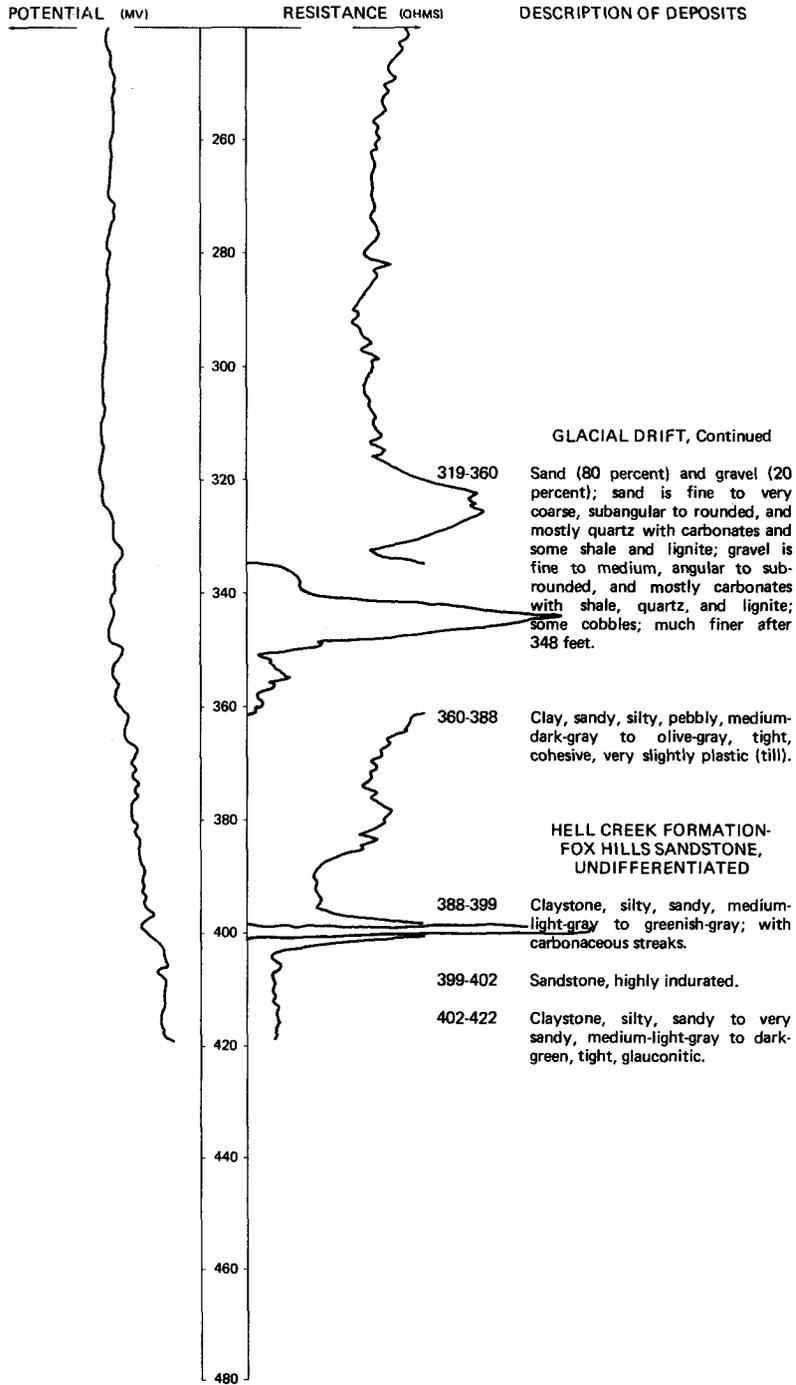


LOCATION: 146-077-07AAB

DATE DRILLED: 10/26/77

ALTITUDE: 1890
(FT, NGVD)

DEPTH: 422
(FT)



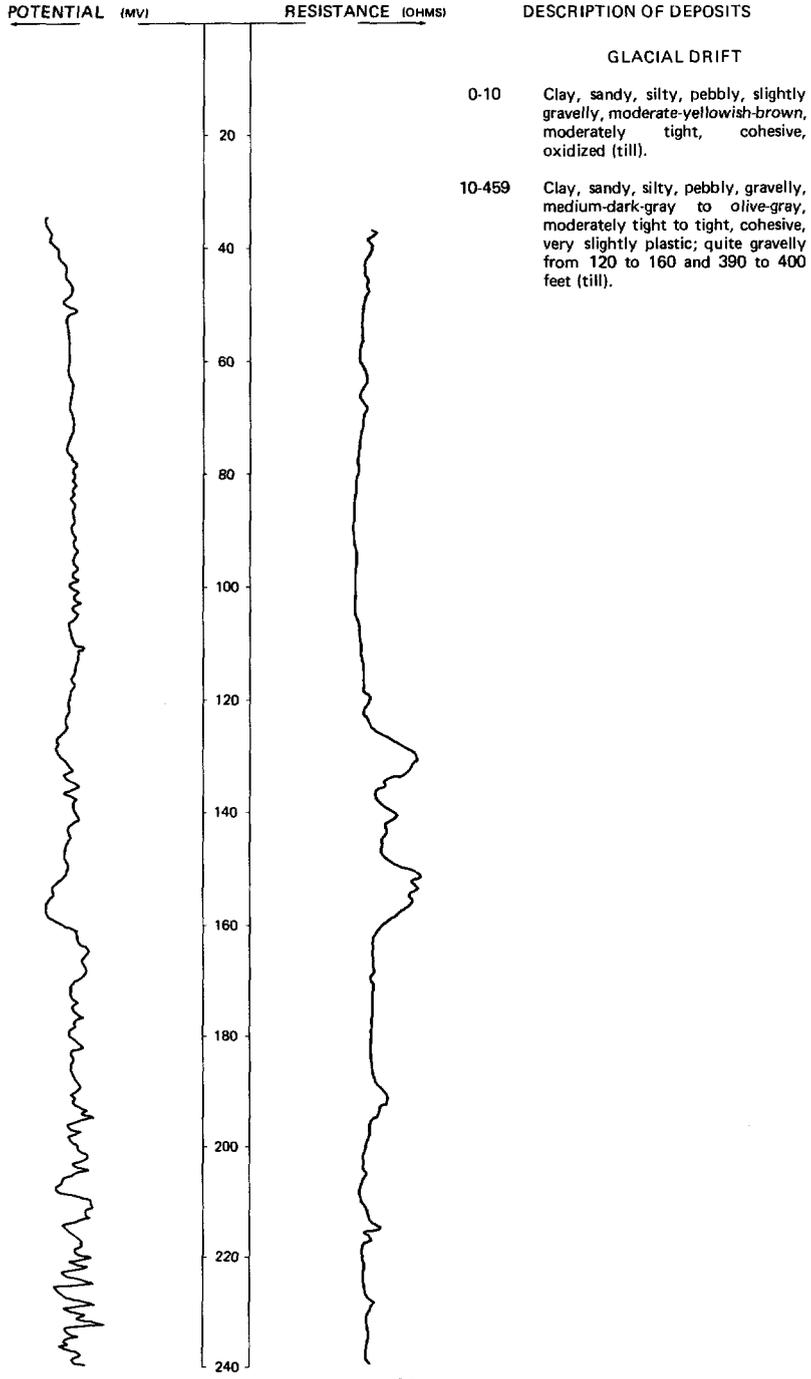
NDSWC 5258

LOCATION: 146-077-08CCB

DATE DRILLED: 10/21/77

ALTITUDE: 1890
(FT. NGVD)

DEPTH: 502
(FT)

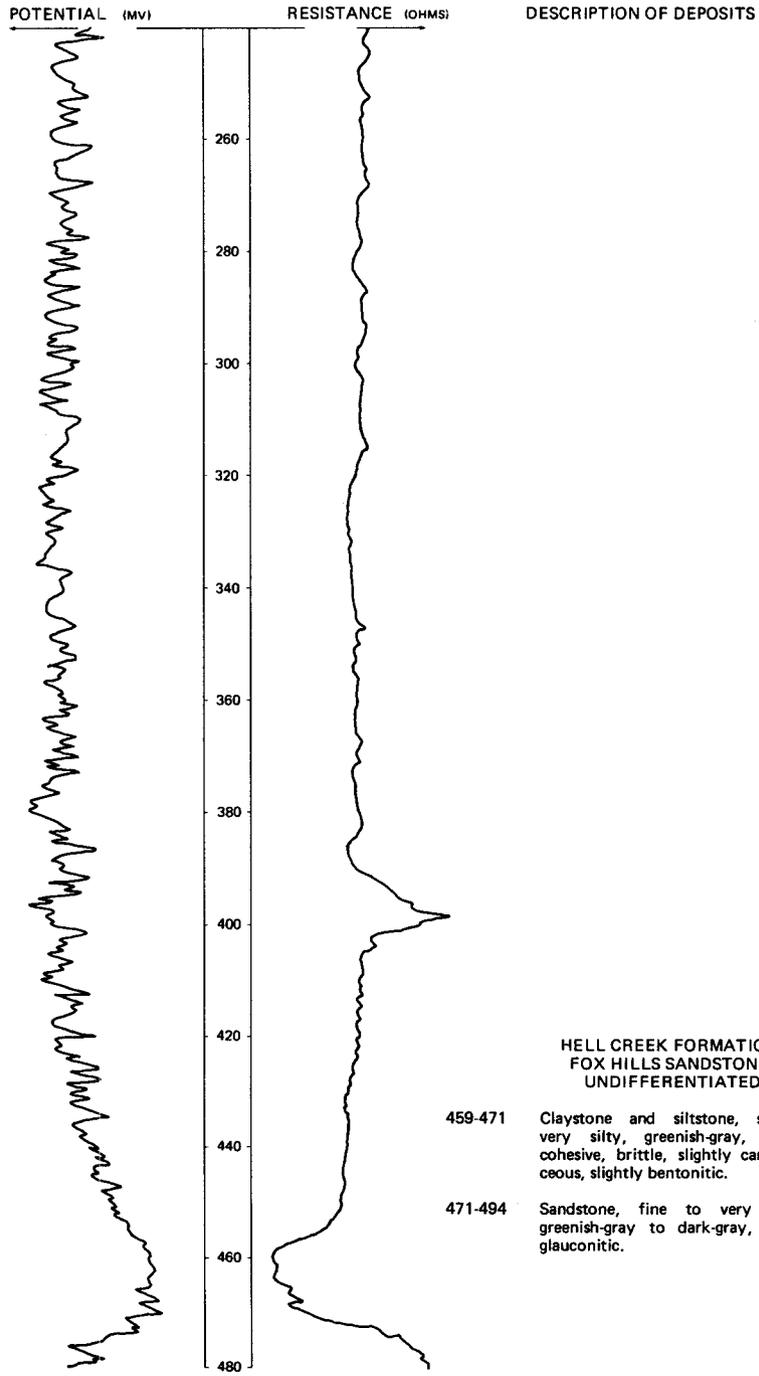


LOCATION: 146-077-08CCB

DATE DRILLED: 10/21/77

ALTITUDE: 1890
(FT, NGVD)

DEPTH: 502
(FT)



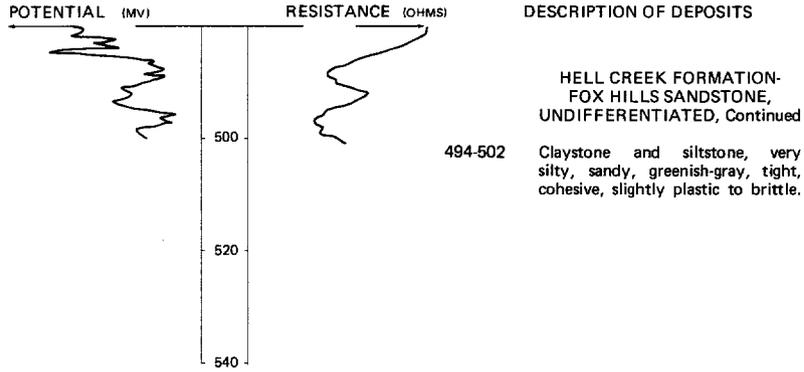
NDSWC 5258, Continued

LOCATION: 146-077-08CCB

DATE DRILLED: 10/21/77

ALTITUDE: 1890
(FT, NGVD)

DEPTH: 502
(FT)



146-077-09ABB

(Log modified from U.S. Bureau of Reclamation)

Altitude: 1902 feet

Date drilled: 3/10/55

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1.5	1.5
	Clay, silty, dry, brown-----	2.7	4.2
	Sand, fine, poorly graded; trace of silt; buff-----	2.8	7
	Clay (glacial till); gravel; gray-----	55.5	62.5
	Sand, fine; borderline silt; unstratified; gray-----	7.5	70
	Silt; some very fine sand; gray-----	6	76
	Sand, very fine, clean to very silty, gray-----	29	105

146-077-09CAB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1901 feet	Date drilled:	7/01/66
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, organic, silty; clayey sand; black-----	1.8	1.8
	Sandy clay (till); gravelly from 5 to 10 feet; graded sand; moderate acid reaction; brown-----	10.2	12
	Clay (glacial till), silty; sandy fine to medium gravels; some coarse gravel; lignite throughout; calcareous; brown-----	128	140
	Silty clay; hard fine sand; fine silt; calcareous; lacustrine; gray-----	12	152
	Silt; very fine sand; silty clay; some acid reaction; lacustrine; gray-----	11	163
	Clay (glacial till); very silty to 169 feet; some pebbles; silty sandy lignite fragments; gray-----	18	181
	Silt; clayey to very fine sandy silt; glaciofluvial; light gray to dark gray-----	4.2	185.2
	Clay (glacial till), silty, sandy; gravel and lignite throughout; moderate acid reaction; cobbles and boulders from 280 to 285 feet; gray-----	104.8	290
	Silty sand; lignite slack; clayey laminations; shale fragments; gray-----	5	295
	Sand, dense; fine to medium sand; trace of silt; glaciofluvial; light green-----	5	300

146-077-12AAA
(Log from Huber Drilling)

Altitude:	1980 feet	Date drilled:	9/02/70
	Topsoil, black, sandy-----	2	2
	Yellow clay; with brown streaks-----	30	32
	Blue clay-----	21	53
	Rock-----	2	55
	Blue clay-----	63	118
	Sand-----	1	119
	Blue clay-----	3	122
	Sand and gravel; quite coarse bottom 5 feet-----	18	140

146-077-13BCA
(Log from Driver Well Drilling, Inc.)

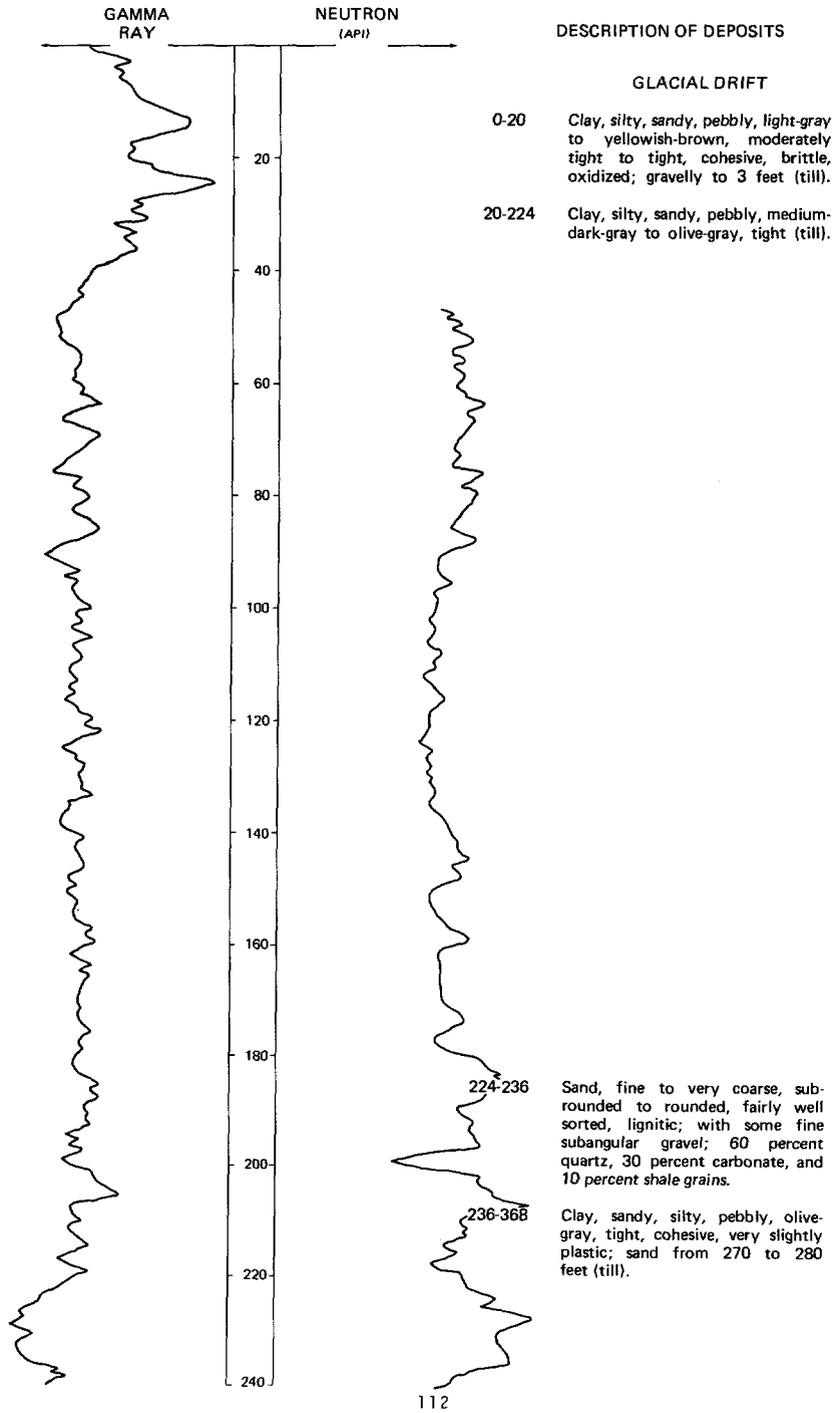
		Date drilled:	5/01/75
	Topsoil-----	2	2
	Brown clay and rock-----	24	26
	Blue clay-----	49	75
	Mixed gravel and blue clay-----	15	90

LOCATION: 146-077-13C8C

DATE DRILLED: 7/13/78

ALTITUDE: 1900
(FT, NGVD)

DEPTH: 435
(FT)

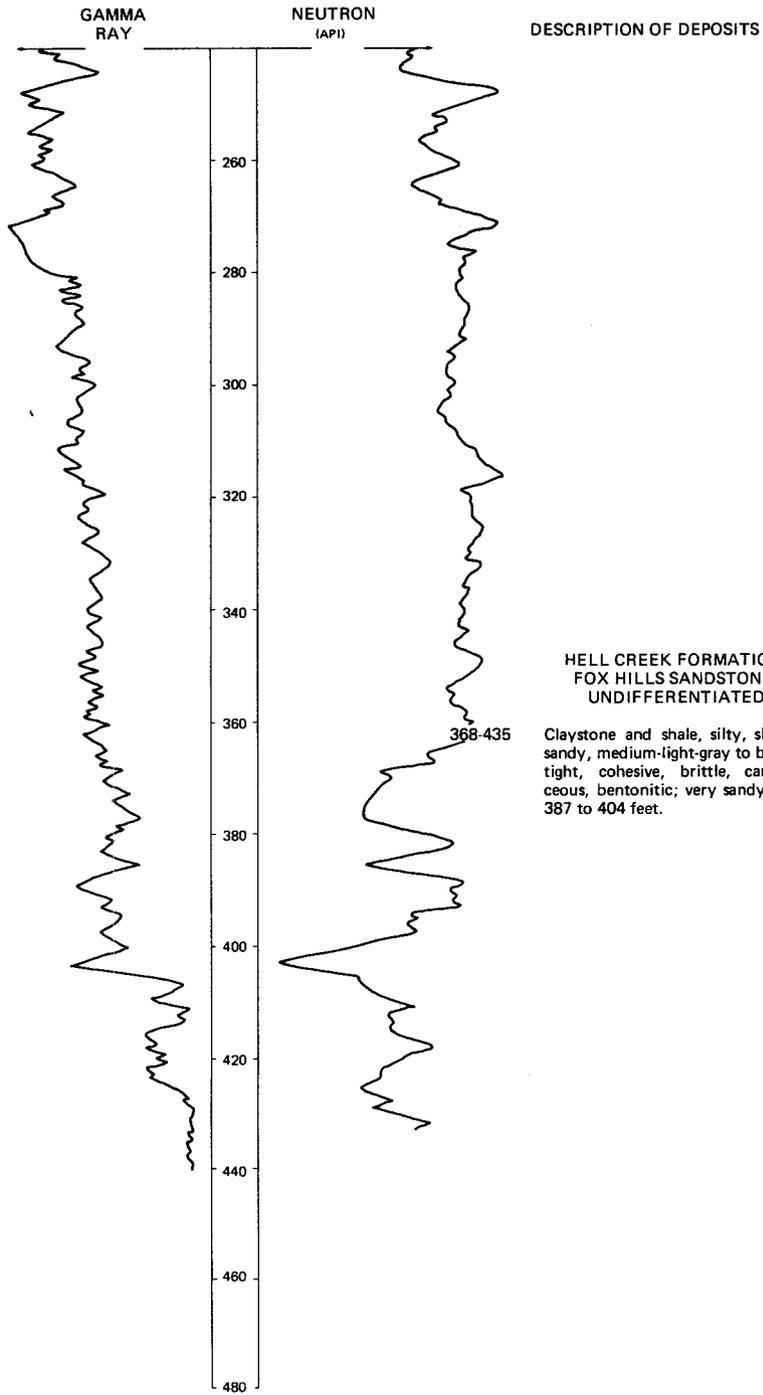


LOCATION: 146-077-13CBC

DATE DRILLED: 7/13/78

ALTITUDE: 1900
(FT, NGVD)

DEPTH: 435
(FT)



146-077-16BAA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1895 feet	Date drilled:	2/08/73
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, organic; clay with fine sand; slight acid HCL reaction; black-----	1	1
	Sandy clay (glacial till); 40 percent coarse sand; 55 percent medium fines; 5 percent gravel; lignite; calcareous; reddish brown-----	6	7
	Clay (glacial till); silty clay; clay fines; 30 percent coarse sand; 5 percent gravel; 3/4-inch lignite fragments throughout; calcareous; grayish brown-----	93	100

146-077-17ACD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1896 feet	Date drilled:	1/25/55
	Topsoil-----	0.6	0.6
	Clay (glacial till), silty, sandy, pebbly, brown-----	29.4	30
	Clay (glacial till); clayey sandy silt; pebbly; gray-----	55	85

146-077-17CDD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1856 feet	Date drilled:	2/22/55
	Ice and water-----	4.8	4.8
	Clay, silty, sandy, pebbly, brown-----	7.7	12.5
	Clay (glacial till), silty, sandy, pebbly, gray-----	47.5	60

146-077-17DBC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1864 feet	Date drilled:	5/22/69
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, silty, sandy, dark-gray-----	0.5	0.5
	Silt; 25 percent fine sand; trace of clay; calcareous; gray-----	4.5	5
	Clay, silty; pea gravel; calcareous; glaciofluvial; gray-----	4	9
	Clay; lignite fragments; some sand; glaciofluvial; brown-----	5	14
	Clay (glacial till), sandy, silty; scattered gravel and lignite; zones of 100 percent sand to 100 percent clay in 3-foot stratifications-----	46	60
	Silt; sandy zones; lignite slack; calcareous; glaciofluvial; gray-----	5	65

146-077-20ADA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1874 feet	Date drilled:	2/23/73
	Topsoil, dark-brown-----	1	1
	Clayey sand; 50 percent medium to fine sand; some coarse gravel; calcareous; brown-----	1	2
	Boulders-----	2	4
	Clayey sand and gravel; 50 percent angular gravel with cobbles and boulders; 30 percent angular sand; calcareous; brown-----	8	12
	Clay (glacial till); 35 percent sand with some gravel and shale; calcareous; brown-----	3	15
	Clay (glacial till); 35 percent sand, gravel, and cobbles; calcareous; gray-----	60	75

146-077-20CDB
(Log from Russell Drilling Co.)

Altitude:	1920 feet	Date drilled:	1/01/73
	Gravel and sand-----	20	20
	Blue clay and till-----	270	290
	Shale-----	150	440
	Sandy shale-----	75	515
	Blue sand, fine-----	45	560
	Shale-----	190	750

146-077-20CDC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1923 feet	Date drilled:	12/12/72
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Sandy clay (topsoil), silty; 25 percent fine sand; fine gravel to 1/2 inch; calcareous; black-----	2.5	2.5
	Sandy clay (subsoil); 30 percent fine sand; fine gravel to 1/2 inch; calcareous; coarse sand; brown-----	2.5	5
	Silty sand; lignite fragments; 75 percent medium to fine sand; 5 percent subrounded gravel; calcareous; brown-----	2	7
	Sand; 80 percent fine sand; 15 percent gravel; silty fines; scattered lignite; calcareous; brown-----	6.5	13.5
	Sandy clay; trace of lignite; 25 percent coarse sand; 1/2-inch gravel scattered throughout; moderately calcareous; brown-----	1.2	14.7
	Poorly graded sand; 90 percent medium to fine sand; trace of gravel-----	.3	15
	Sandy clay (glacial till); scattered lignite; 5 percent gravel; 25 percent coarse sand; 55 percent clay fines; brown to gray-----	5	20
	Sandy clay (glacial till); 30 percent coarse to fine sand; 5 percent scattered gravel; calcareous; gray-----	1.5	21.5
	Clay (glacial till); 60 to 70 percent silty clay fines; 20 percent coarse to fine sands; scattered gravel; lignite fragments; silty clay to clayey silt; calcareous; gray-----	88.5	110

146-077-20DCB
(Log modified from U.S. Bureau of Reclamation)

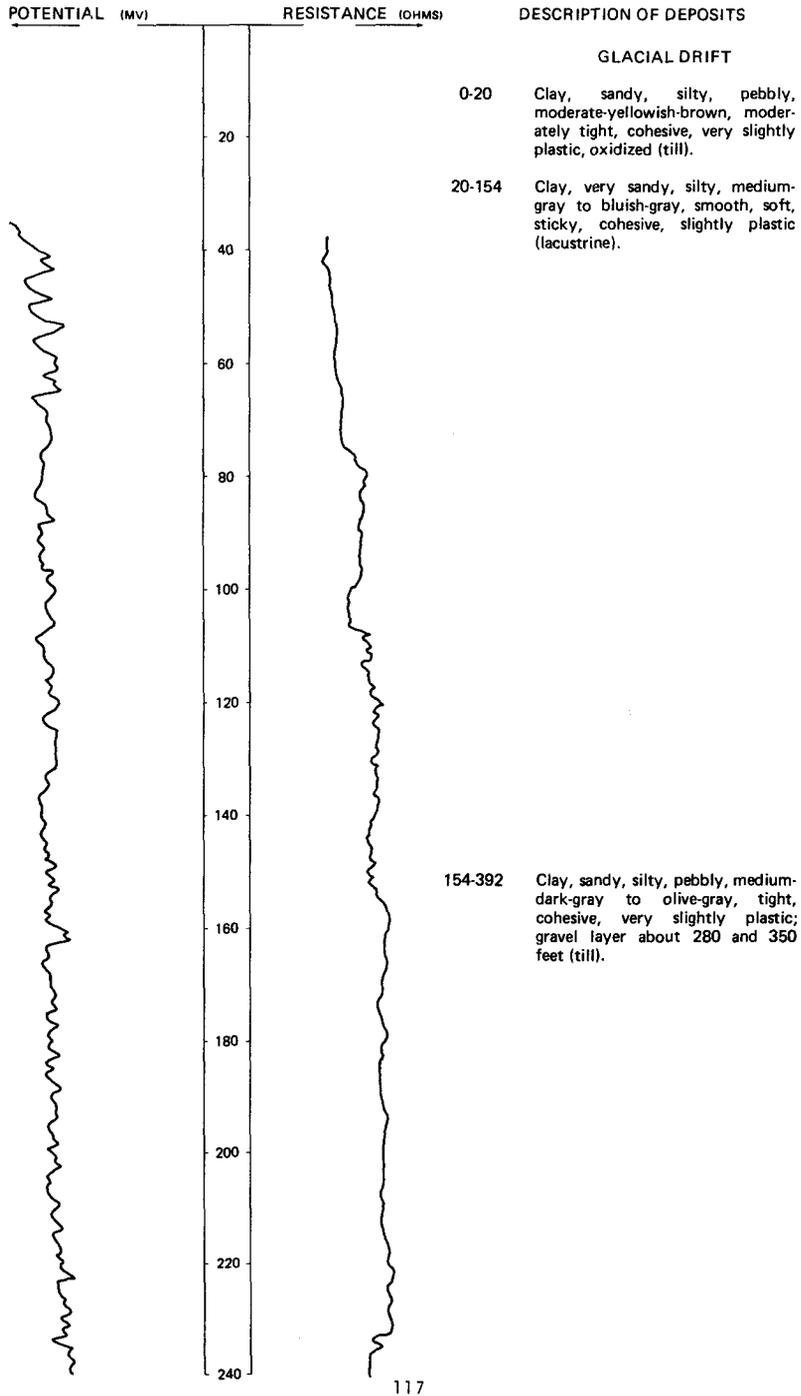
Altitude:	1916 feet	Date drilled:	7/05/66
Glacial drift:	Topsoil, organic; sandy clay; dark brown-----	0.8	0.8
	Clay (glacial till); gypsum lenses; fine gravel and lignite; calcareous; some medium gravel; silty; light gray-----	6.7	7.5
	Silty clay; gypsum lenses; silty; weak HCL reaction; fine gravel; glaciofluvial; brown and gray-----	16.5	24
	Clayey silt; fine lignite slack; silty clay and sandy silt; weak HCL reaction; glaciofluvial; grayish brown-----	13.5	37.5
	Clay (glacial till); lignite fragments; fine gravel; medium to coarse gravel; sandy; weak HCL reaction; gray and brown-----	63.5	101
	Clayey silt; very fine sand; silty clayey laminations; weak HCL reaction; gray-----	4	105
	Clay (glacial till); fine gravel; lignite fragments throughout; medium and coarse gravel; weak acid reaction; gray-----	95	200
	Clay (glacial till), silty; fine to coarse gravel; lignite fragments throughout; calcareous; dark gray-----	85	285
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:	Clay shale; fine sand; clay shale from 289 to 300 feet; dark gray-----	15	300

LOCATION: 146-077-21BBB

DATE DRILLED: 10/20/77

ALTITUDE: 1870
(FT, NGVD)

DEPTH: 422
(FT)

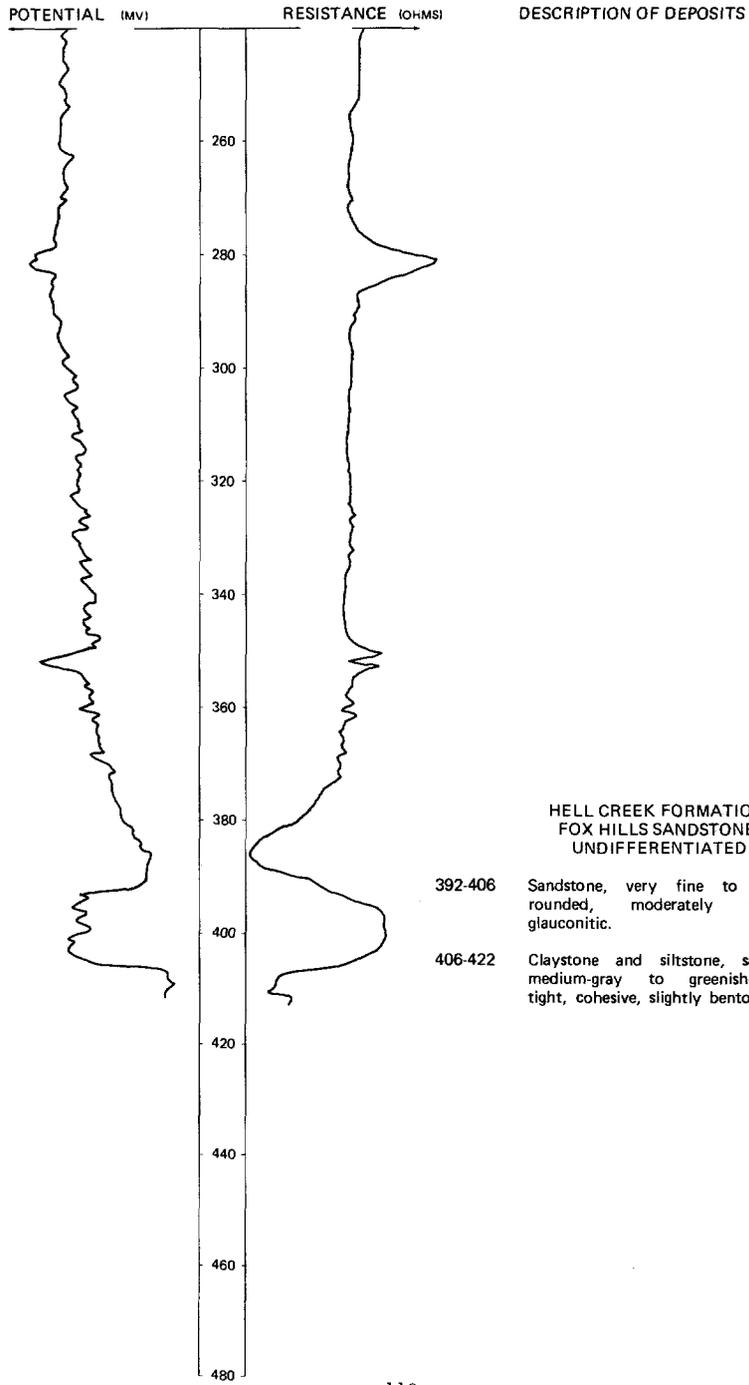


LOCATION: 146-077-21BBB

DATE DRILLED: 10/20/77

ALTITUDE: 1870
(FT, NGVD)

DEPTH: 422
(FT)

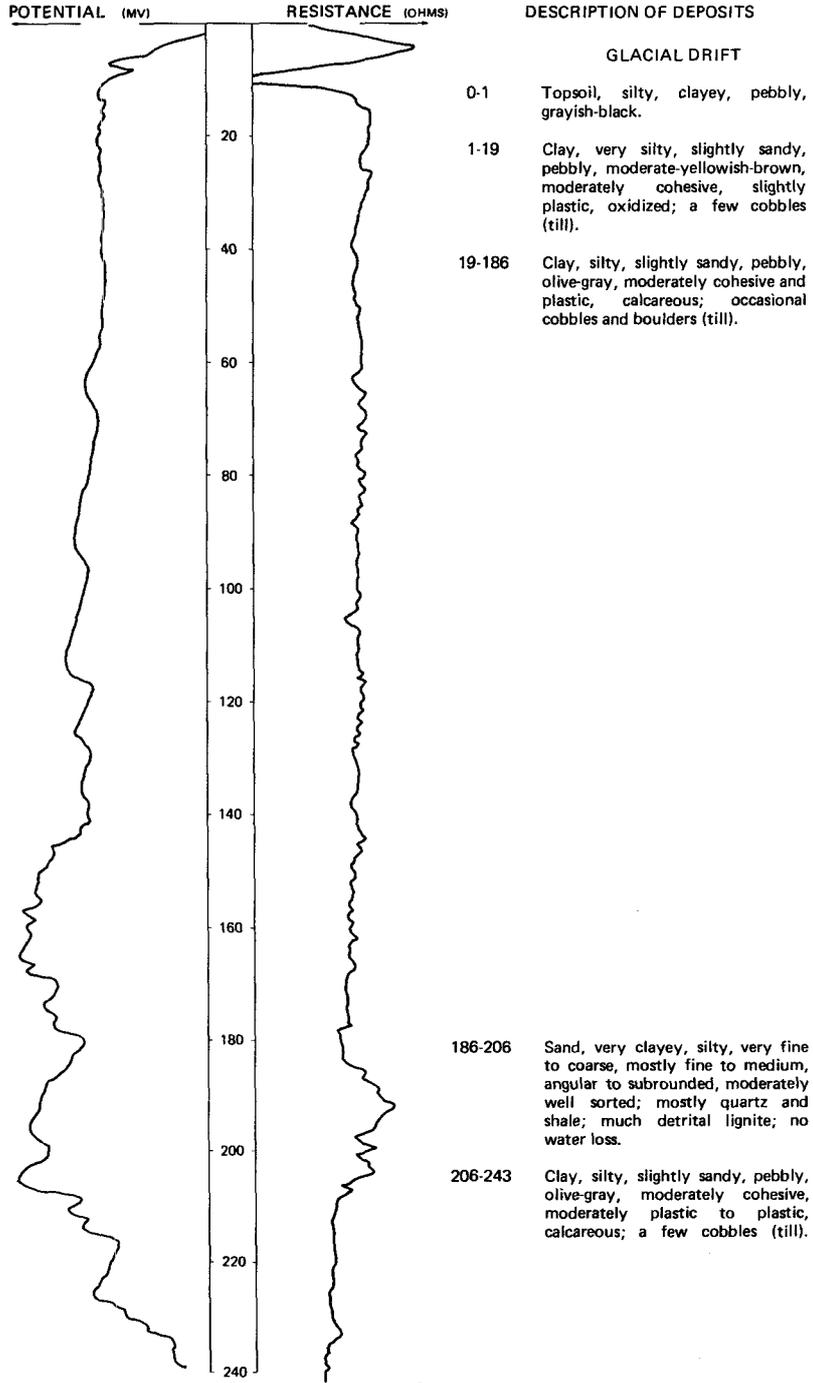


LOCATION: 146-077-21CCC

DATE DRILLED: 9/22/70

ALTITUDE: 1930
(FT, NGVD)

DEPTH: 260
(FT)

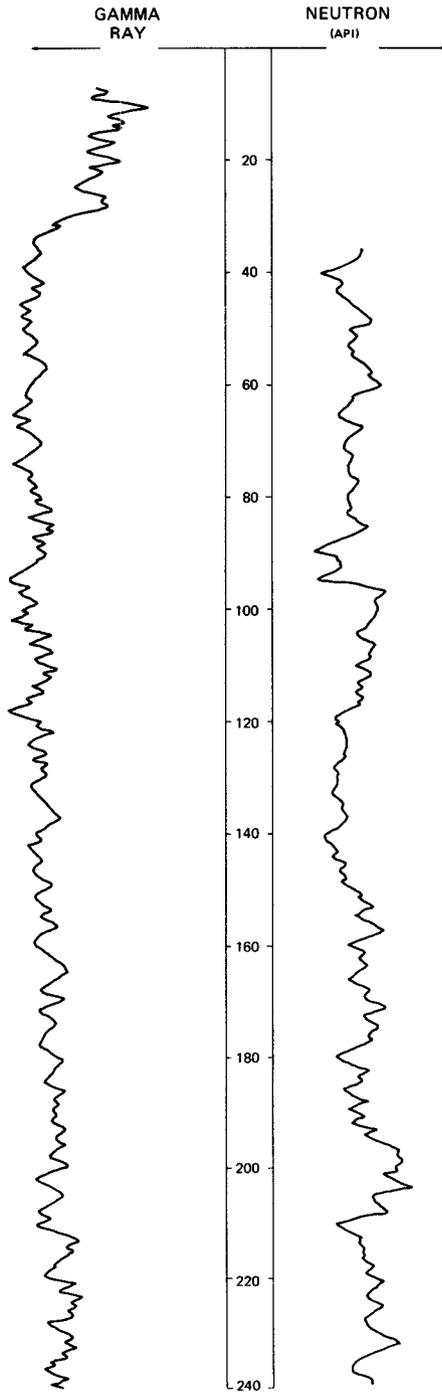


LOCATION: 146-077-25BBC

DATE DRILLED: 7/13/78

ALTITUDE: 1940
(FT, NGVD)

DEPTH: 415
(FT)



DESCRIPTION OF DEPOSITS

GLACIAL DRIFT

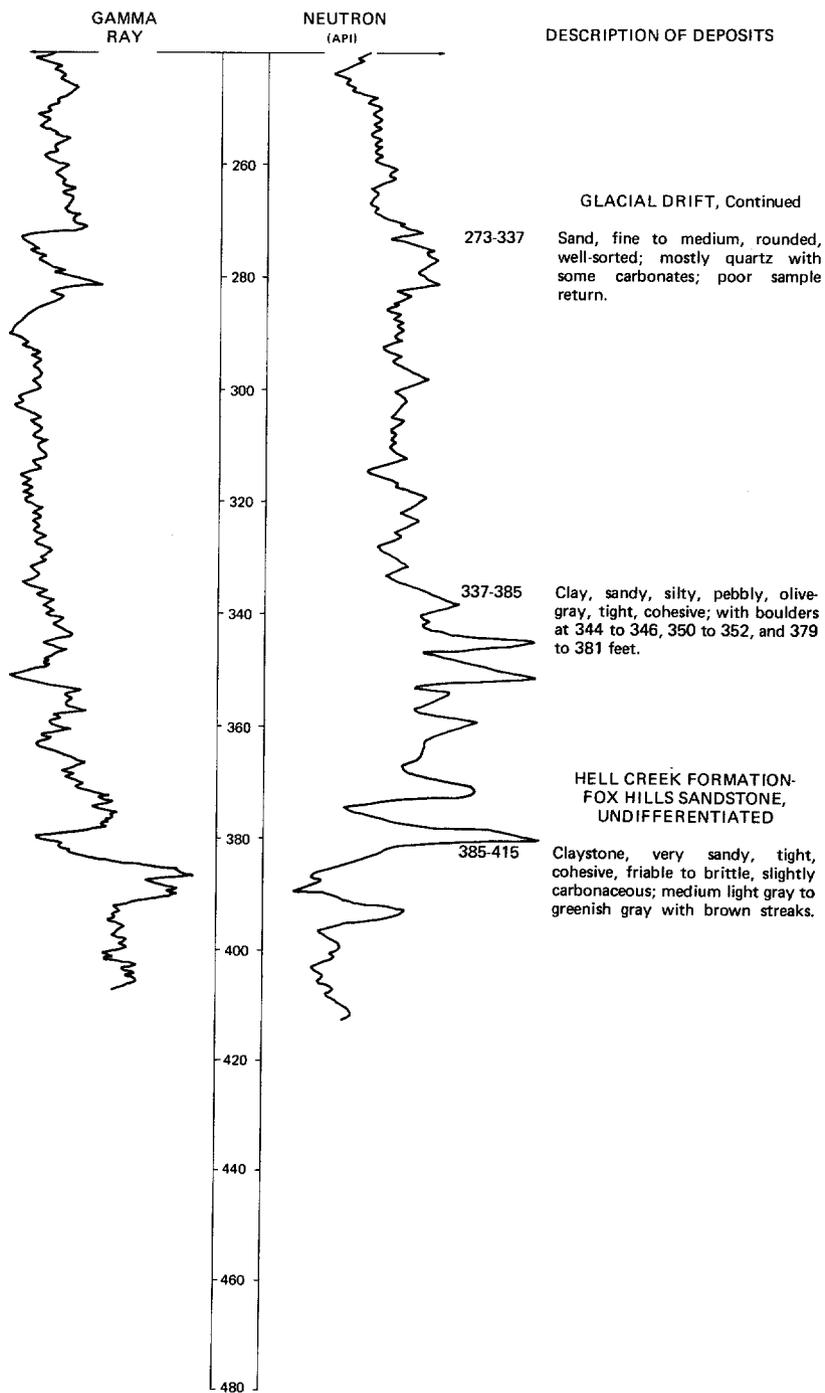
- 0-15 Clay, sandy, silty, pebbly, moderate-yellowish-brown, moderately tight, cohesive, very slightly plastic, oxidized (till).
- 15-273 Clay, sandy, silty, pebbly, medium-dark-gray to olive-gray, tight, cohesive; bouldery and gravelly in spots (till).

LOCATION: 146-077-25BBC

DATE DRILLED: 7/13/78

ALTITUDE: 1940
(FT, NGVD)

DEPTH: 415
(FT)



146-077-29BBC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1932 feet	Date drilled:	10/27/71
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
Glacial drift:			
	Topsoil-----	1	1
	Clay (glacial till), silty; lignite fragments; some cobbles; gravel; brown-----	234	235
	Sand, gravel, and lignite-----	40	275
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Clay shale, gray-----	25	300

146-077-29CBD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1937 feet	Date drilled:	5/15/69
	Topsoil (glacial till), organic, black to brown-----	1	1
	Clay (glacial till), sandy, silty; scattered gravel; lignite throughout; calcareous; sandy till from 105 to 110 feet; tan-brown-gray-----	124	125

146-077-29DBB
(Log from Feickert Drilling Co.)

		Date drilled:	6/05/73
	Topsoil, black-----	2	2
	Clay; with stones-----	8	10
	Gravel-----	13	23
	Clay, yellow-----	10	33
	Sand, yellow-----	12	45
	Gravel-----	3	48
	Clay, blue-----	40	88
	Sand, gray-----	25	113
	Clay, blue-----	45	158
	Gravel-----	5	163
	Gravel and rock-----	12	175
	Sand, gray-----	3	178
	Gravel-----	17	195
	Gravel and rock-----	15	210
	Clay, blue-----	40	250
	Rock-----	1	251
	Clay, blue-----	37	288
	Rock-----	1.5	289.5
	Clay, blue-----	40.5	330
	Rock-----	1	331
	Clay, brown-----	39	370
	Clay, white-----	23	393
	Clay, brown-----	12	405
	Sandy clay-----	3	408
	Sand, blue-----	12	420

146-077-29DDD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1898 feet	Date drilled:	3/22/68
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, organic, silty; fine sandy clay; gravel; black-----	4	4
	Clayey sand; moderate HCL reaction; fine to medium sand; 25 percent fine to medium gravel; some coarse gravel; silty to clayey fines; gray and brown-----	16	20
	Silty sand and gravel; well-graded sand; 35 percent medium gravel; 20 percent silty fines; moderately calcareous; glaciofluvial; brown-----	4	24
	Sand, fine, uniform, clean, glaciofluvial, brown-----	5	29
	Sand, fine to medium, well-graded; fine to medium gravel; lignite; 20 percent fine gravel; cobbles; glaciofluvial; gray-----	10.5	39.5
	Silty sand and gravel; 25 percent fine to medium low-graded sand; 20 percent silty to clayey lignite; calcareous; glaciofluvial; gray-----	2.5	42
	Sand and gravel; cobbles; boulders; medium to coarse gravel; glaciofluvial; some granite boulders-----	6	48
	Clay (glacial till), calcareous, silty, sandy; gravel; sandy clay; lacustrine; gravelly till; gray-----	42	90

146-077-30DAB
(Log from Feickert Drilling Co.)

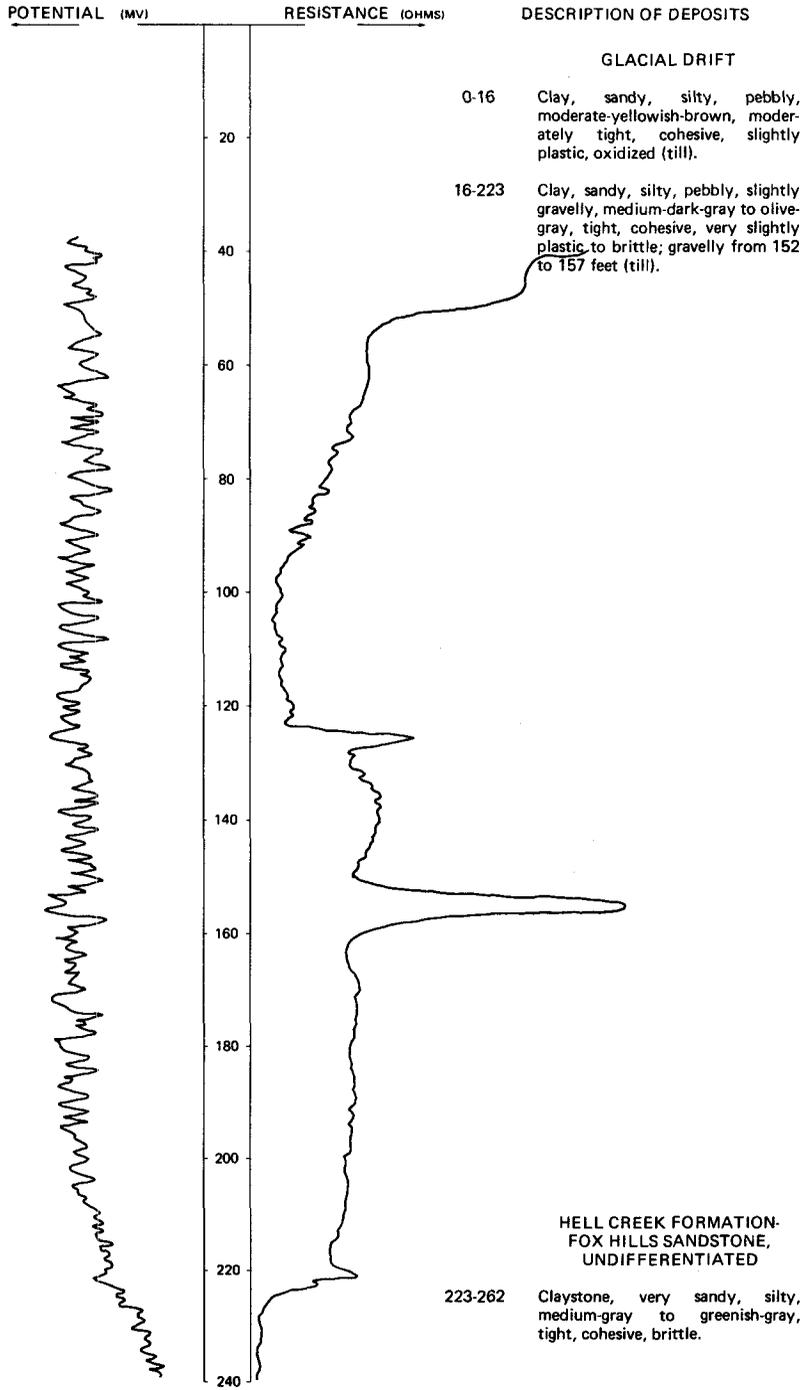
Altitude:	1930 feet	Date drilled:	8/08/74
	Clay; with stones-----	40	40
	Clay; with coal streaks-----	150	190
	Sand and gravel-----	7	197
	Clay and shale-----	63	260
	Sand-----	4	264
	Clay and shale-----	31	295
	Clay, blue-----	48	343
	Clay, brown-----	62	405
	Siltstone, dark-gray-----	20	425
	Clay, brown-----	13	438
	Sandy clay-----	7	445
	Clay, blue-----	30	475
	Siltstone, dark-gray-----	10	485

LOCATION: 146-077-31ABA

DATE DRILLED: 10/24/77

ALTITUDE: 1900
(FT, NGVD)

DEPTH: 262
(FT)



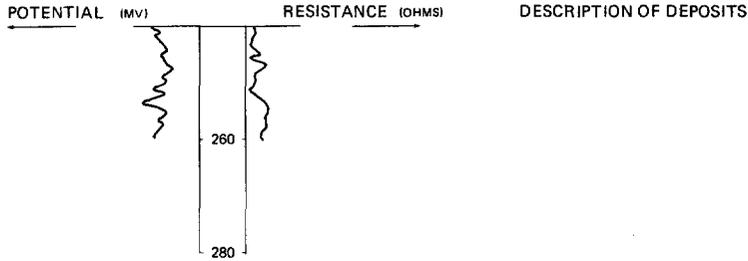
NDSWC 5260, Continued

LOCATION: 146-077-31ABA

DATE DRILLED: 10/24/77

ALTITUDE: 1900
(FT, NGVD)

DEPTH: 262
(FT)



146-077-32CCA
(Log modified from U.S. Bureau of Reclamation)

Altitude: 1893 feet

Date drilled: 12/01/54

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Sand and gravel; fine to coarse sand; silty; 10 percent gravel; brown-----	18.3	18.3
	Sand and gravel; medium to coarse sand; fine to medium gravel; excess clay; gray-----	4.7	23
	Clay, silty; clay matrix; crushed shale fragments; gray-----	28	51
	Clay, silty; shale fragments; gray-----	20.4	71.4
	Sand, very fine, clayey; sandy clay; gray-----	9.6	81

146-077-32CCC
NDSWC 5259

Altitude: 1896 feet

Date drilled: 10/24/77

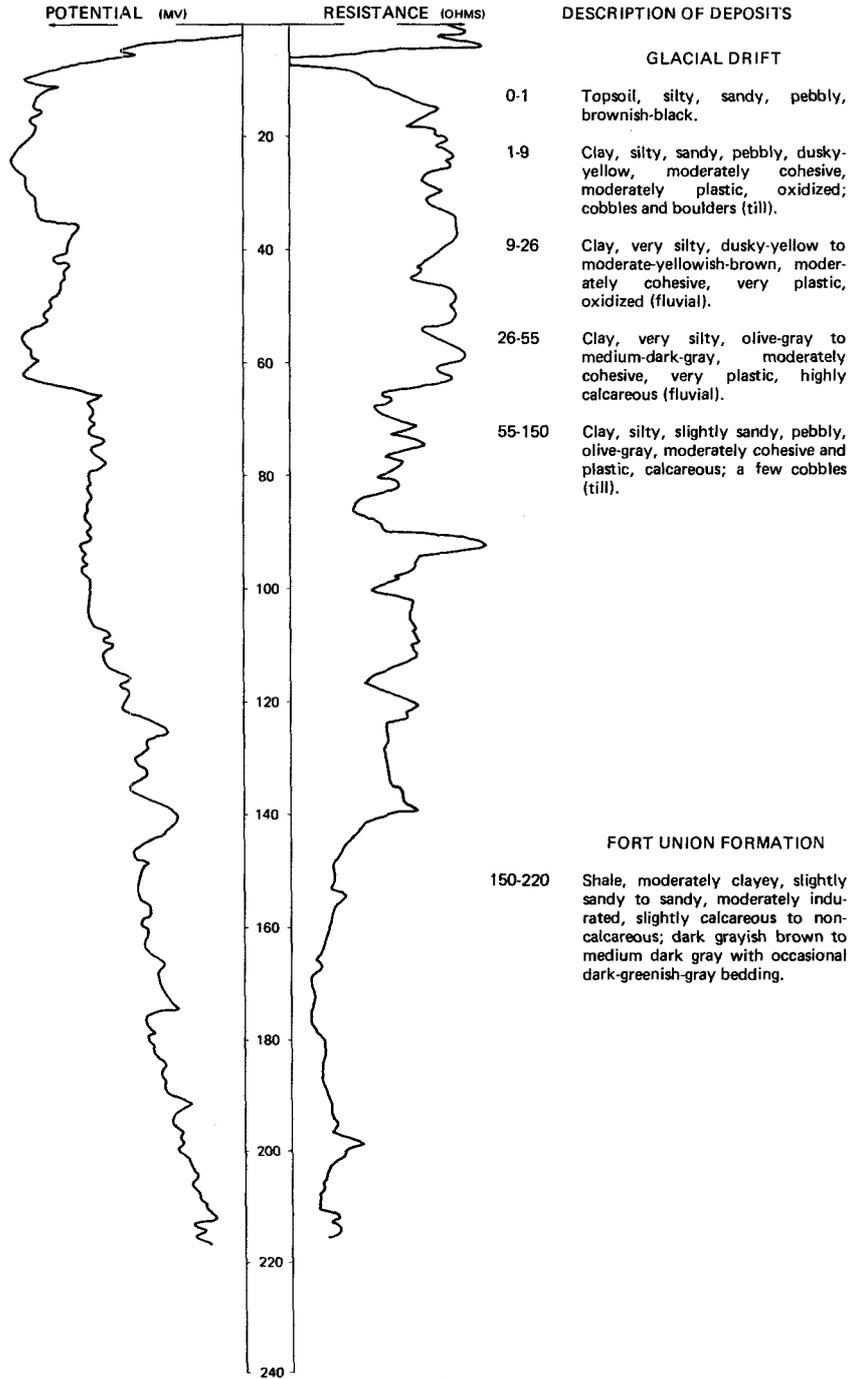
	Sand (60 percent) and gravel (40 percent); sand is fine to very coarse, mostly coarse to very coarse, subangular to rounded, and 60 percent quartz, 30 percent carbonate, and 10 percent granitic grains; gravel is fine to coarse, angular to subrounded, and 60 percent carbonate, 20 percent shale, and 20 percent quartz and granitic pebbles; very cobbly; abandoned at 38 feet-----	38	38
--	---	----	----

LOCATION: 146-077-34BAB

DATE DRILLED: 9/21/70

ALTITUDE: 1970
(FT, NGVD)

DEPTH: 220
(FT)

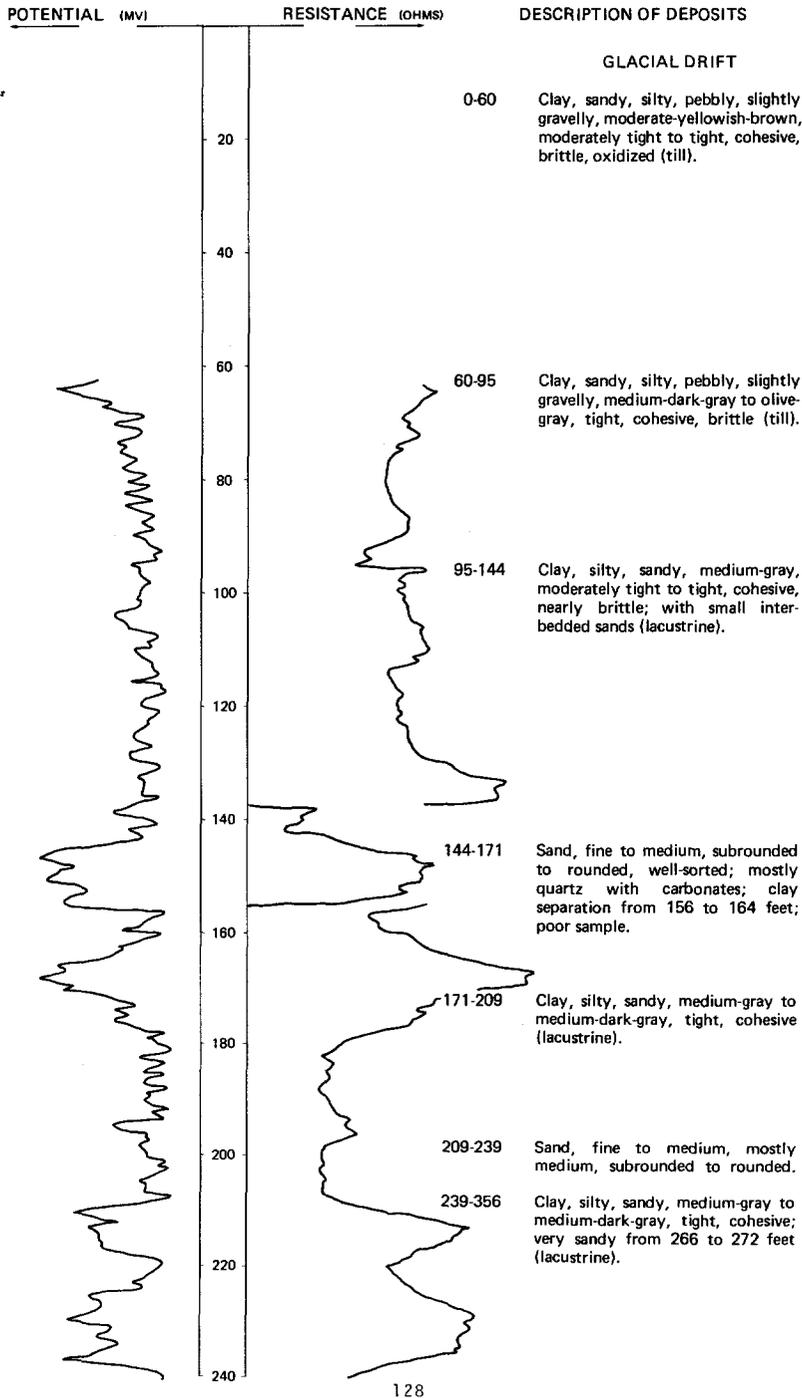


LOCATION: 146-077-36CCC1, 2

DATE DRILLED: 10/19/77

ALTITUDE: 2020
(FT, NGVD)

DEPTH: 722
(FT)



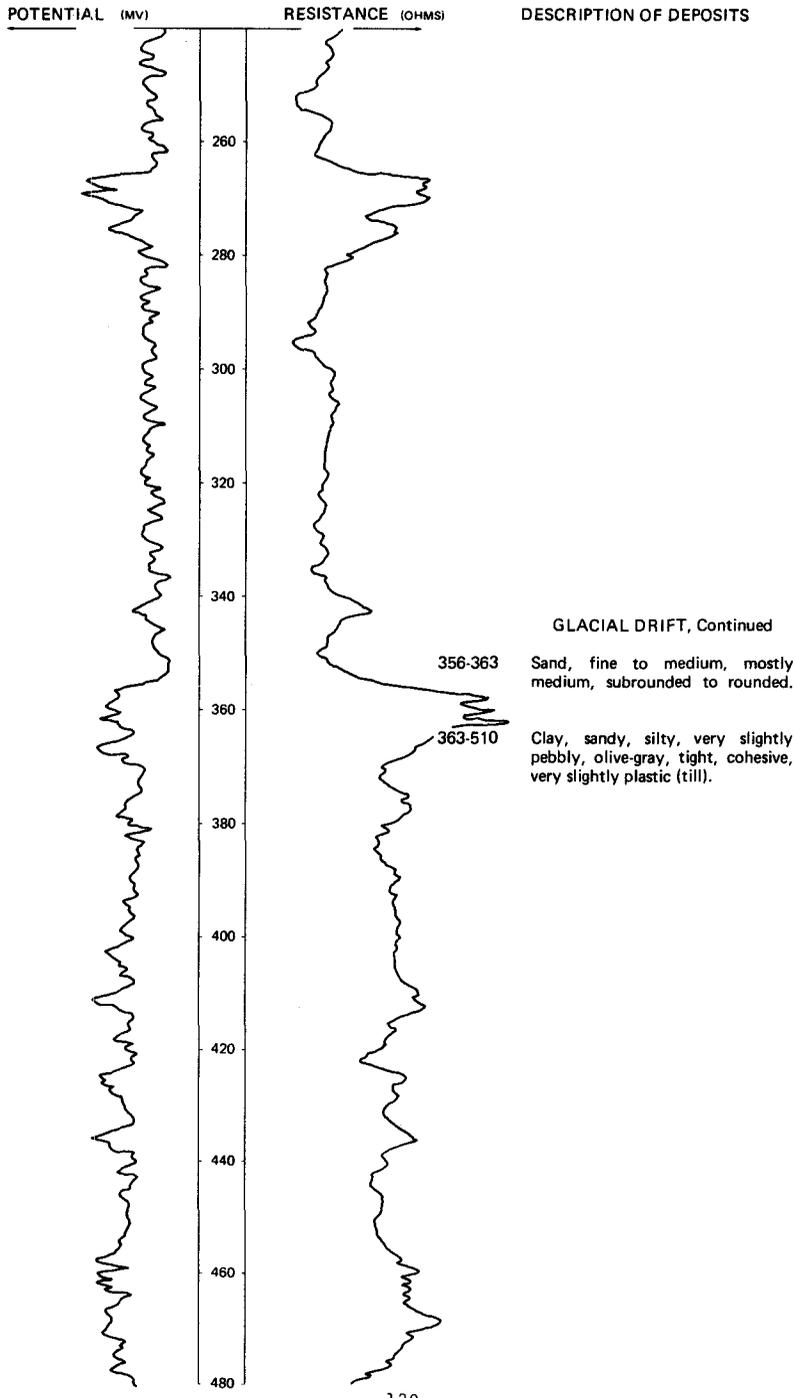
NDSWC 5256, 5256A, Continued

LOCATION: 146-077-36CCC1, 2

DATE DRILLED: 10/19/77

ALTITUDE: 2020
(FT, NGVD)

DEPTH: 722
(FT)

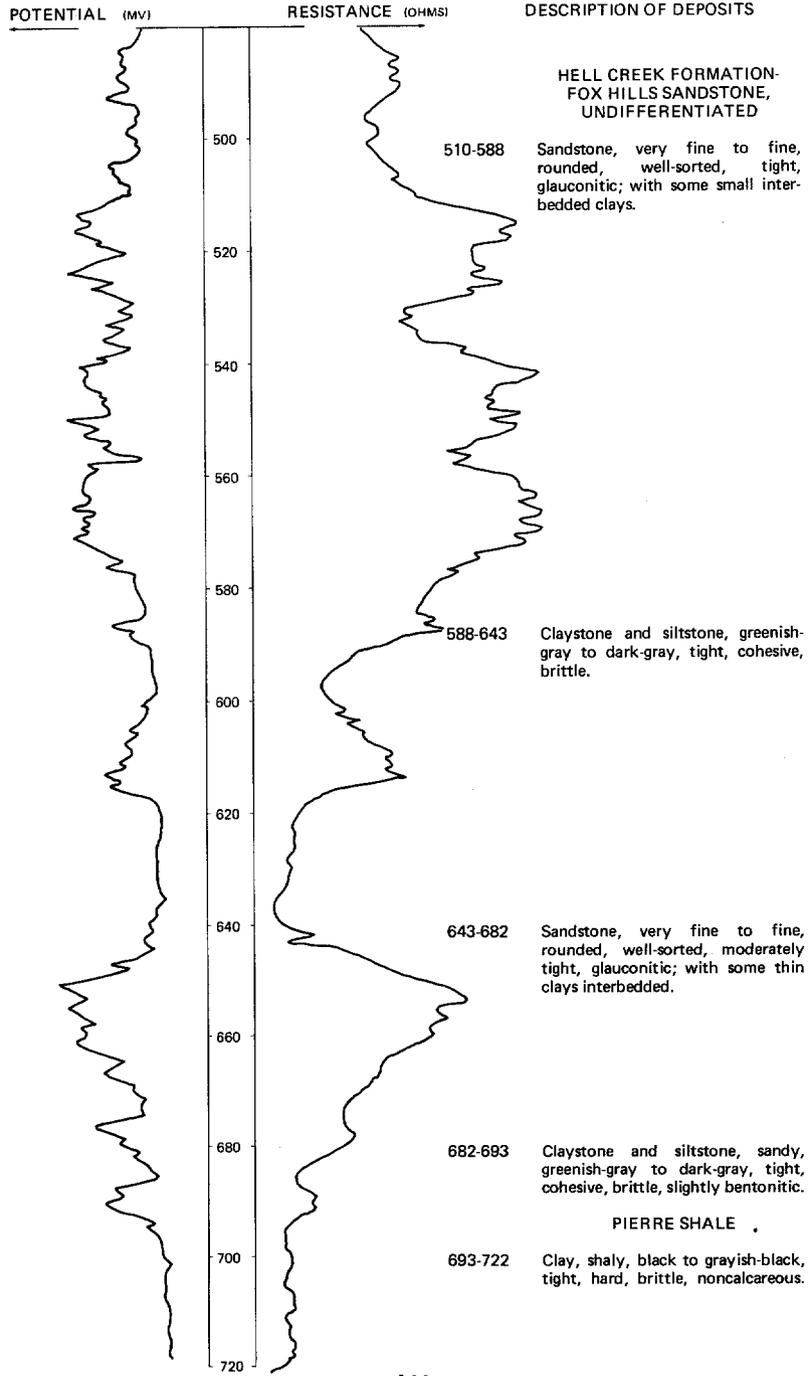


LOCATION: 146-077-36CCC1, 2

DATE DRILLED: 10/19/77

ALTITUDE: 2020
(FT, NGVD)

DEPTH: 722
(FT)

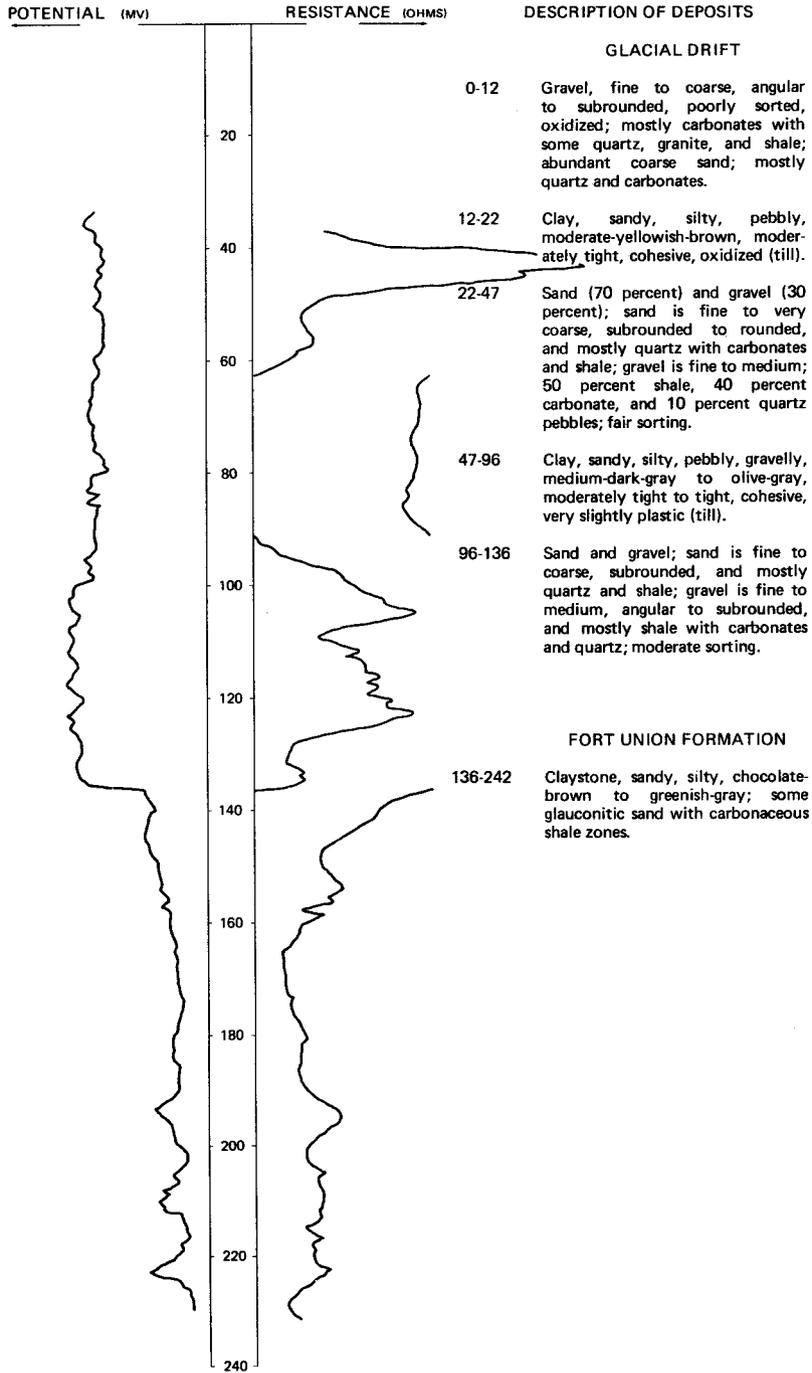


LOCATION: 146-078-07AAA

DATE DRILLED: 10/26/77

ALTITUDE: 2010
(FT. NGVD)

DEPTH: 242
(FT)

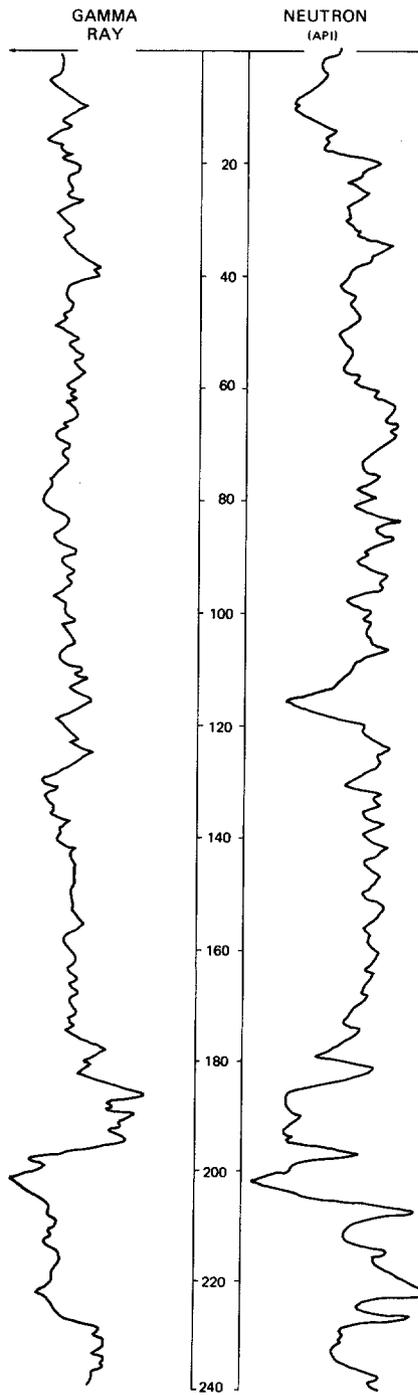


LOCATION: 146-078-10AAD

DATE DRILLED: 6/29/78

ALTITUDE: 1930
(FT, NGVD)

DEPTH: 335
(FT)



DESCRIPTION OF DEPOSITS

GLACIAL DRIFT

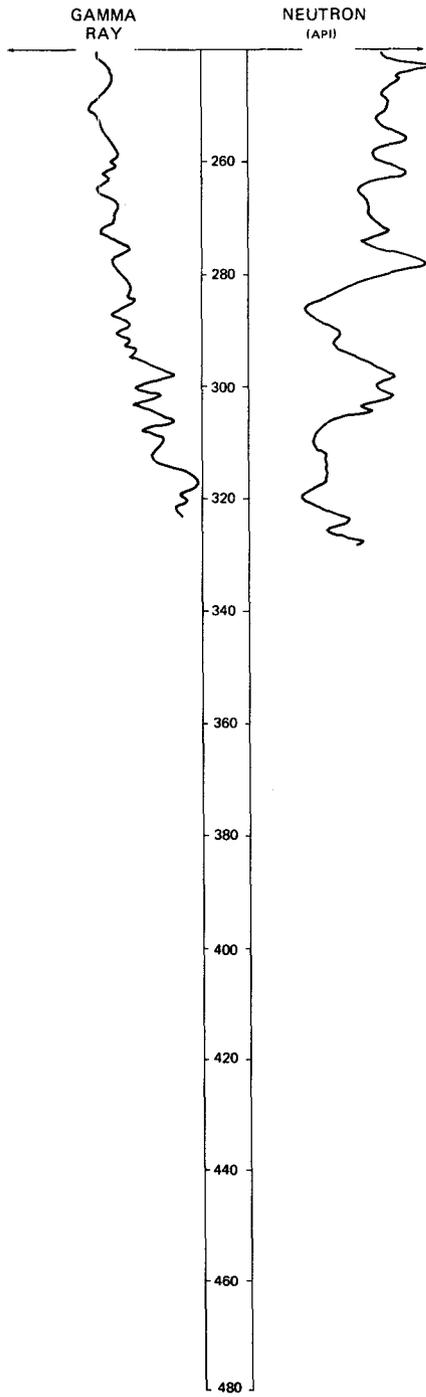
- 0-15 Clay, sandy, silty, pebbly, dusky-yellow, moderately tight to tight, cohesive, very slightly plastic, oxidized (till).
- 15-197 Clay, sandy, silty, pebbly, slightly bouldery, medium-dark-gray to olive-gray, tight (till).
- 197-228 Gravel, fine to coarse, angular to subrounded; mostly carbonates and shale; some granitics and lignite; some coarse to very coarse sand.
- 228-305 Clay, sandy, silty, pebbly, olive-gray, tight, cohesive, very slightly plastic (till).

LOCATION: 146-078-10AAD

DATE DRILLED: 6/29/78

ALTITUDE: 1930
(FT, NGVD)

DEPTH: 335
(FT)



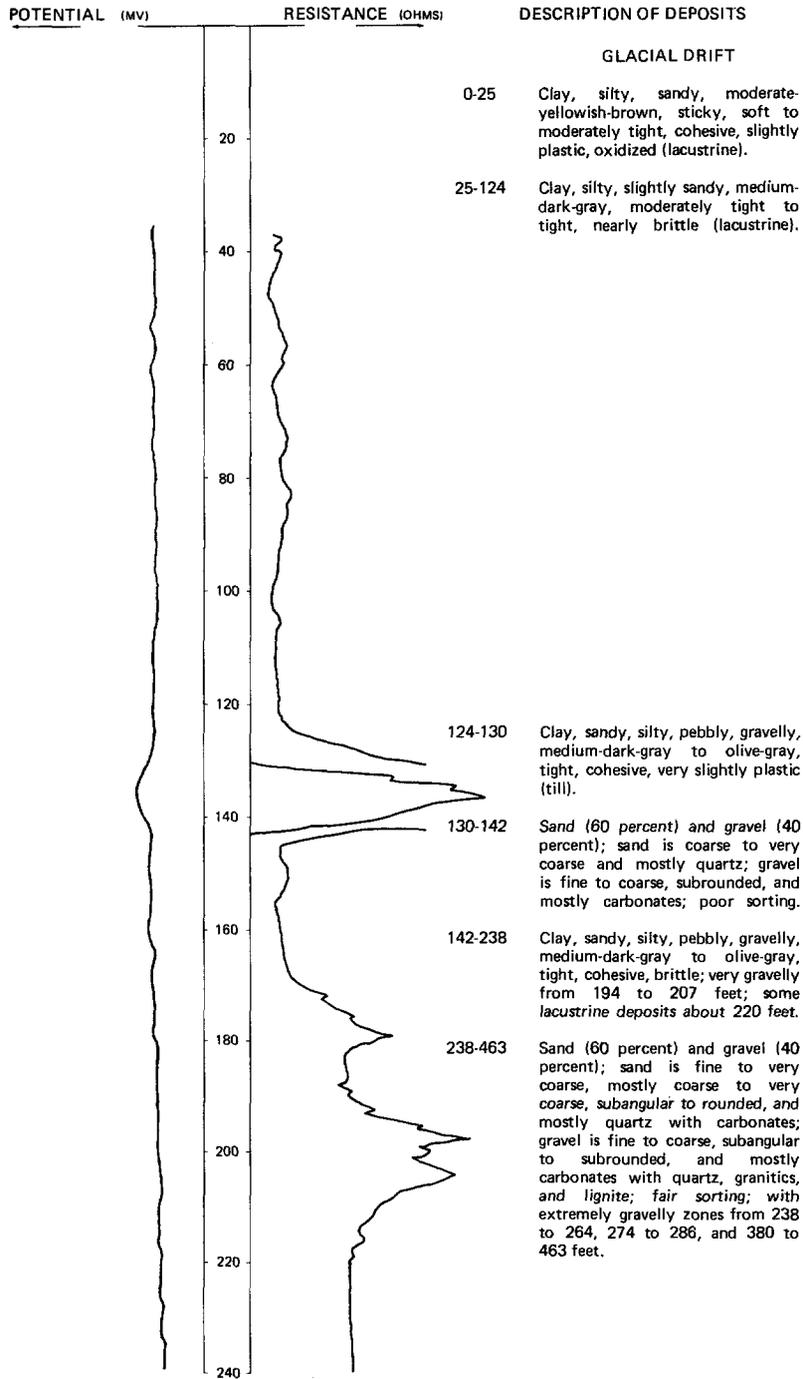
DESCRIPTION OF DEPOSITS

HELL CREEK FORMATION-
FOX HILLS SANDSTONE,
UNDIFFERENTIATED

305-335 Claystone, quite sandy, tight,
cohesive, brittle; medium light gray
to greenish gray with chocolate-
brown carbonaceous streaks.

LOCATION: 146-078-148CB
 ALTITUDE: 1935
 (FT, NGVD)

DATE DRILLED: 10/25/77
 DEPTH: 482
 (FT)

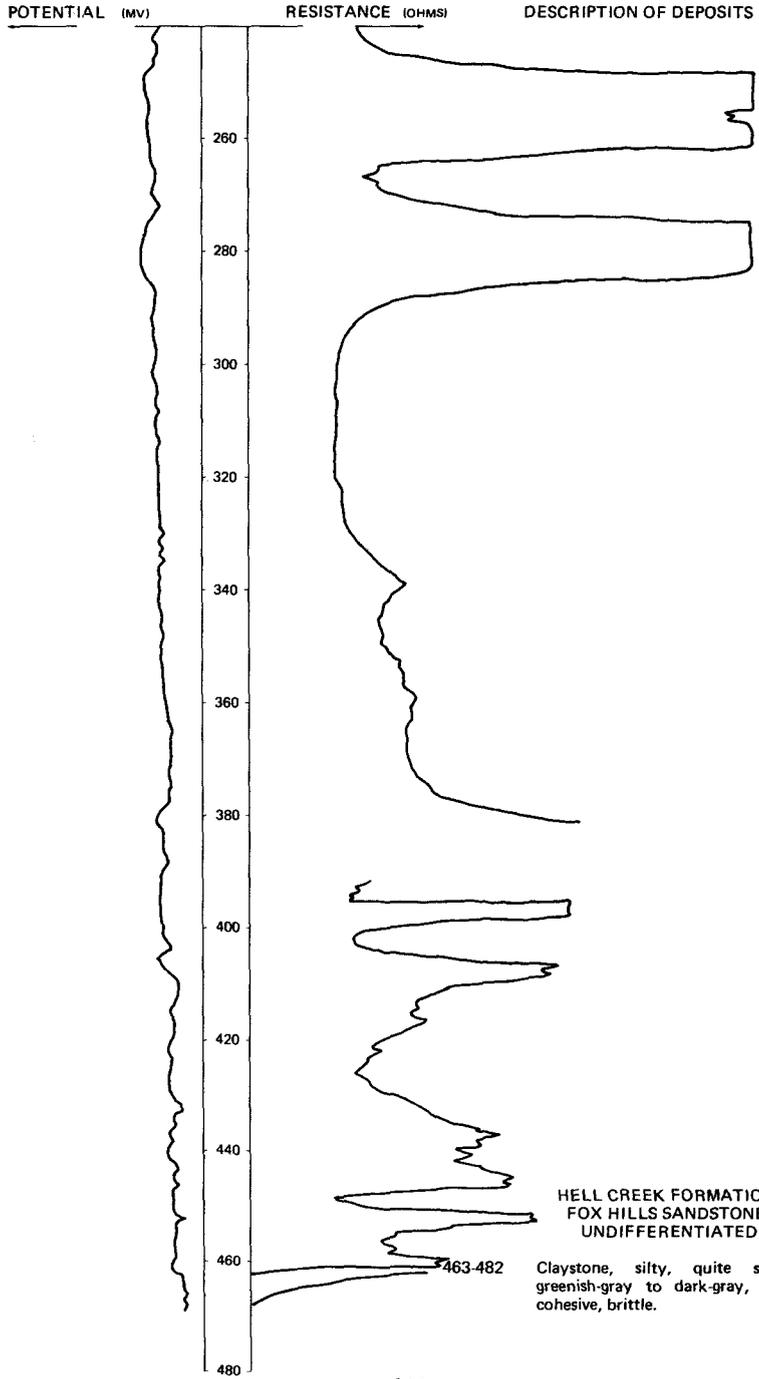


LOCATION: 146-078-14BCB

DATE DRILLED: 10/25/77

ALTITUDE: 1935
(FT, NGVD)

DEPTH: 482
(FT)

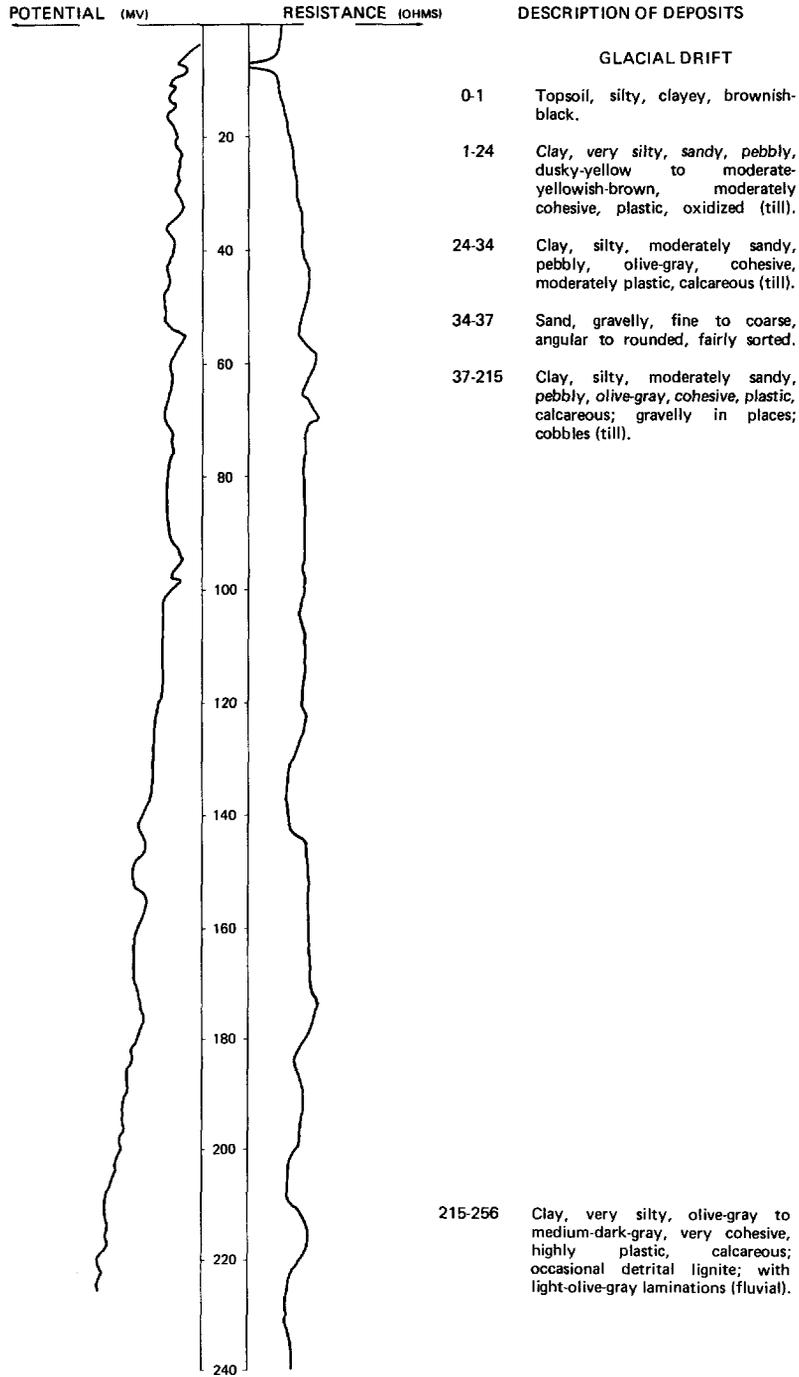


LOCATION: 146-078-17CCC

DATE DRILLED: 5/13/71

ALTITUDE: 1875
(FT, NGVD)

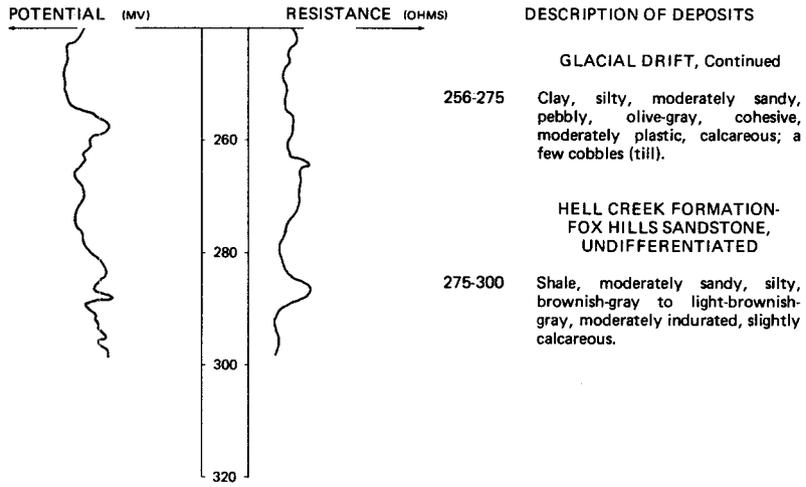
DEPTH: 300
(FT)



NDSWC 5920, Continued

LOCATION: 146-078-17CCC
 ALTITUDE: 1875
 (FT, NGVD)

DATE DRILLED: 5/13/71
 DEPTH: 300
 (FT)



146-078-18CDD
 (Log from Broneske Well Drilling)

Date drilled: 10/13/72

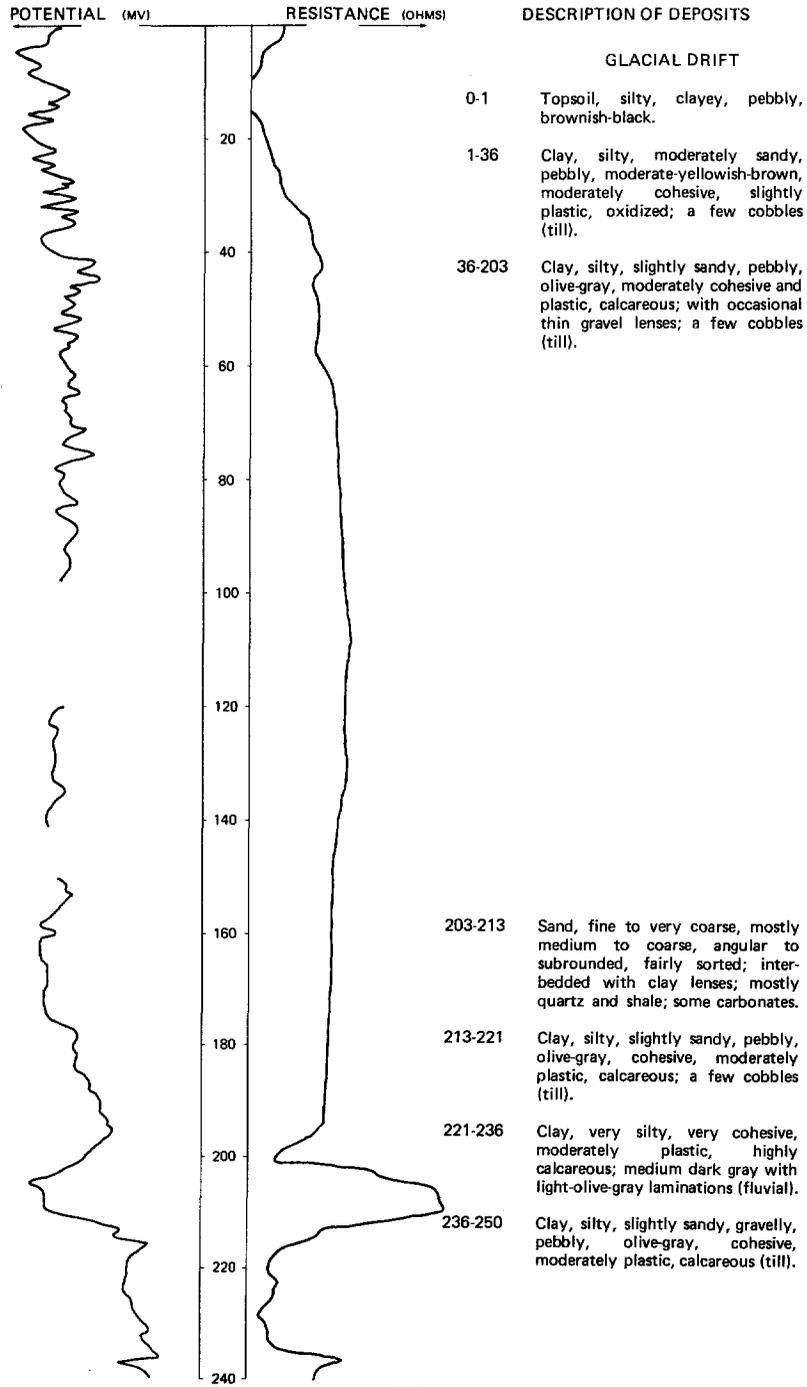
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	2	2
	Dirt; clay, gray; and rock-----	21	23
	Sand, gravel, and water-----	2	25
	Clay, gray, and gravel-----	43	68
	Sand, fine, and water-----	18	86
	Clay, gray; sand; and gravel-----	199	285
	Sand and gravel; fine sand on top of coarser sand and gravel, then clay-----	3	288

LOCATION: 146-078-26DDA

DATE DRILLED: 9/17/70

ALTITUDE: 1940
(FT, NGVD)

DEPTH: 280
(FT)

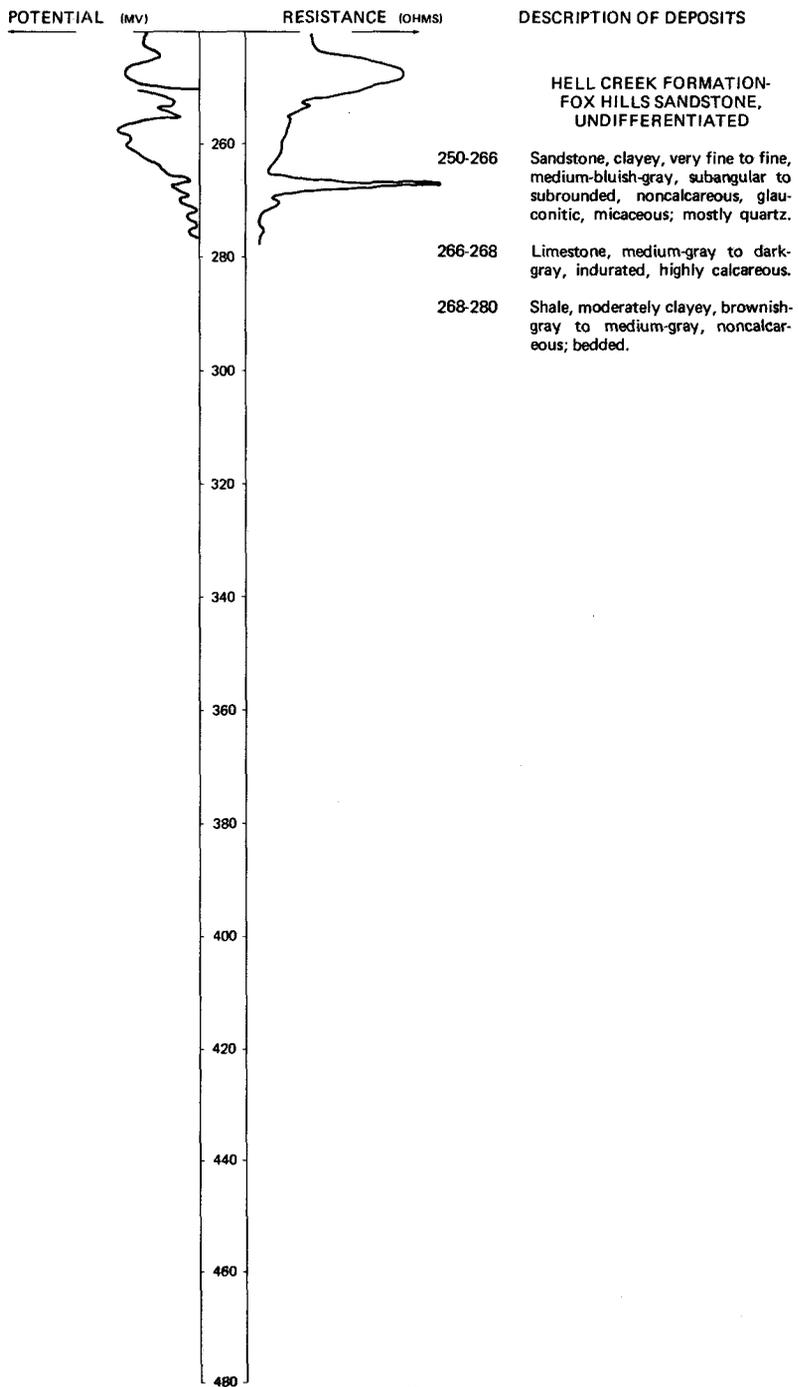


LOCATION: 146-078-26DDA

DATE DRILLED: 9/17/70

ALTITUDE: 1940
(FT, NGVD)

DEPTH: 280
(FT)

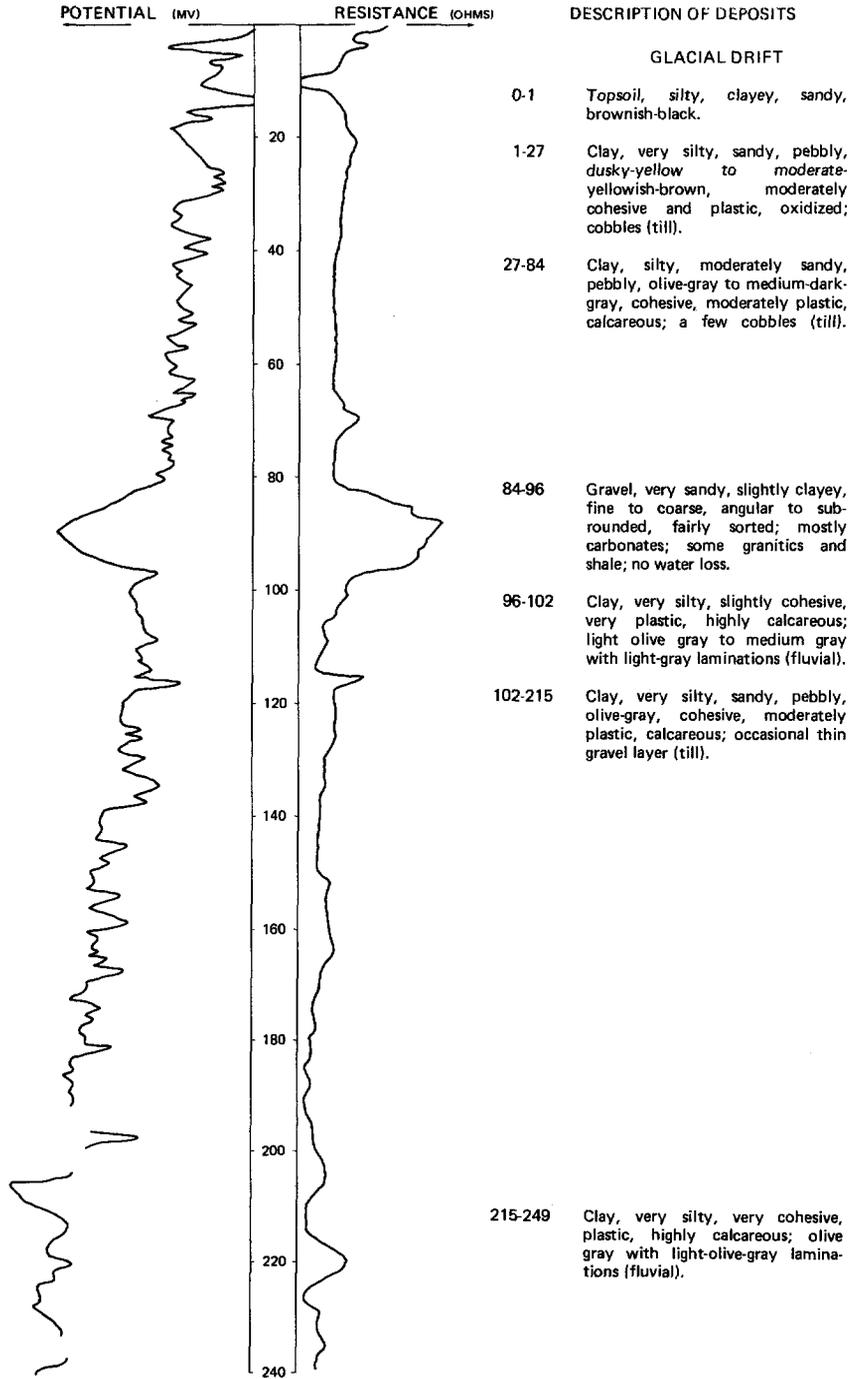


LOCATION: 146-078-30AAA

DATE DRILLED: 5/12/71

ALTITUDE: 1875
(FT, NGVD)

DEPTH: 300
(FT)

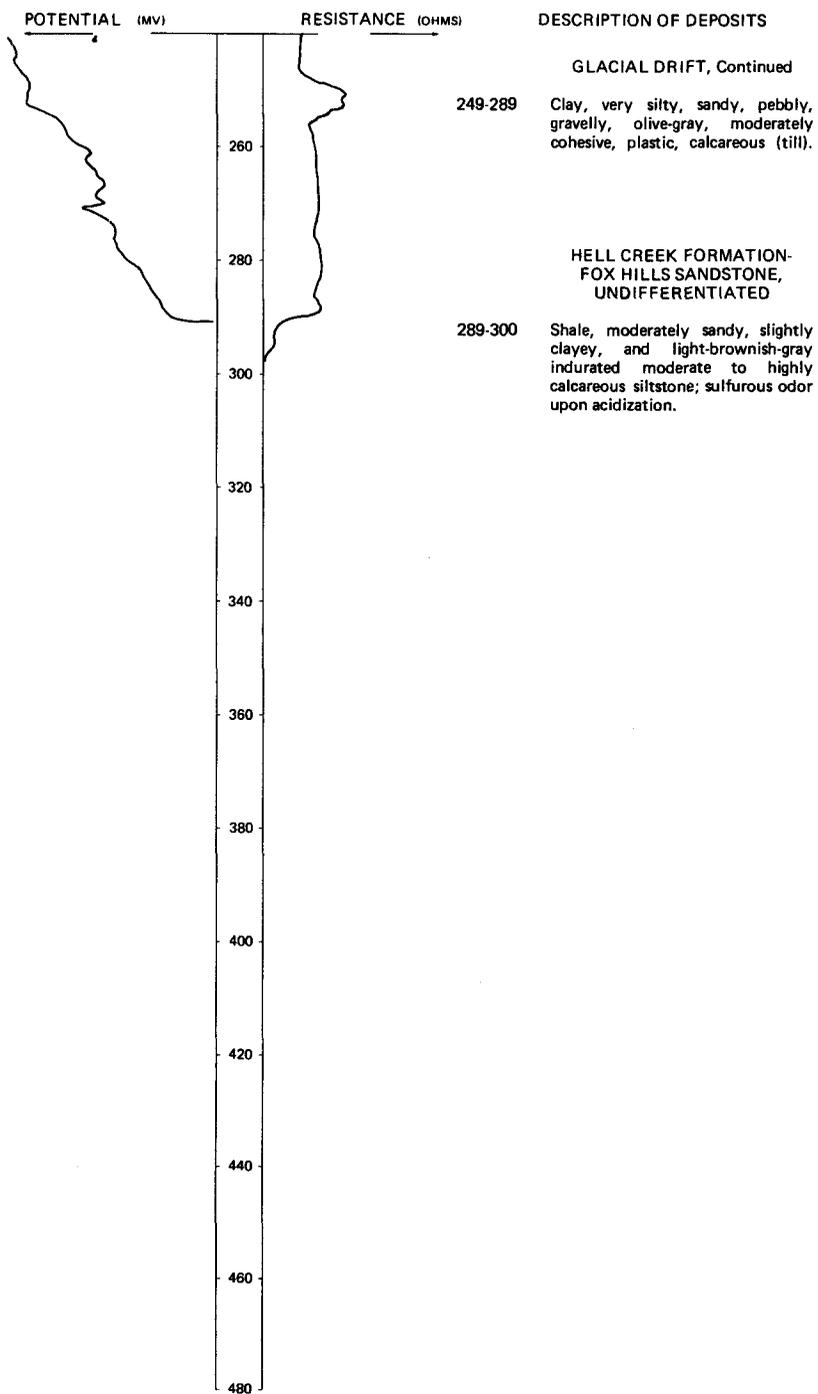


LOCATION: 146-078-30AAA

DATE DRILLED: 5/12/71

ALTITUDE: 1875
(FT, NGVD)

DEPTH: 300
(FT)

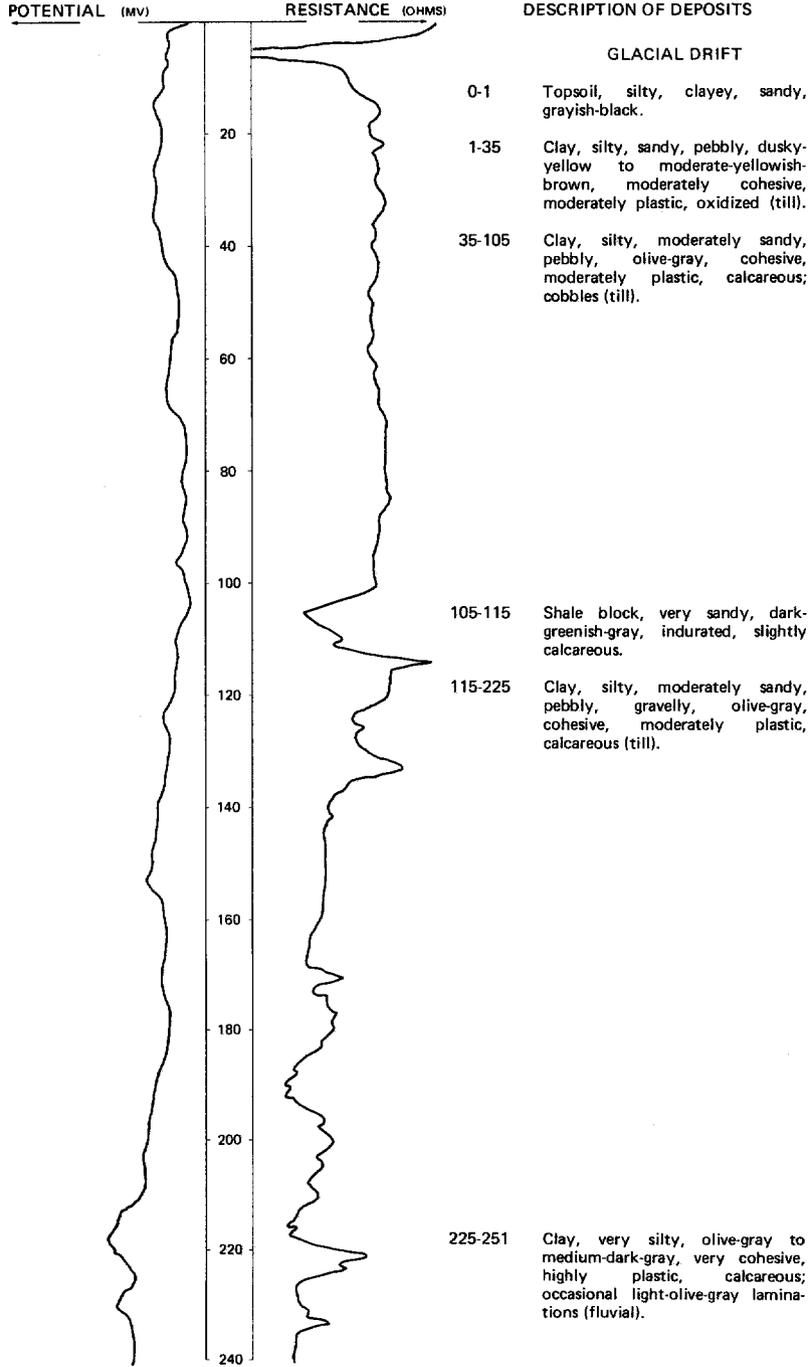


LOCATION: 146-078-30DDD

DATE DRILLED: 5/13/71

ALTITUDE: 1895
(FT, NGVD)

DEPTH: 500
(FT)



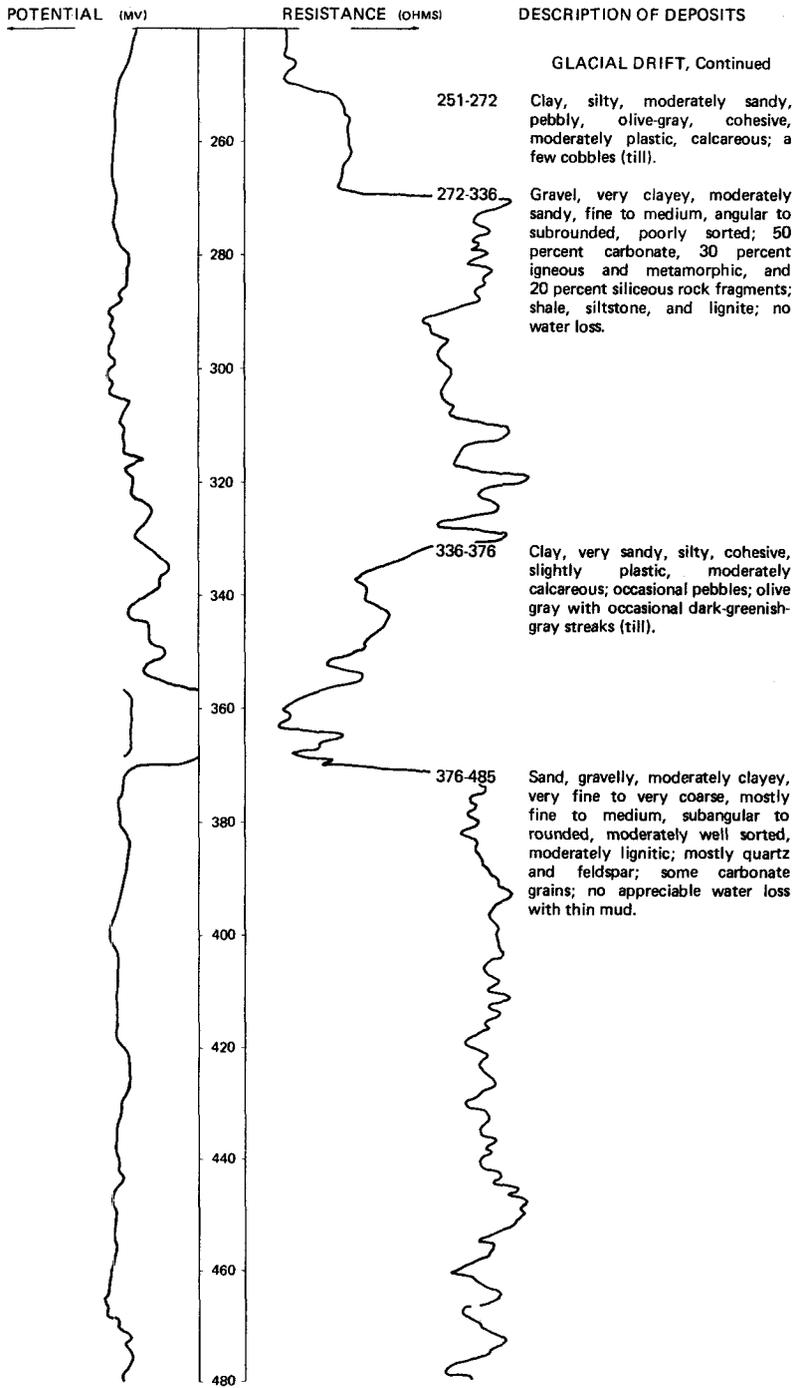
NDSWC 5921, Continued

LOCATION: 146-078-30DDD

DATE DRILLED: 5/13/71

ALTITUDE: 1895
(FT, NGVD)

DEPTH: 500
(FT)



NDSWC 5921, Continued

LOCATION: 146-078-30DDD

DATE DRILLED: 5/13/71

ALTITUDE: 1895
(FT, NGVD)

DEPTH: 500
(FT)

POTENTIAL (MV)	RESISTANCE (OHMS)	DESCRIPTION OF DEPOSITS
		GLACIAL DRIFT, Continued
	500	485-495 Gravel and cobbles, sandy, fine to coarse, angular to well-rounded, fairly sorted; taking some water.
	520	HELL CREEK FORMATION- FOX HILLS SANDSTONE, UNDIFFERENTIATED
	540	495-500 Shale, clayey, medium-dark-gray to dark-gray, well-indurated, non-calcareous.

147-074-04BDD
(Log from Russell Drilling Co.)

Altitude: 1900 feet

Date drilled: 10/19/72

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil	1	1
	Till; clay; yellow	22	23
	Till; clay; blue	167	190
	Shale, soft	80	270
	Sand, fine, blue	25	295

NDSWC 5350

LOCATION: 147-074-19CCC

DATE DRILLED: 7/26/78

ALTITUDE: 1900
(FT, NGVD)

DEPTH: 695
(FT)

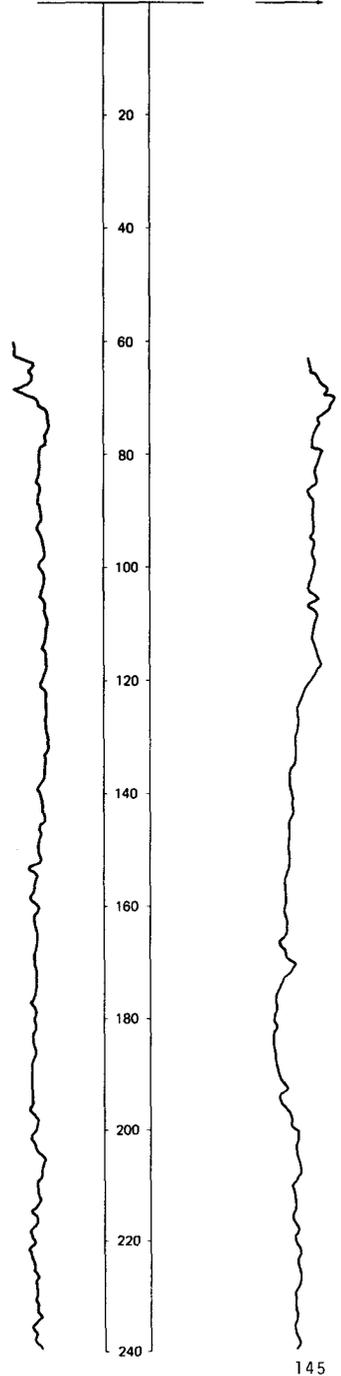
POTENTIAL (MV)

RESISTANCE (OHMS)

DESCRIPTION OF DEPOSITS

GLACIAL DRIFT

- 0-23 Clay, sandy, silty, pebbly, moderate-yellowish-brown, moderately tight to tight, cohesive, slightly plastic, oxidized (till).
- 23-482 Clay, sandy, silty, pebbly, medium-dark-gray to olive-gray, tight (till).



145

NDSWC 5350, Continued

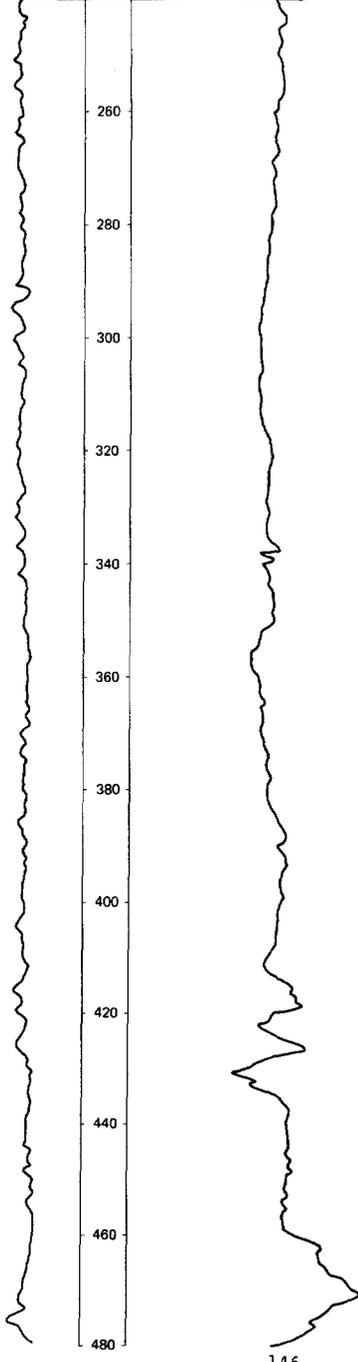
LOCATION: 147-074-19CCC

DATE DRILLED: 7/26/78

ALTITUDE: 1900
(FT, NGVD)

DEPTH: 695
(FT)

POTENTIAL (MV) RESISTANCE (OHMS) DESCRIPTION OF DEPOSITS

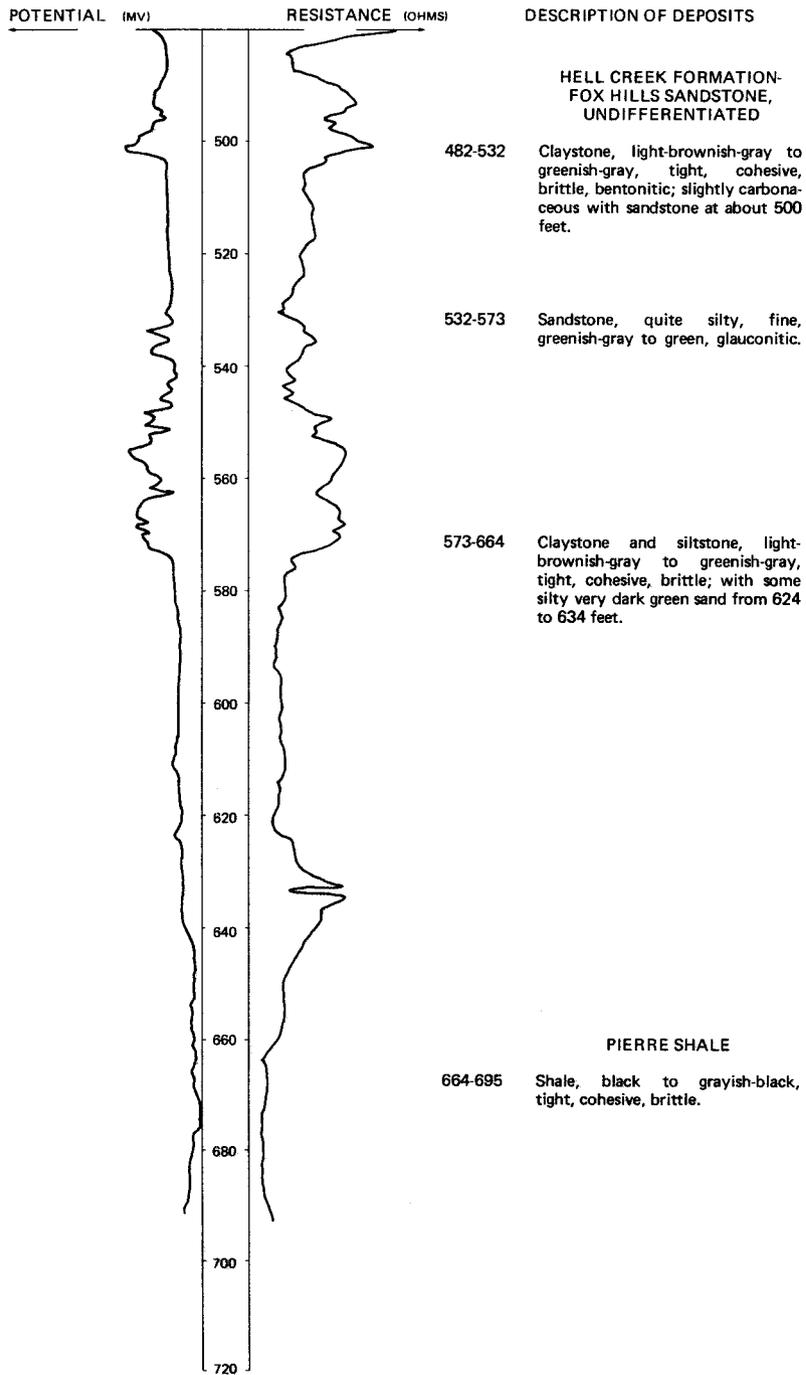


LOCATION: 147-074-19CCC

DATE DRILLED: 7/26/78

ALTITUDE: 1900
(FT, NGVD)

DEPTH: 695
(FT)

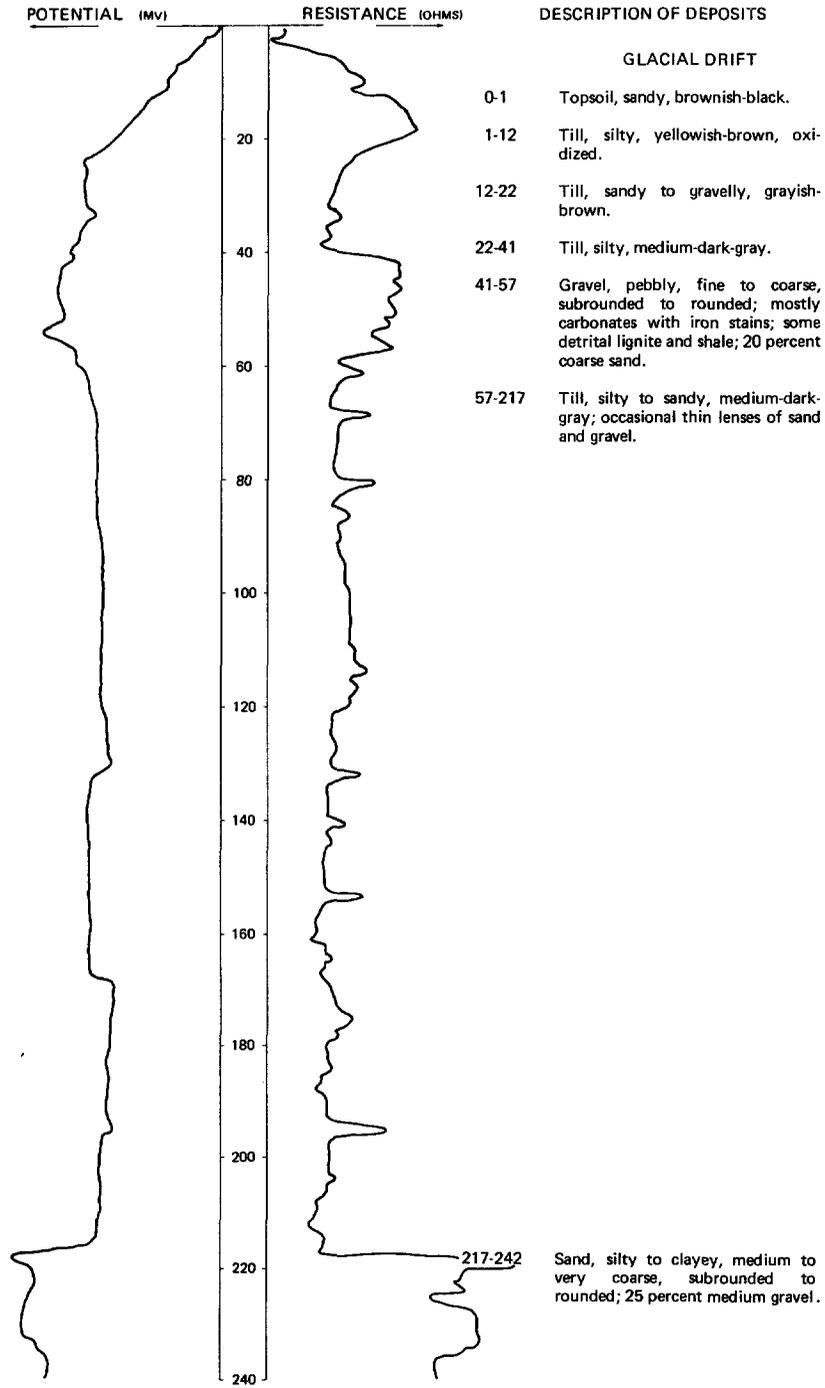


LOCATION: 147-074-27AAA

DATE DRILLED: 8/24/78

ALTITUDE: 1970
(FT, NGVD)

DEPTH: 400
(FT)

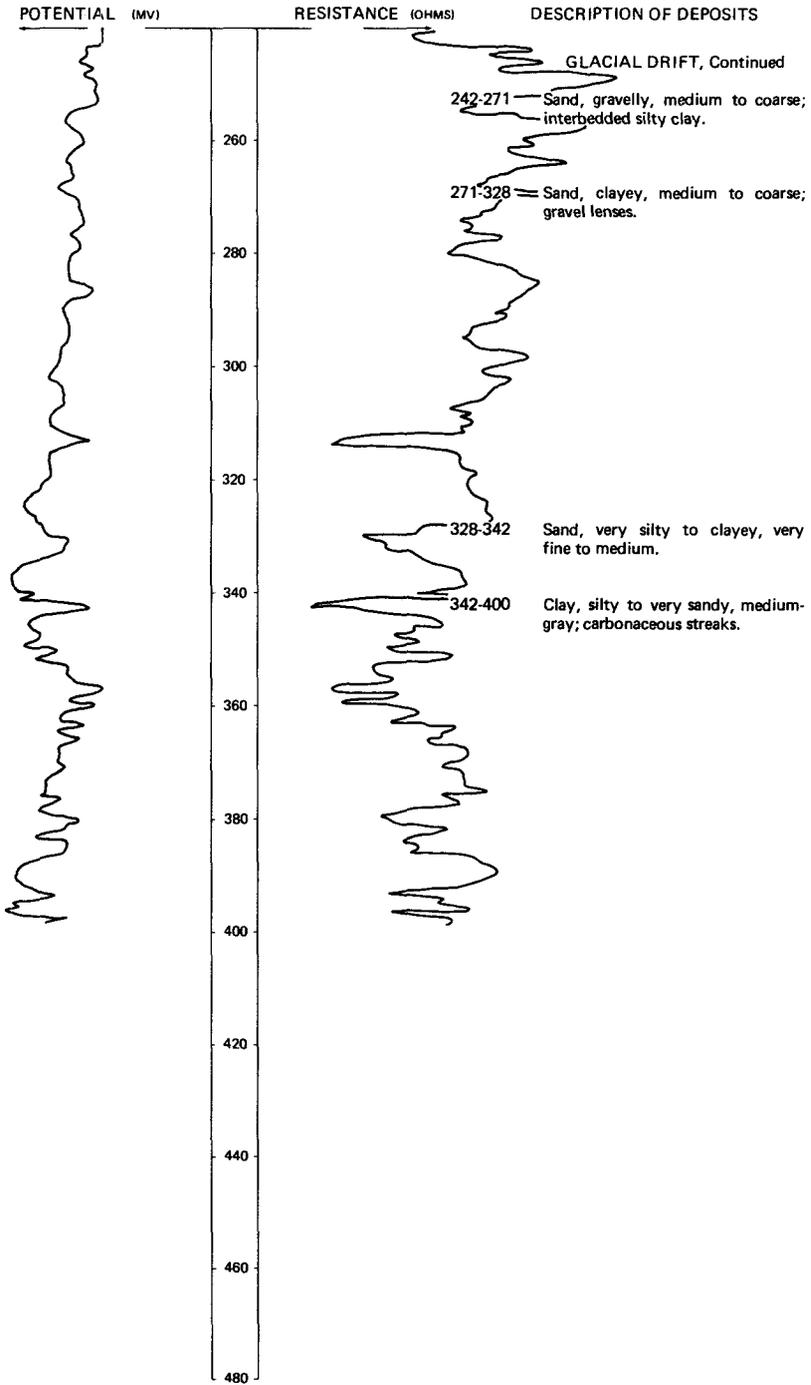


LOCATION: 147-074-27AAA

DATE DRILLED: 8/24/78

ALTITUDE: 1970
(FT, NGVD)

DEPTH: 400
(FT)



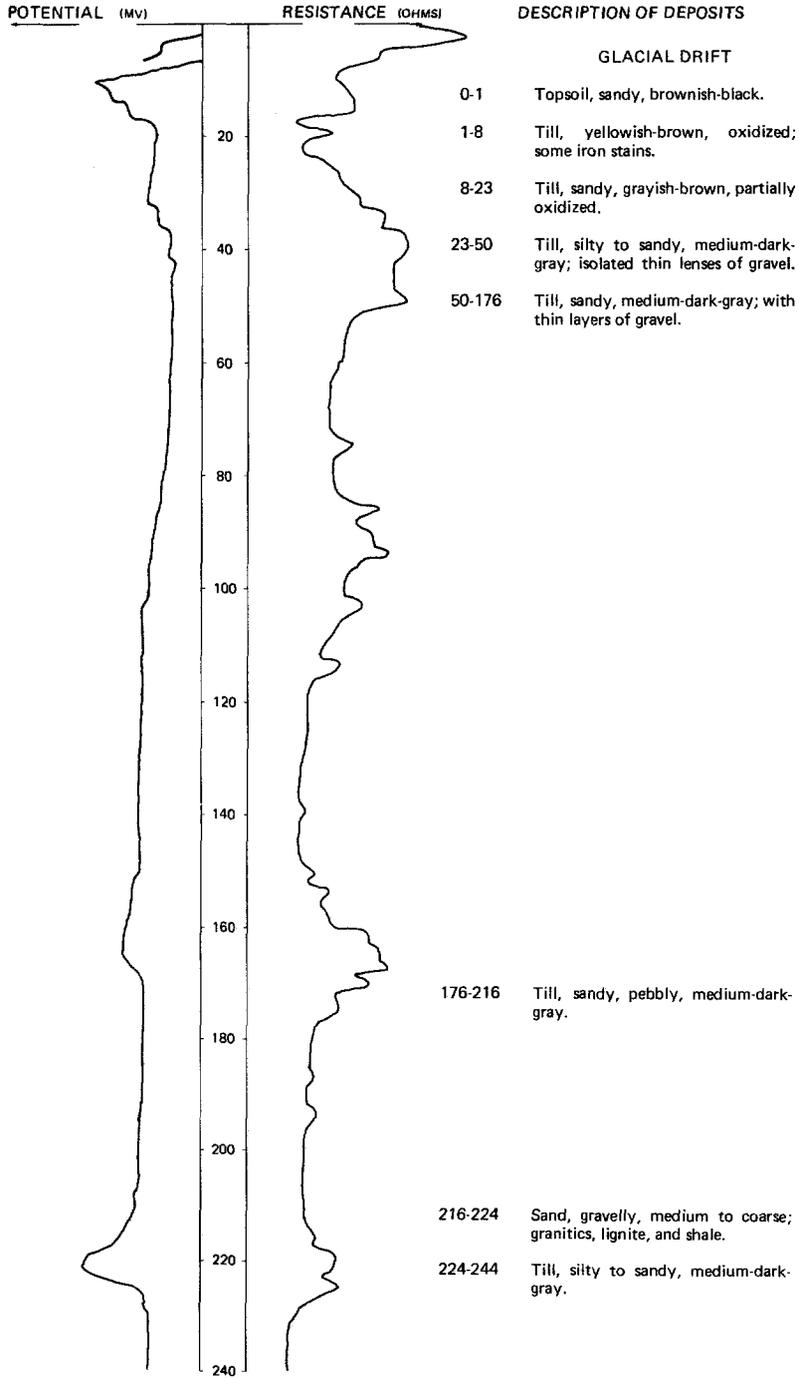
NDSWC 10245

LOCATION: 147-074-34DDD

DATE DRILLED: 8/30/78

ALTITUDE: 1976
(FT, NGVD)

DEPTH: 400
(FT)

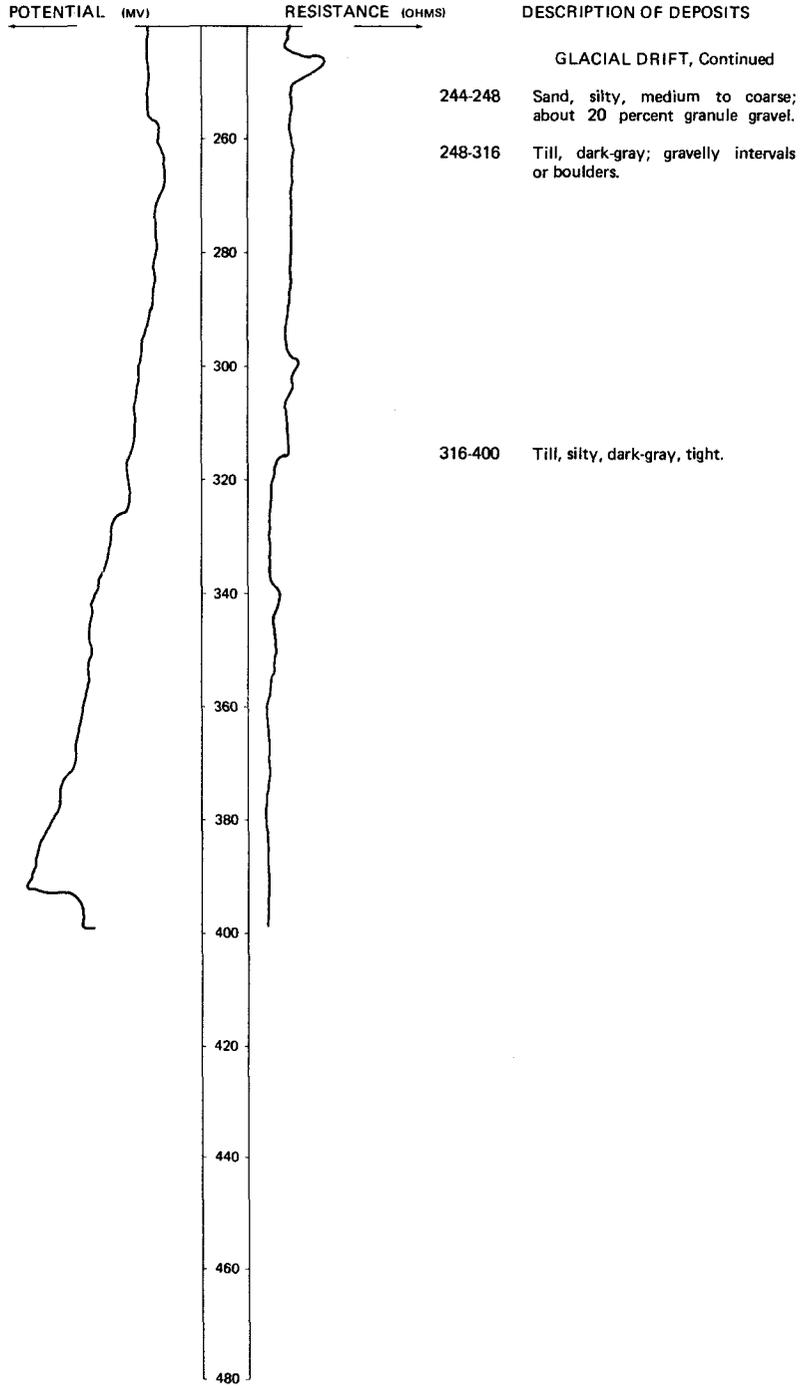


LOCATION: 147-074-34DDD

DATE DRILLED: 8/30/78

ALTITUDE: 1976
(FT, NGVD)

DEPTH: 400
(FT)



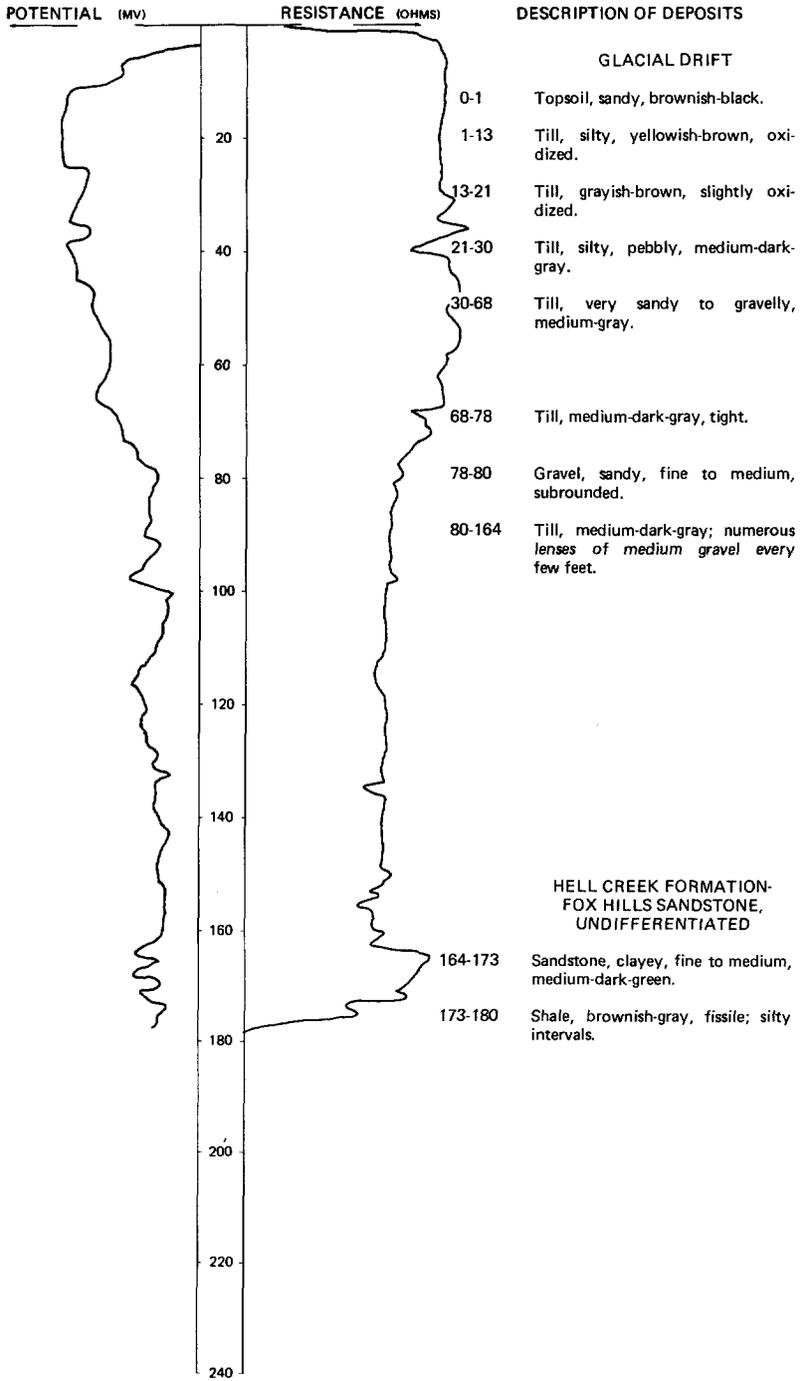
NDSWC 10237

LOCATION: 147-075-01DDD

DATE DRILLED: 8/24/78

ALTITUDE: 1850
(FT, NGVD)

DEPTH: 180
(FT)

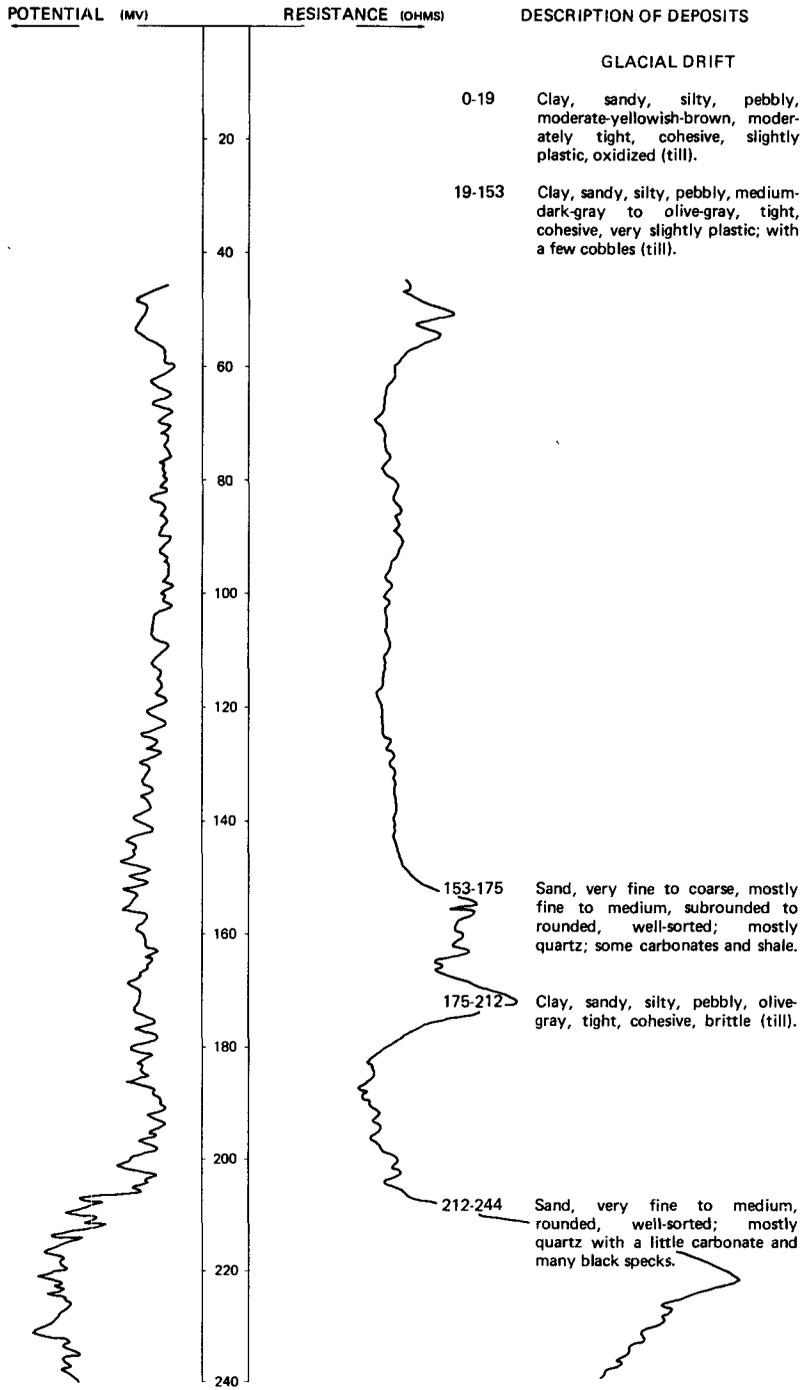


LOCATION: 147-075-03CCC1, 2

DATE DRILLED: 11/07/77

ALTITUDE: 1850
(FT, NGVD)

DEPTH: 582
(FT)

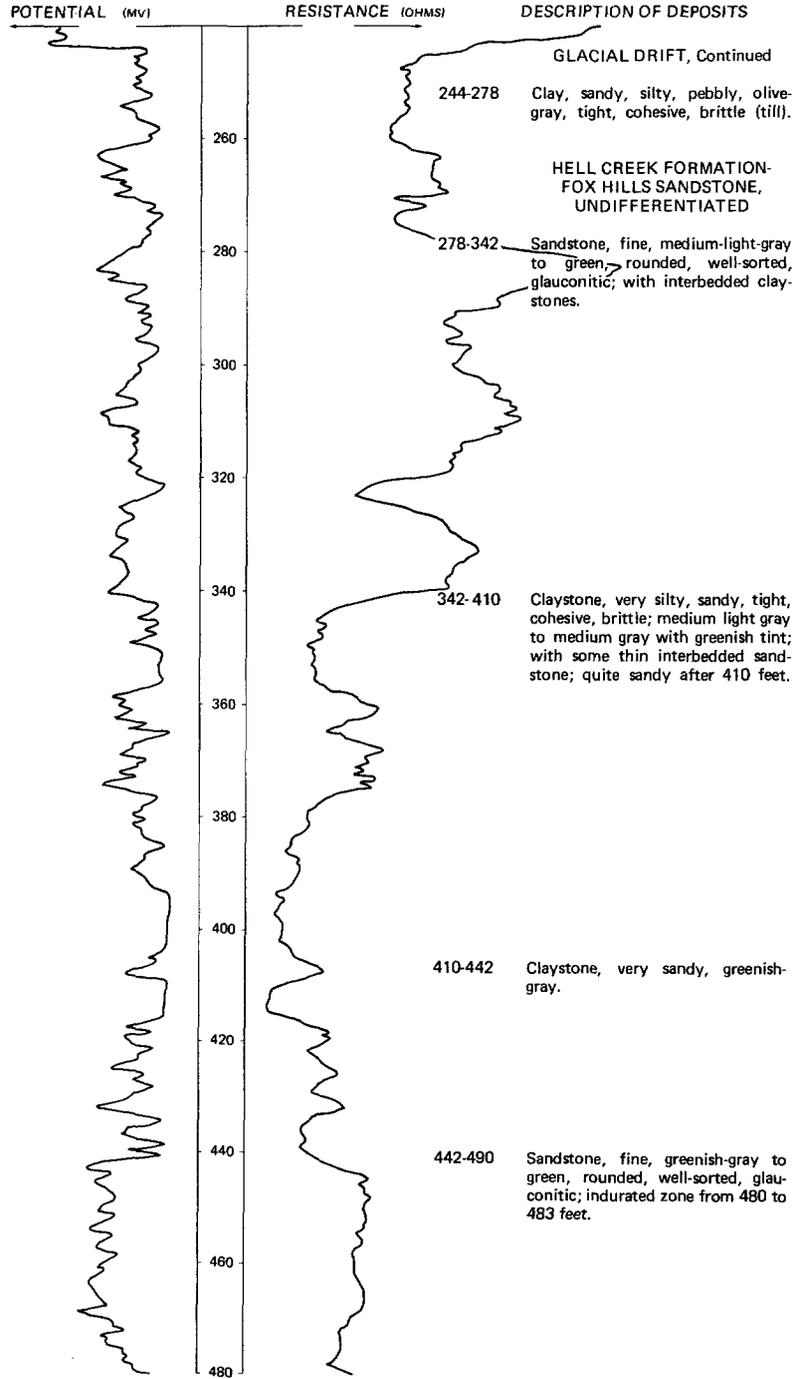


LOCATION: 147-075-03CCC1, 2

DATE DRILLED: 11/07/77

ALTITUDE: 1850
(FT, NGVD)

DEPTH: 582
(FT)



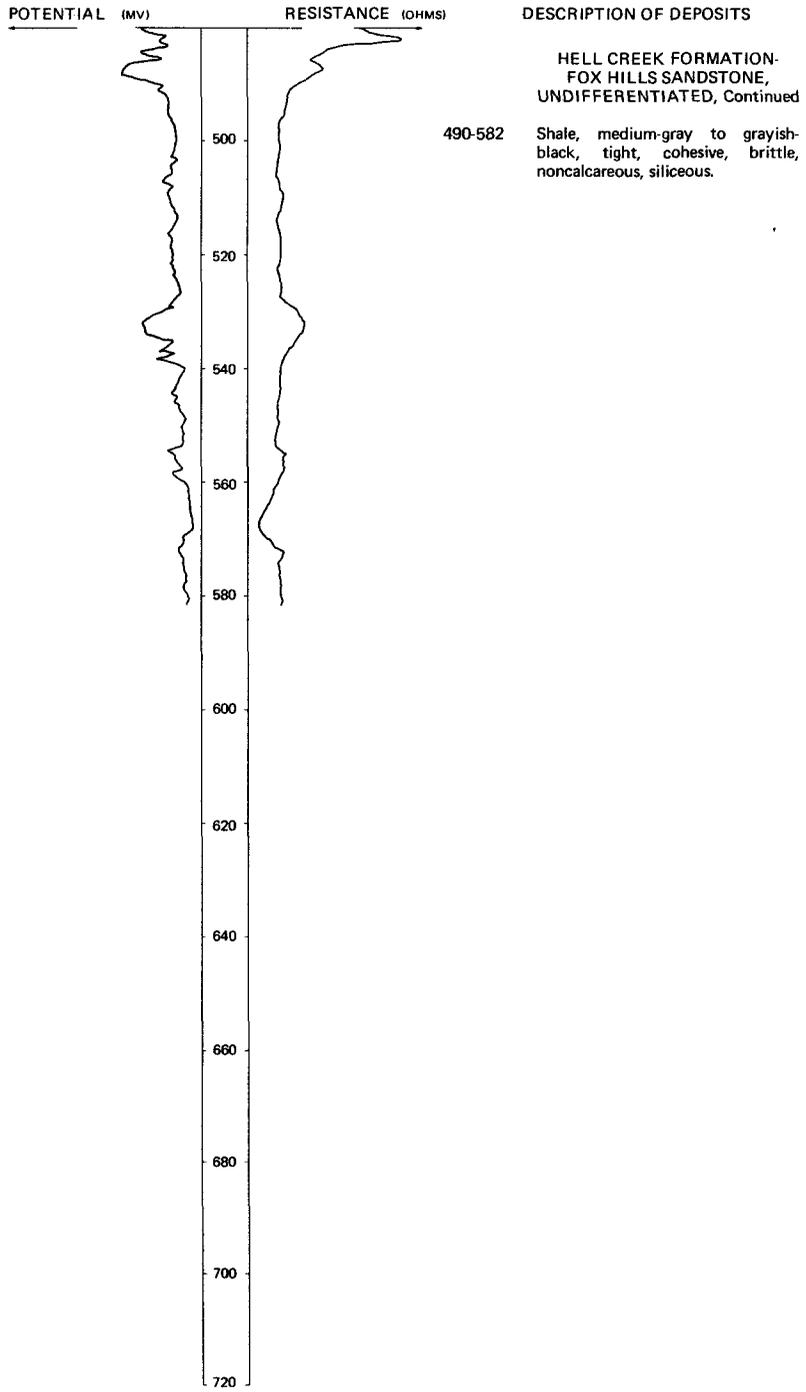
NDSWC 5267, 5267A, Continued

LOCATION: 147-075-03CCC1, 2

DATE DRILLED: 11/07/77

ALTITUDE: 1850
(FT, NGVD)

DEPTH: 582
(FT)



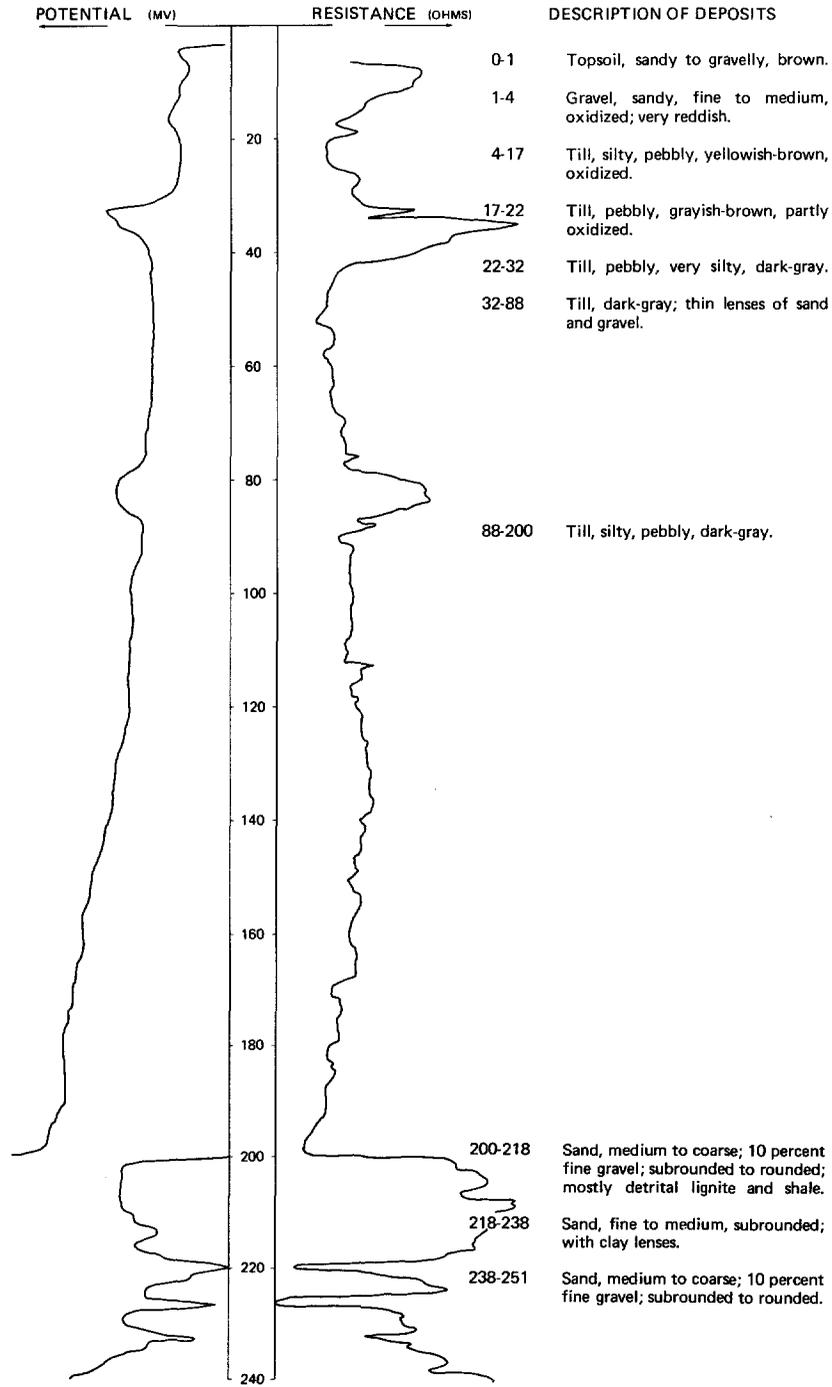
NDSWC 11013

LOCATION: 147-075-15AAA

DATE DRILLED: 8/07/79

ALTITUDE: 1848
(FT. NGVD)

DEPTH: 275
(FT)

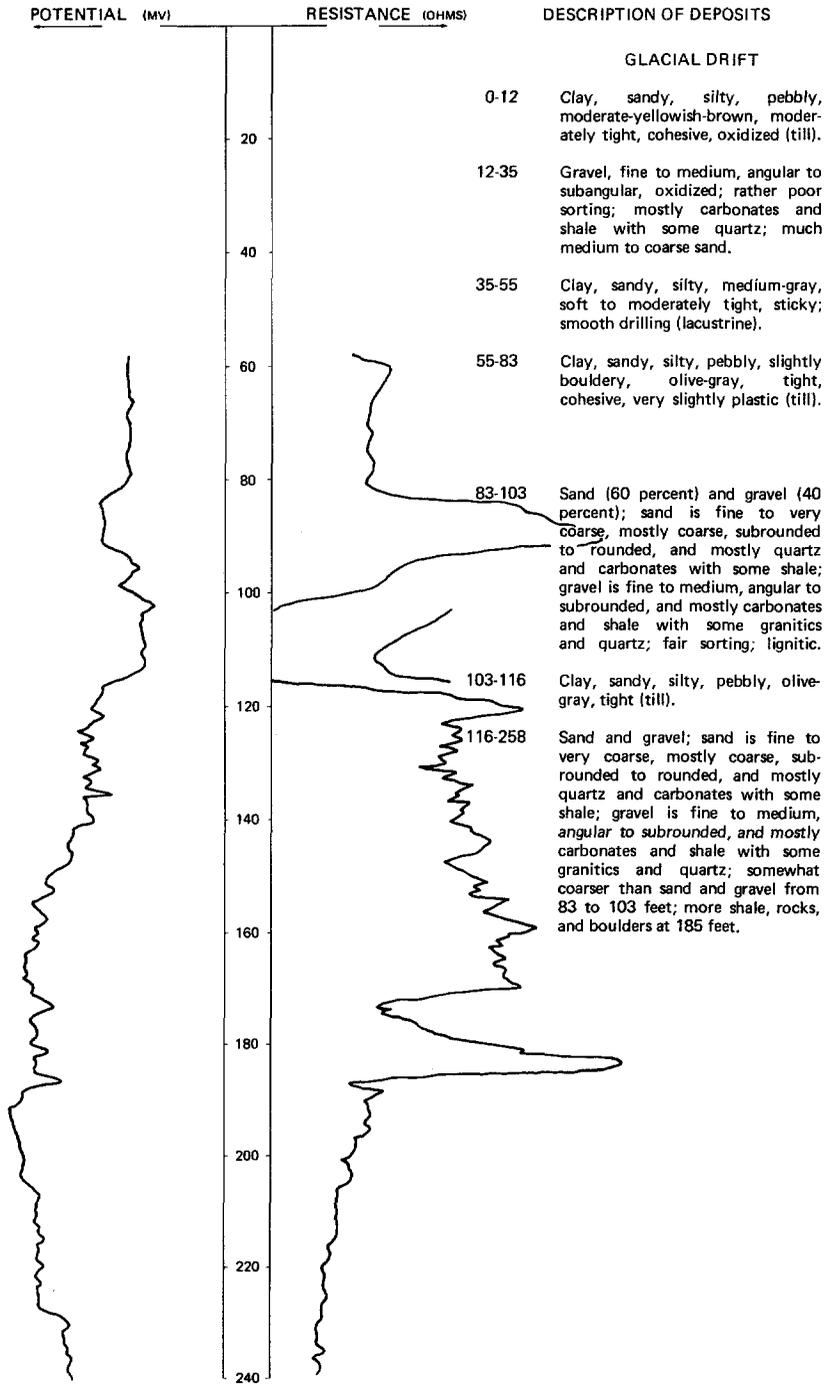


LOCATION: 147-075-17DDD

DATE DRILLED: 7/24/78

ALTITUDE: 1990
(FT, NGVD)

DEPTH: 535
(FT)

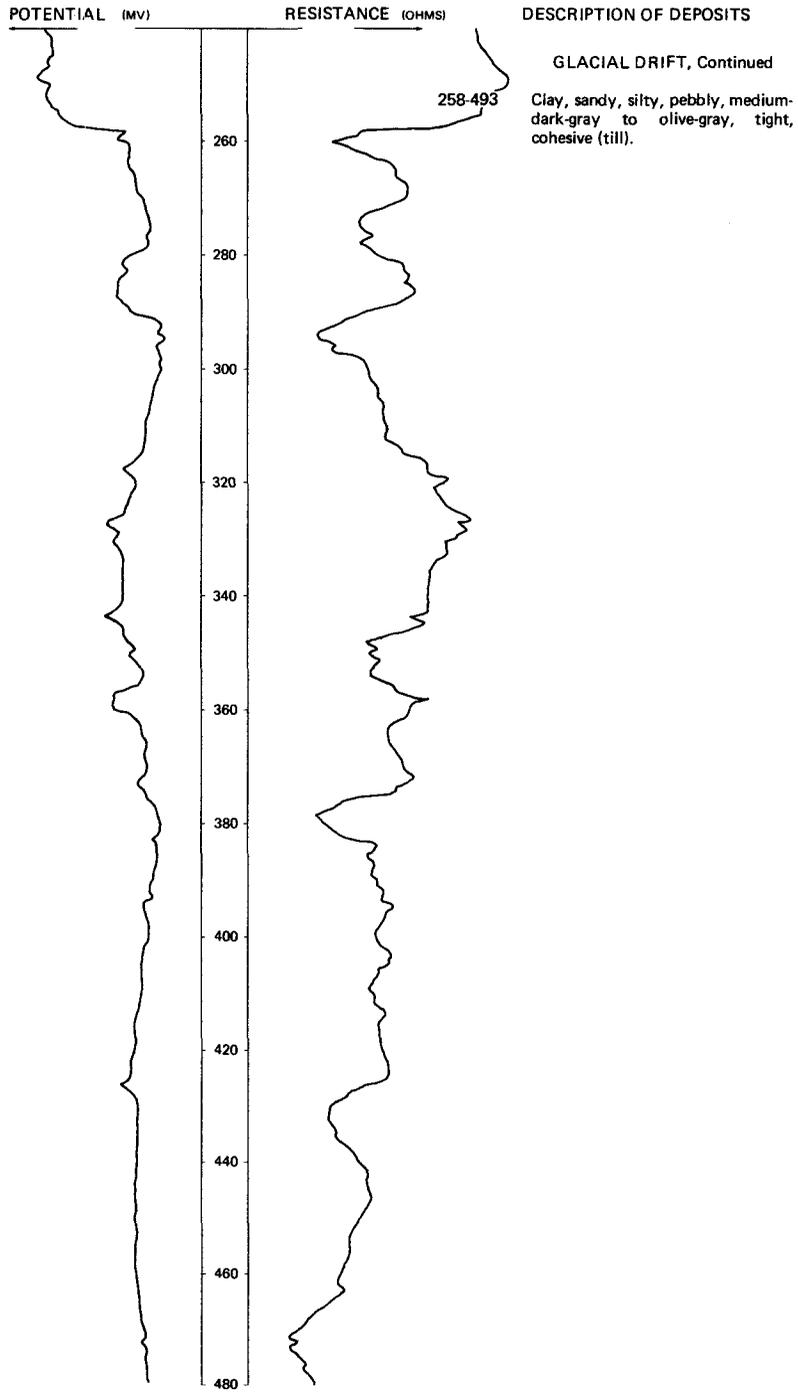


LOCATION: 147-075-17DDD

DATE DRILLED: 7/24/78

ALTITUDE: 1990
(FT, NGVD)

DEPTH: 535
(FT)

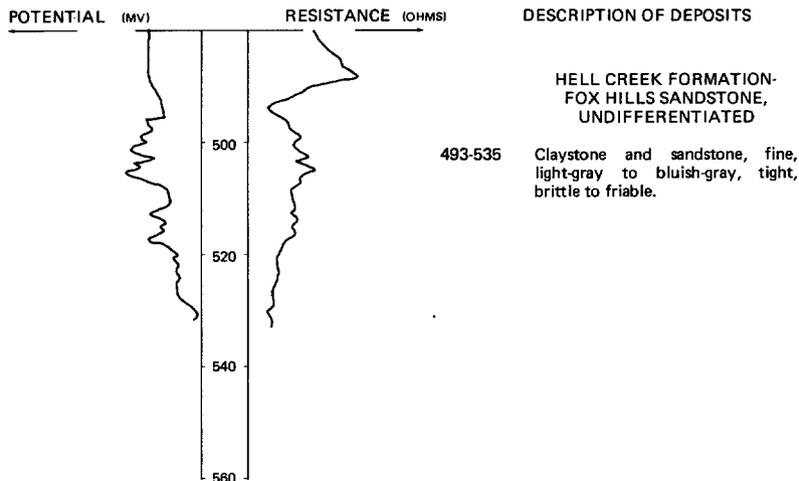


LOCATION: 147-075-17DDD

DATE DRILLED: 7/24/78

ALTITUDE: 1990
(FT, NGVD)

DEPTH: 535
(FT)



147-075-20ADC
(Log from Russell Drilling Co.)

Altitude: 2000 feet

Date drilled: 7/18/72

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil	1	1
	Till; clay; brown	33	34
	Clay, blue; with pebbles and streaks of lignite	161	195
	Shale	217	412
	Sand, fine, blue	24	436

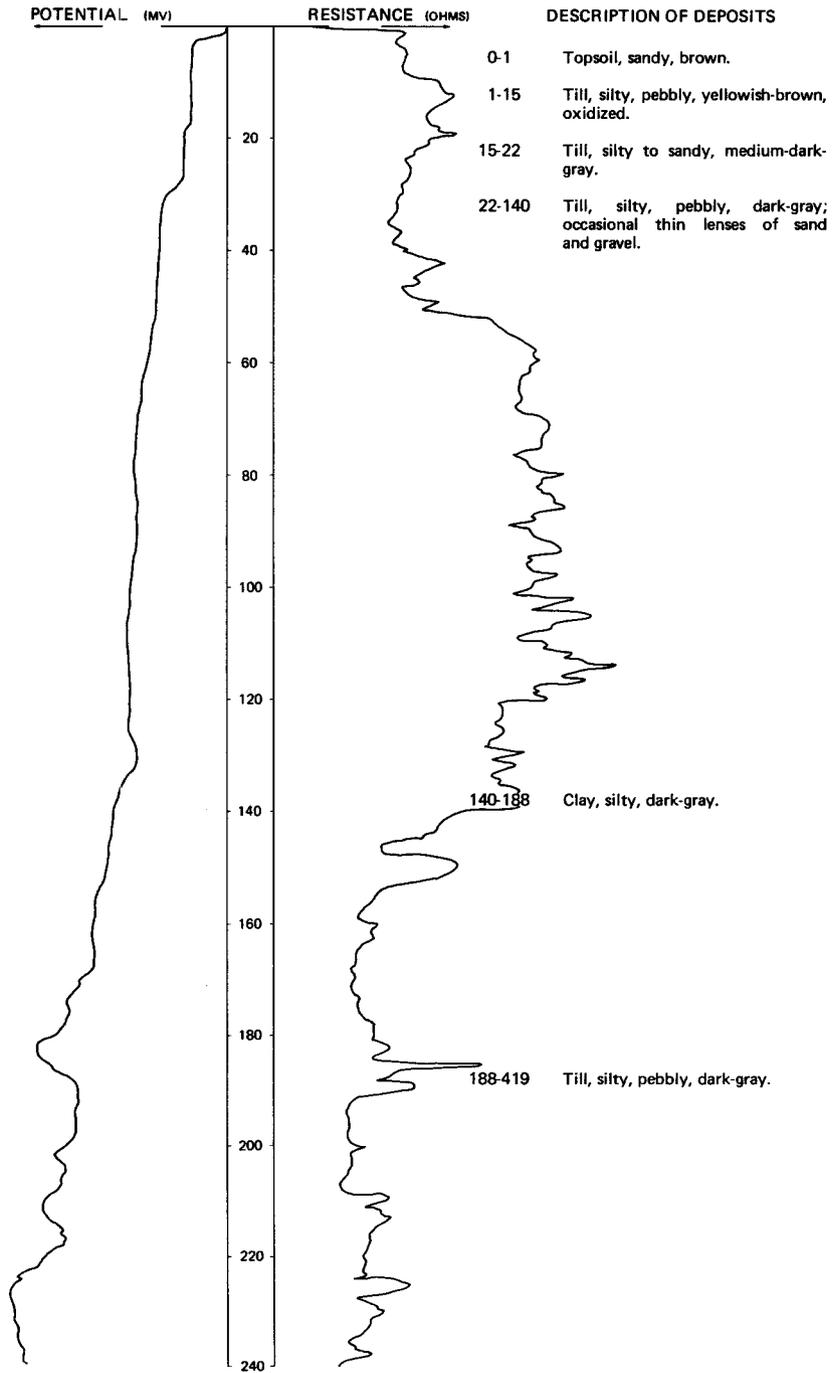
NDSWC 11014

LOCATION: 147-075-24AAA

DATE DRILLED: 8/08/79

ALTITUDE: 1845
(FT, NGVD)

DEPTH: 430
(FT)

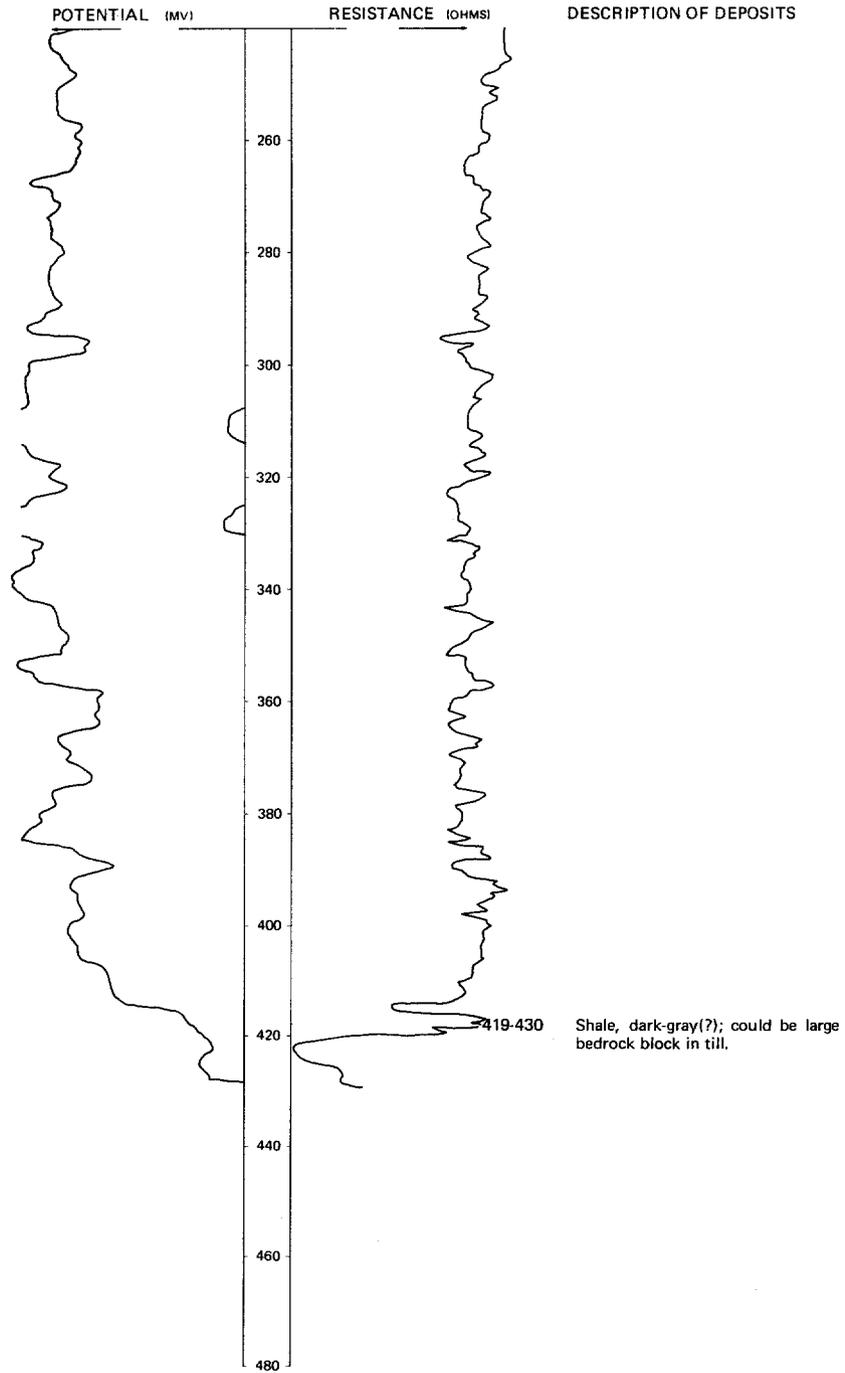


LOCATION: 147-075-24AAA

DATE DRILLED: 8/08/79

ALTITUDE: 1845
(FT, NGVD)

DEPTH: 430
(FT)

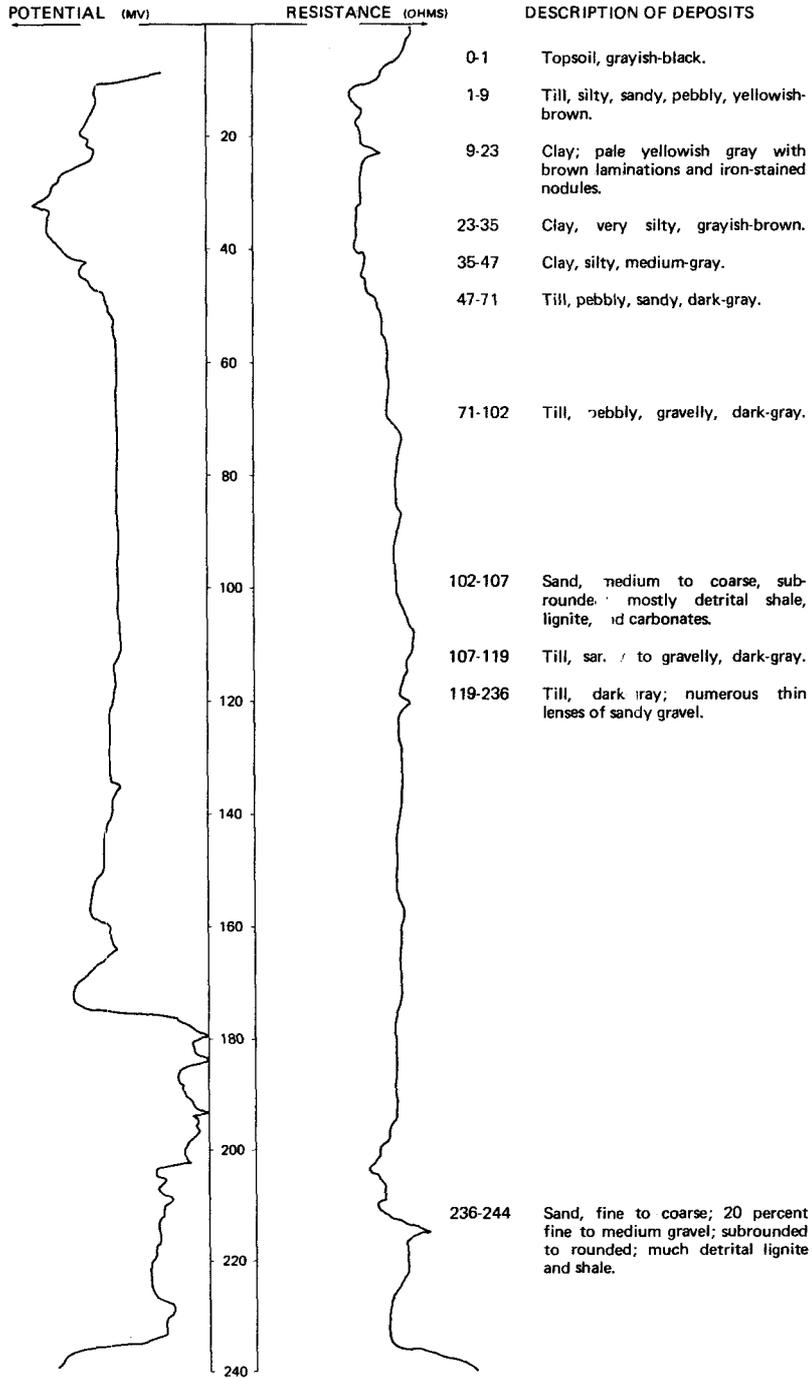


LOCATION: 147-075-33AAA

DATE DRILLED: 8/07/79

ALTITUDE: 1934
(FT. NGVD)

DEPTH: 400
(FT)

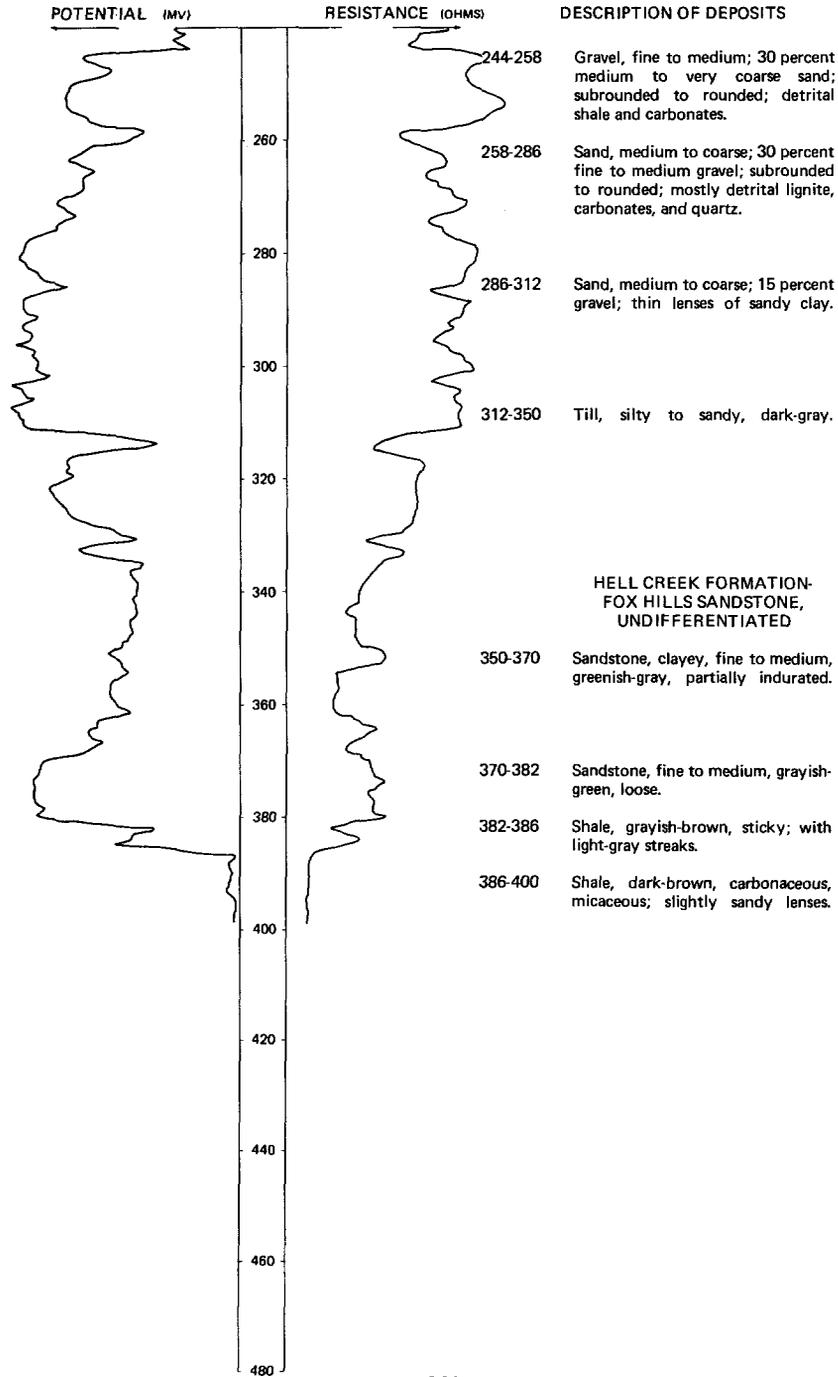


LOCATION: 147-075-33AAA

DATE DRILLED: 8/07/79

ALTITUDE: 1934
(FT., NGVD)

DEPTH: 400
(FT)



147-076-06AAA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1833 feet	Date drilled:	4/05/55
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1	1
	Silt, sandy, dry, tan-----	9.2	10.2
	Sand, fine, uniform, silty, tan-----	5.5	15.7
	Clay (till), sandy, gray-----	14.3	30
	Clay, very sandy; some fine gravel; gray-----	10	40

147-076-06CCC1
(Log from Russell Drilling Co.)

Altitude:	1850 feet	Date drilled:	8/10/76
	Topsoil-----	1	1
	Clay-----	14	15
	Sand-----	5	20
	Till-----	180	200
	Silty sand-----	10	210
	Sand-----	20	230
	Gravel, coarse-----	5	235

147-076-06CCC2
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1845 feet	Date drilled:	3/21/73
	Topsoil, black-----	1	1
	Sandy clay, silty, brown-----	7	8
	Sandy clay, brown-----	3	11
	Silty sand, loose, gray-----	2	13
	Clay (glacial till), sandy, silty; lignite; gray-----	37	50

147-076-06DDC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1838 feet	Date drilled:	8/11/71
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Clay (glacial till), sandy, silty, gravelly, brown-----	9	9
	Sand and gravel, brown-----	2	11
	Clay (glacial till), gravelly, sandy, brown-----	3	14
	Clay (glacial till), very sandy; sandstone; lignite; gravelly; brown-----	41	55

147-076-06DDD
(Log from Russell Drilling Co.)

Altitude:	1830 feet	Date drilled:	11/20/76
	Till-----	10	10
	Gravel; with sand-----	30	40
	Till-----	157	197
	Sand, fine, tight-----	20	217
	Till-----	28	245
	Sand, fine-----	95	340
	Sand; with medium gravel-----	46	386

147-076-07AAB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1850 feet	Date drilled:	4/01/55
	Topsoil-----	1	1
	Clay, silty, brown-----	11.4	12.4
	Clay (till), very sandy, gravelly; cobbles; brown-----	29.6	42
	Clay (till), sandy, medium, gray-----	8	50

147-076-07CDD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1870 feet	Date drilled:	3/21/73
	Topsoil, black-----	1	1
	Sand and gravel, brown-----	5	6
	Clay, sandy, silty; lignite; brown to gray-----	46	52
	Sand and gravel, silty; lignite; cobbles-----	24	76
	Clay (glacial till), gray-----	2	78

147-076-07DAB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1869 feet	Date drilled:	3/28/73
	Topsoil, black-----	0.5	0.5
	Clay, brown-----	2.5	3
	Clay (glacial till), sandy; lignite; brown to gray-----	57	60

NDSWC 5266

LOCATION: 147-076-17BCC

DATE DRILLED: 11/04/77

ALTITUDE: 1896
(FT, NGVD)

DEPTH: 742
(FT)

POTENTIAL (MV)

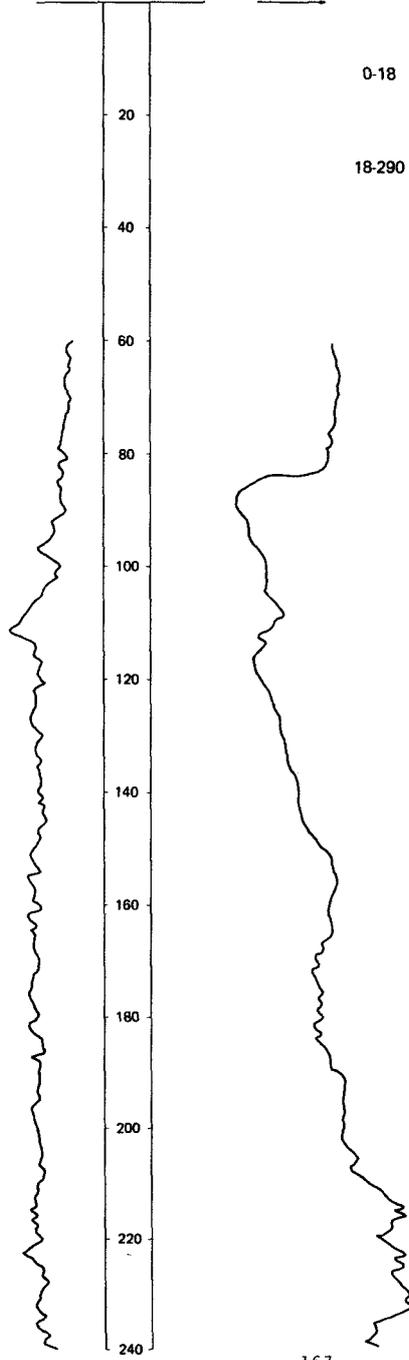
RESISTANCE (OHMS)

DESCRIPTION OF DEPOSITS

GLACIAL DRIFT

0-18 Clay, sandy, silty, pebbly, moderate-yellowish-brown, sticky, moderately tight, cohesive, slightly plastic, oxidized (till).

18-290 Clay, sandy, silty, pebbly, medium-dark-gray to olive-gray, tight, very slightly plastic (till).

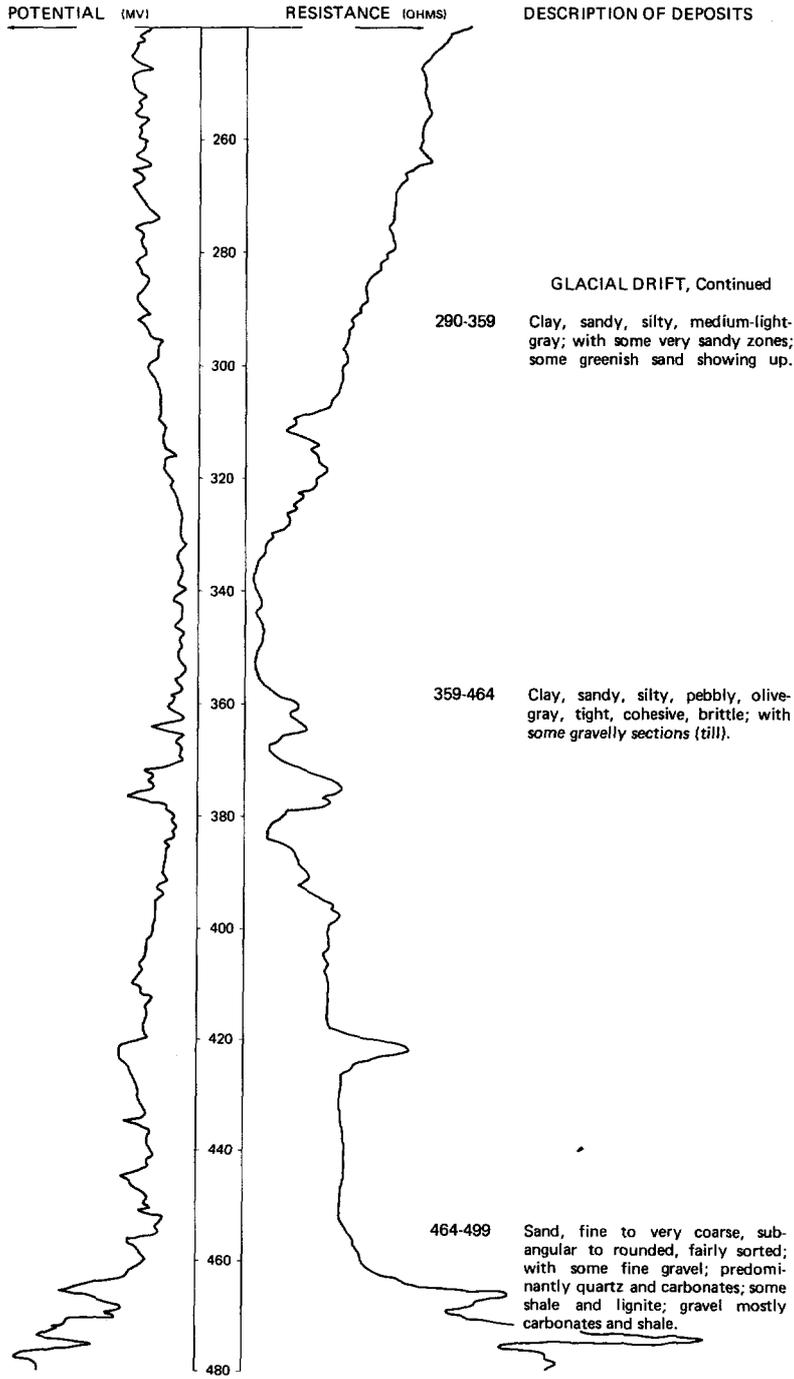


LOCATION: 147-076-17BCC

DATE DRILLED: 11/04/77

ALTITUDE: 1896
(FT, NGVD)

DEPTH: 742
(FT)

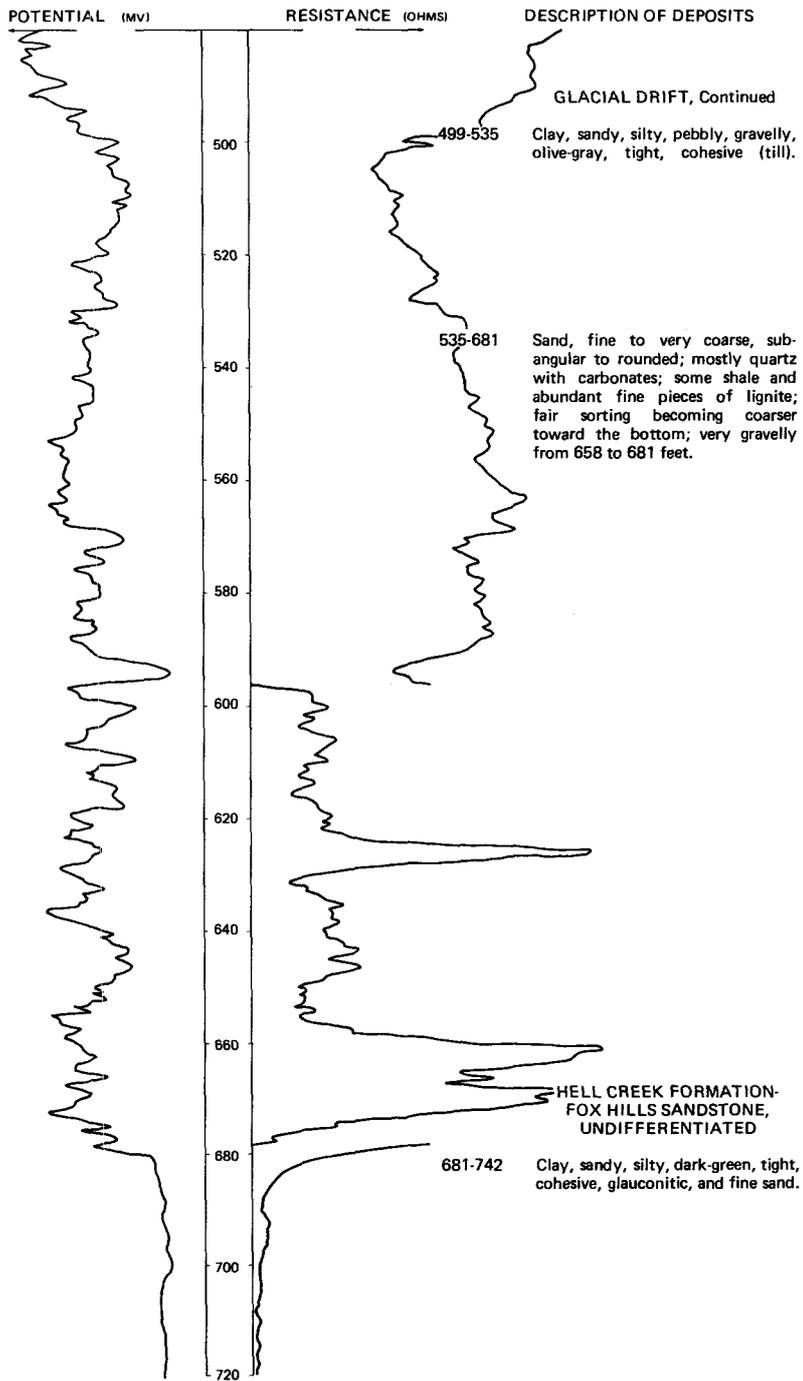


LOCATION: 147-076-17BCC

DATE DRILLED: 11/04/77

ALTITUDE: 1896
(FT, NGVD)

DEPTH: 742
(FT)



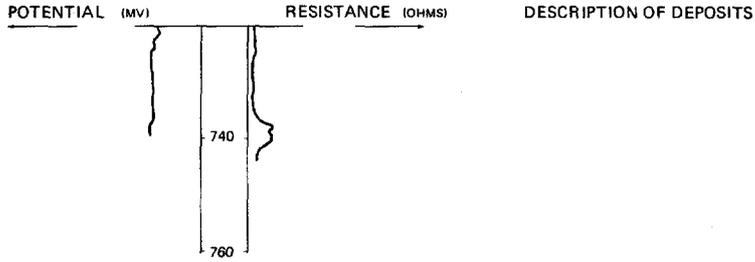
NDSWC 5266, Continued

LOCATION: 147-076-17BCC

DATE DRILLED: 11/04/77

ALTITUDE: 1896
(FT, NGVD)

DEPTH: 742
(FT)



147-076-17CCA
(Log modified from U.S. Bureau of Reclamation)

Altitude: 1892 feet

Date drilled: 4/20/73

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, black	1	1
	Silty clay, black	1	2
	Clay, sandy, brown	8	10
	Sand; some lignite; brown	1	11
	Clay (glacial till); lignite; brown to gray	12	23
	Silty sand, clayey; some lignite; gray	5	28
	Clay (glacial till), silty; lignite throughout; gray	32	60
	Sand, silty; small gravel; gray	1	61
	Clay (glacial till); lignite; sandy; gray	24	85

147-076-18ABB
(Log modified from U.S. Bureau of Reclamation)

Altitude: 1874 feet

Date drilled: 3/29/55

	Topsoil, organic, black	1.2	1.2
	Clay (glacial till), sandy, gravelly	83.8	85

147-076-18BAD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1867 feet	Date drilled:	5/02/72
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, black-----	1	1
	Clay (glacial till); 30 percent coarse to fine sand; fine gravel; some lignite; calcareous; yellowish brown-----	4	5
	Clayey silt; very fine sand; silty; gravel; gypsum; lacustrine; yellowish brown-----	20	25
	Clay (glacial till); coarse to fine sand; gravel; lignite; slight HCL reaction; gray-----	14	39
	Clayey silt; lacustrine; gypsum; silty; fine sand; gray-----	6.5	45.5
	Clay (glacial till); coarse to fine sand; lignite; slight HCL reaction; gray-----	30.5	76

147-076-18BCD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1867 feet	Date drilled:	4/26/72
	Topsoil-----	1	1
	Clay, sandy, silty, calcareous, brown-----	4	5
	Clay (glacial till); sand-silt-clay-gravel; lignite; brown to gray-----	145	150

147-076-18CBB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1888 feet	Date drilled:	5/05/72
	Topsoil, black-----	1	1
	Clay; coarse to fine sand; gravel; slight HCL reaction; lignite; silty clay; brown-----	90	91
	Fat clay; fine sand (5 percent); slight HCL reaction; lacustrine; brown-----	5	96

147-076-19BAB
(Log from Driver Well Drilling, Inc.)

		Date drilled:	10/22/73
	Topsoil-----	2	2
	Clay, brown-----	28	30
	Clay, blue; with gravel-----	60	90
	Rock and coal-----	1	91
	Streaky clay, blue, and coal-----	134	225
	Clay, soft-----	15	240
	Clay, sandy, light-blue-----	40	280
	Gravel-----	5	285

147-076-19BCB
(Log modified from U.S. Bureau of Reclamation)

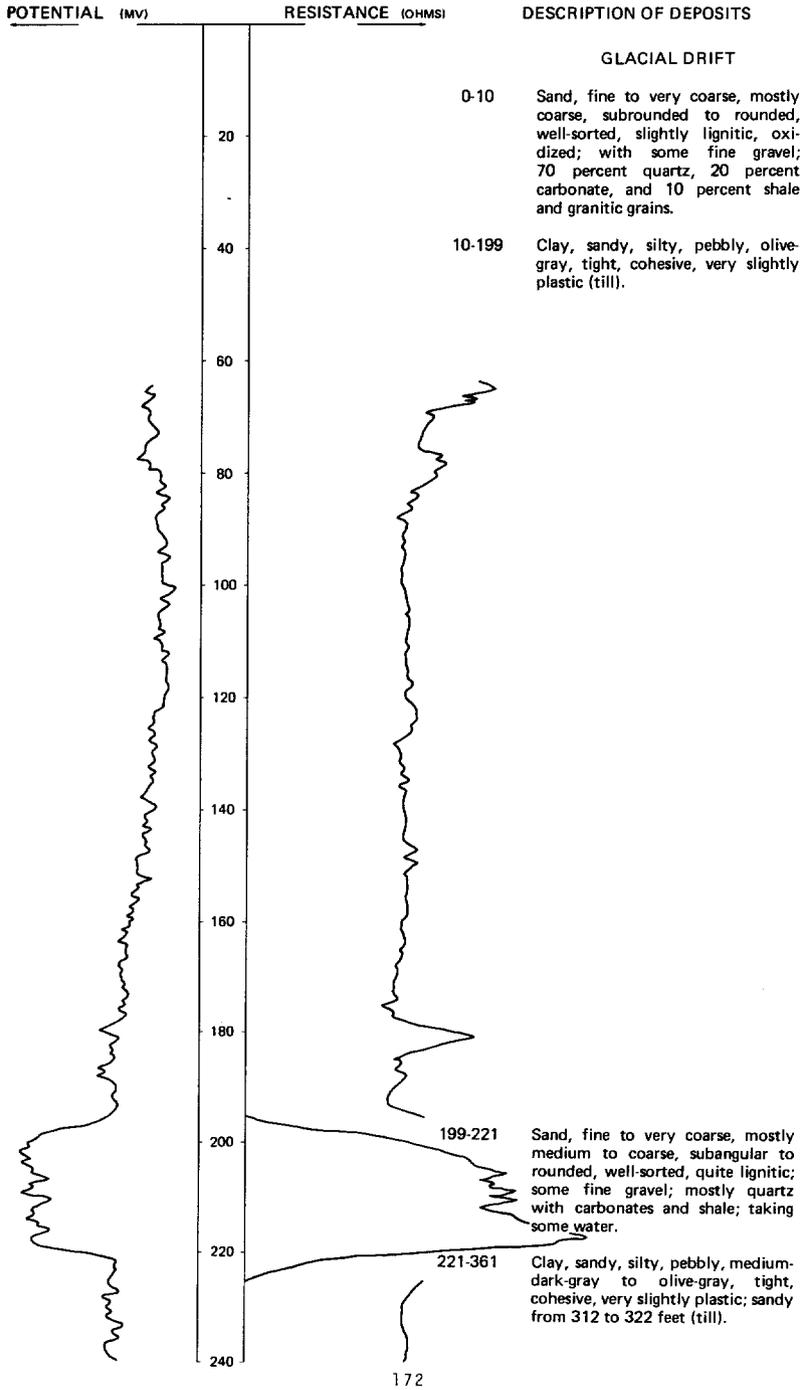
Altitude:	1934 feet	Date drilled:	4/23/73
	Topsoil, black-----	1	1
	Sand; clay; loose; brown-----	4	5
	Clayey sand, brown-----	2.5	7.5
	Clay (till); lignite; sandy; rocks; brown-----	117.5	125

LOCATION: 147-076-22CCC1

DATE DRILLED: 7/18/78

ALTITUDE: 1900
(FT, NGVD)

DEPTH: 575
(FT)

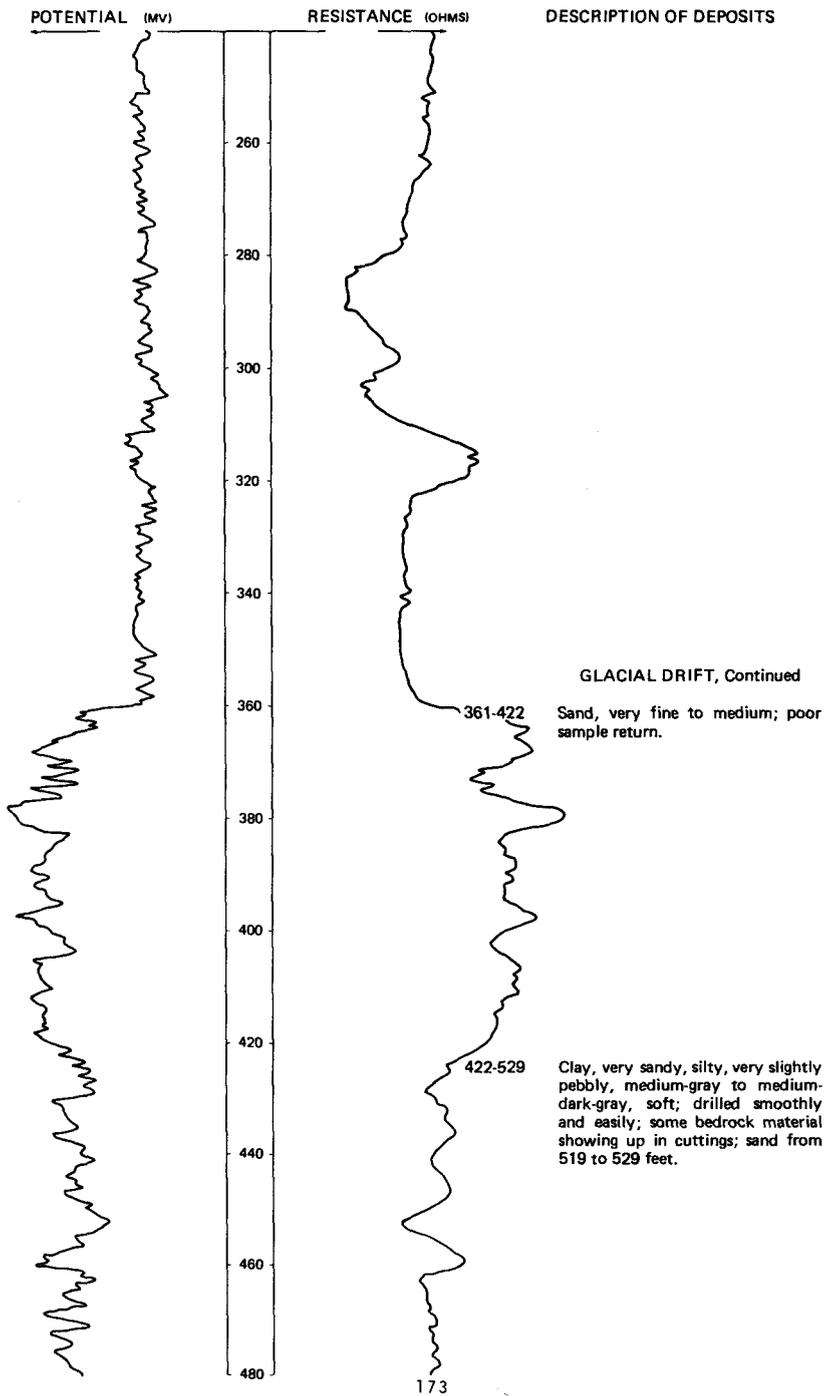


LOCATION: 147-076-22CCC1

DATE DRILLED: 7/18/78

ALTITUDE: 1900
(FT, NGVD)

DEPTH: 575
(FT)

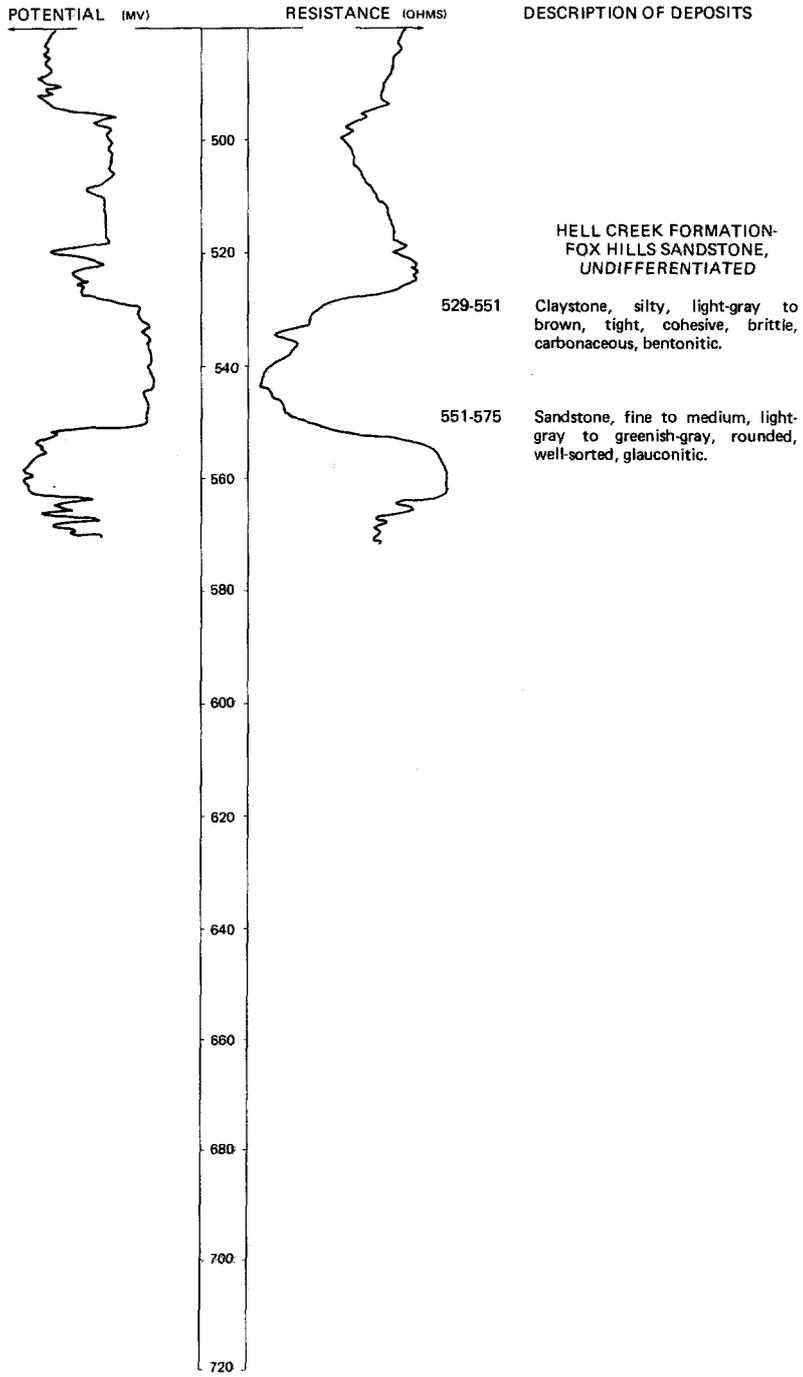


LOCATION: 147-076-22CCC1

DATE DRILLED: 7/18/78

ALTITUDE: 1900
(FT, NGVD)

DEPTH: 575
(FT)

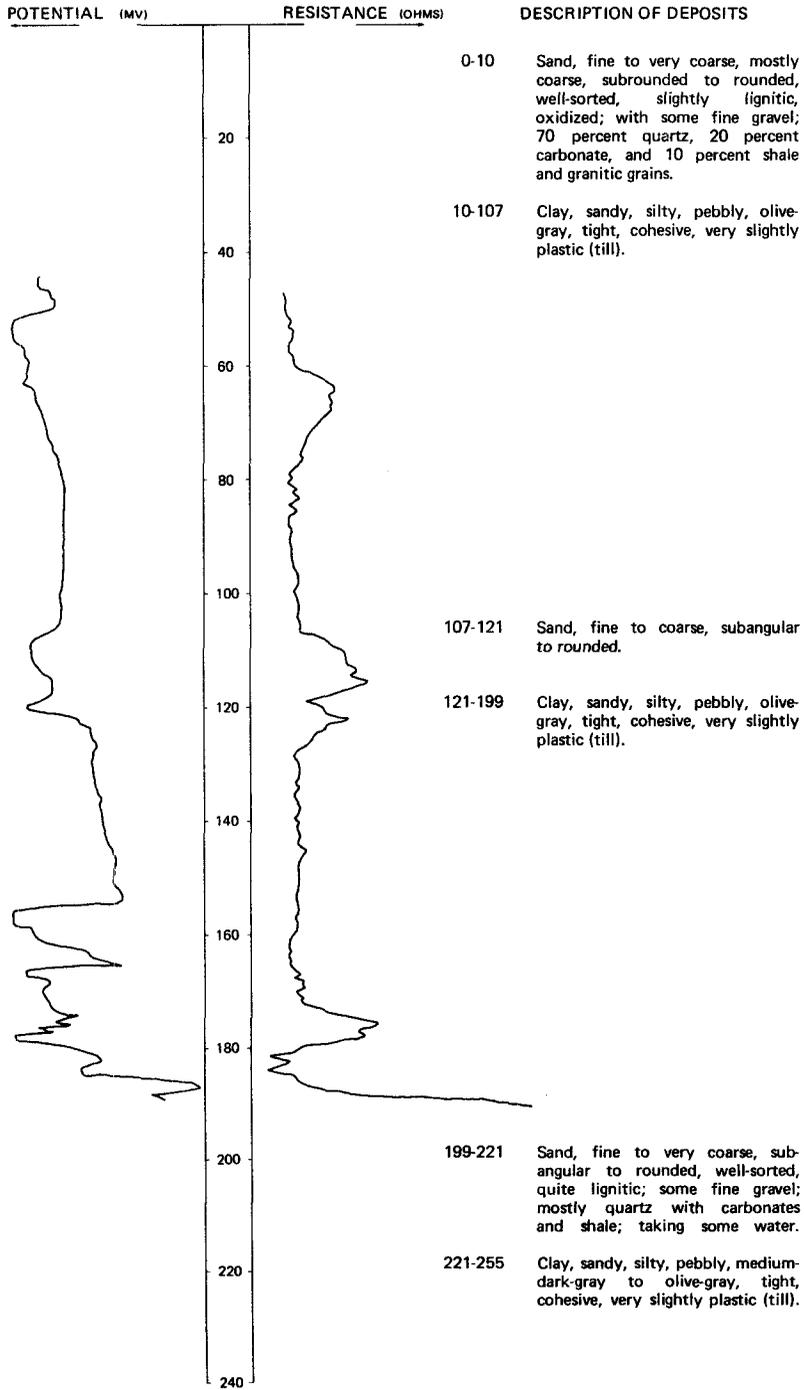


LOCATION: 147-076-22CCC2, 3

DATE DRILLED: 7/18/78

ALTITUDE: 1900
(FT, NGVD)

DEPTH: 255
(FT)

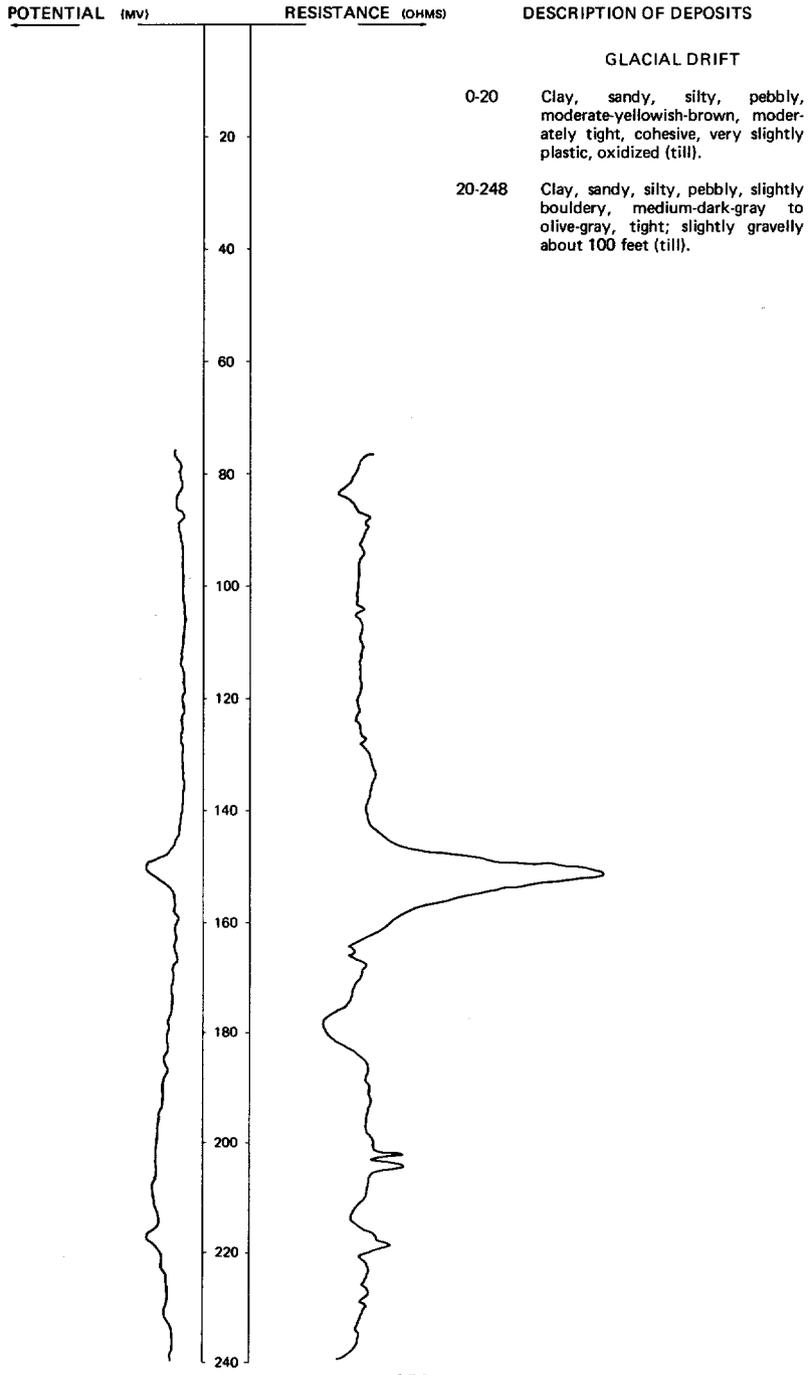


LOCATION: 147-076-24BBB1, 2

DATE DRILLED: 7/19/78

ALTITUDE: 1990
(FT, NGVD)

DEPTH: 635
(FT)

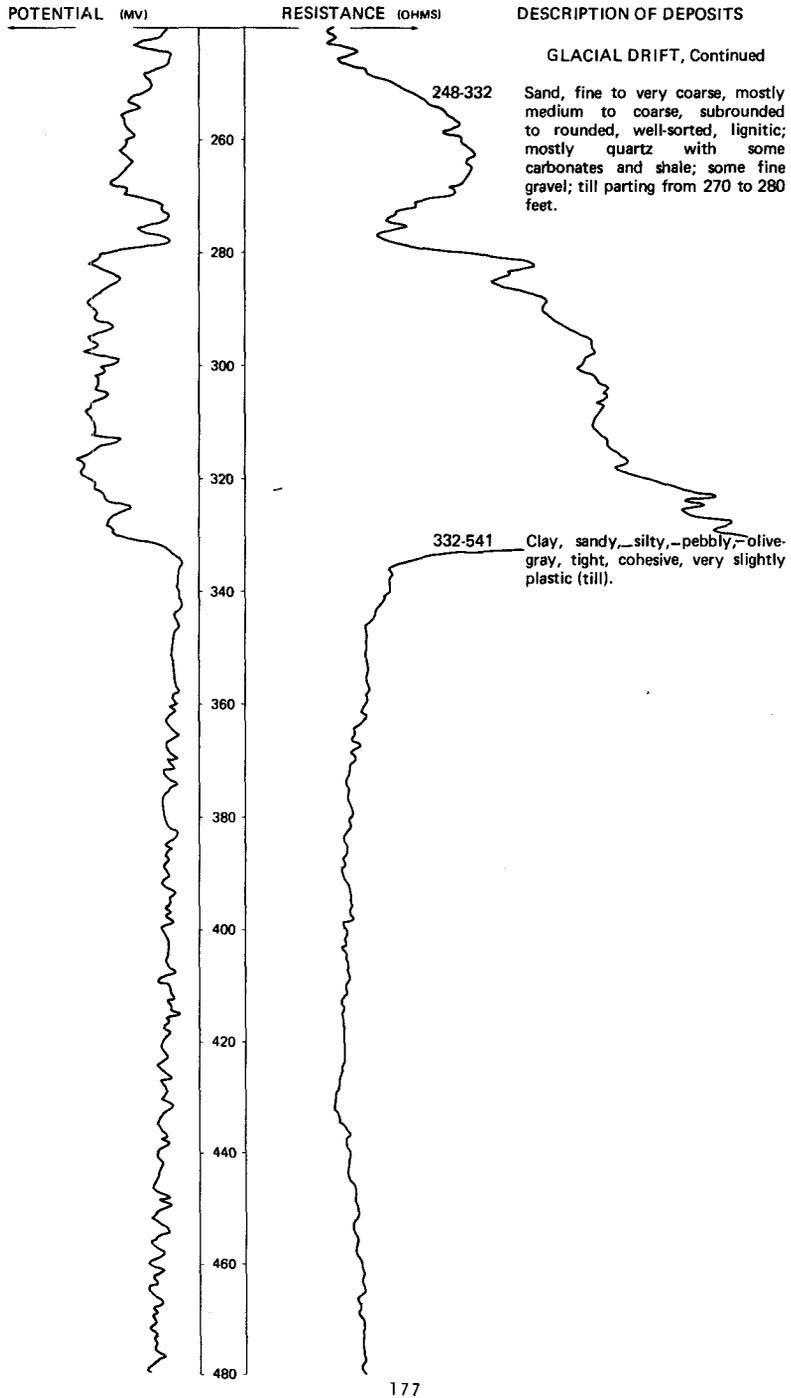


LOCATION: 147-076-24BBB1, 2

DATE DRILLED: 7/19/78

ALTITUDE: 1990
(FT, NGVD)

DEPTH: 635
(FT)

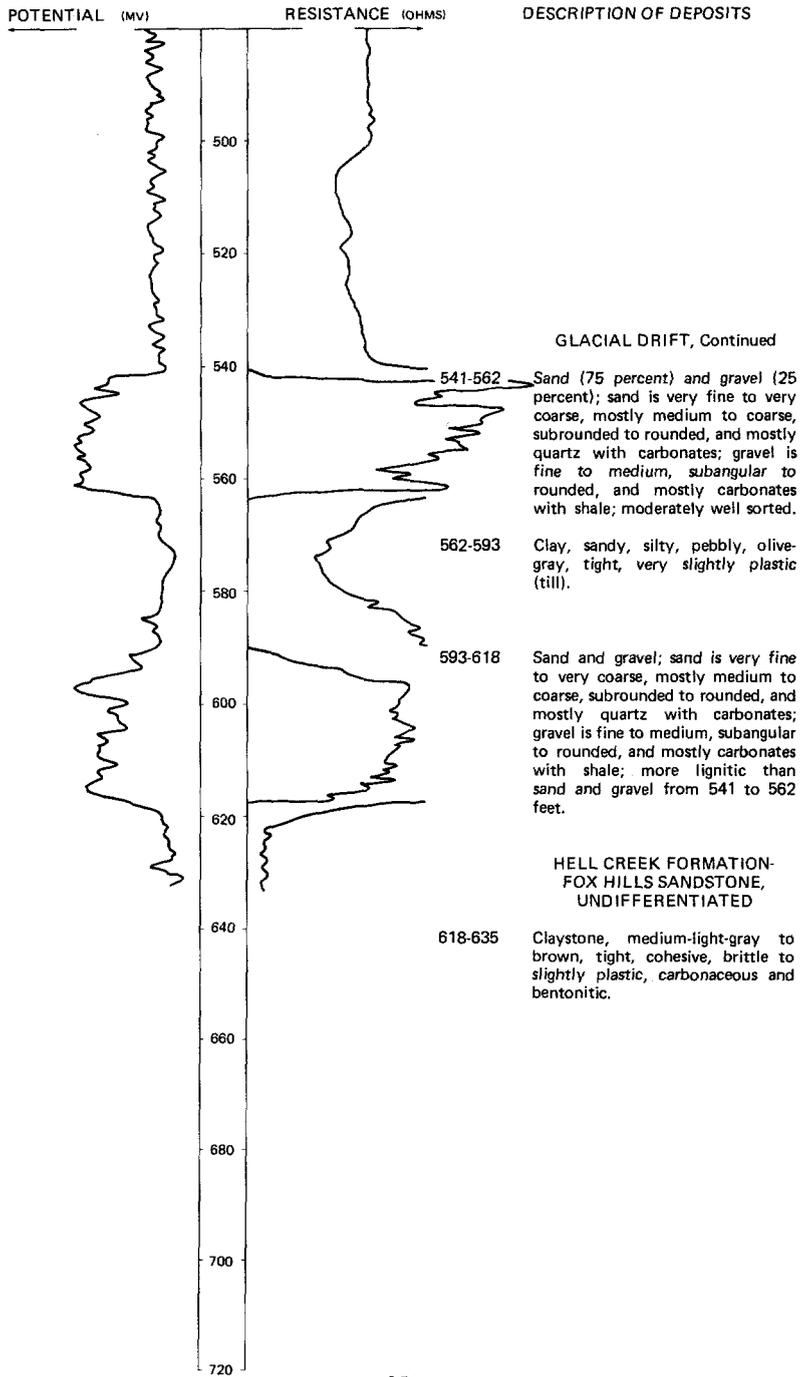


LOCATION: 147-076-24BBB1, 2

DATE DRILLED: 7/19/78

ALTITUDE: 1990
(FT, NGVD)

DEPTH: 635
(FT)

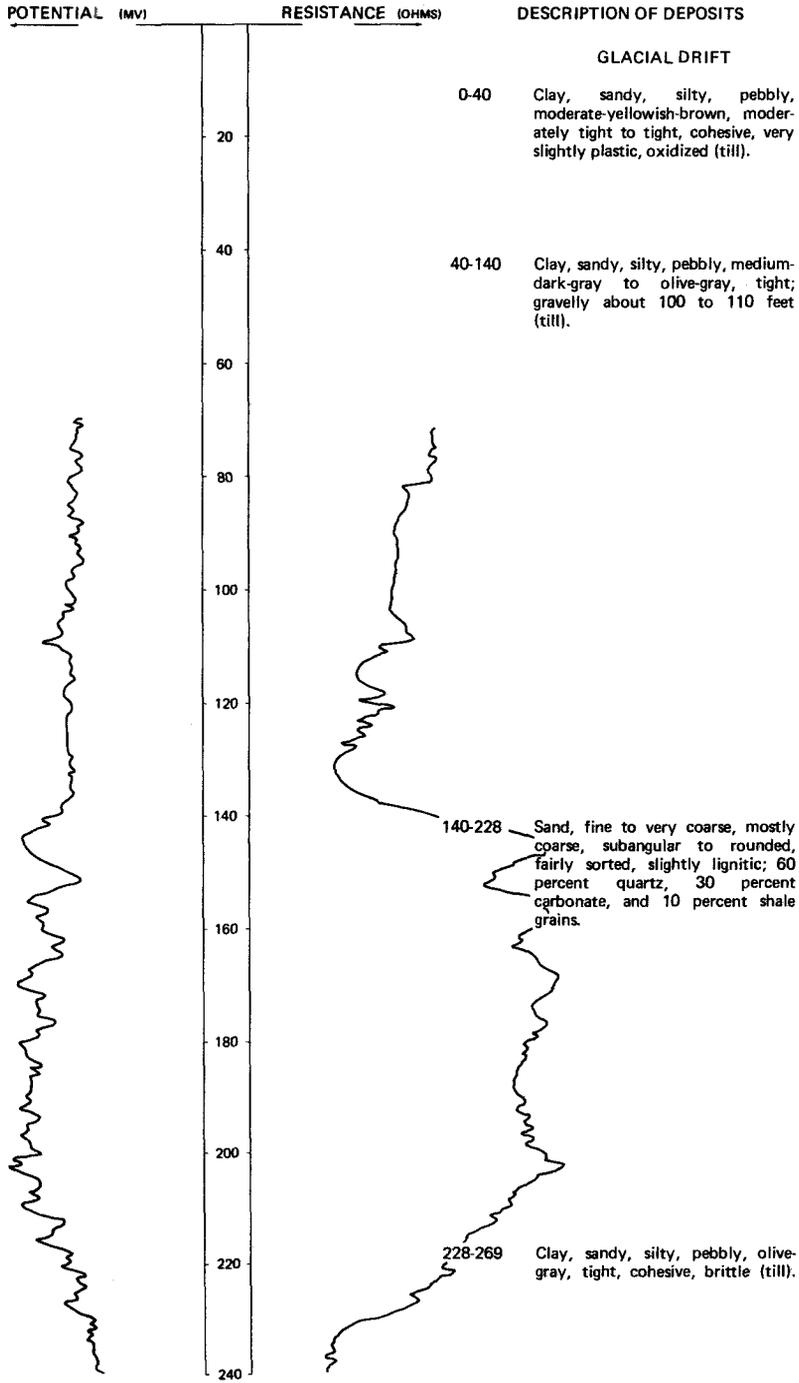


LOCATION: 147-076-31ABB

DATE DRILLED: 7/17/78

ALTITUDE: 1900
(FT, NGVD)

DEPTH: 395
(FT)

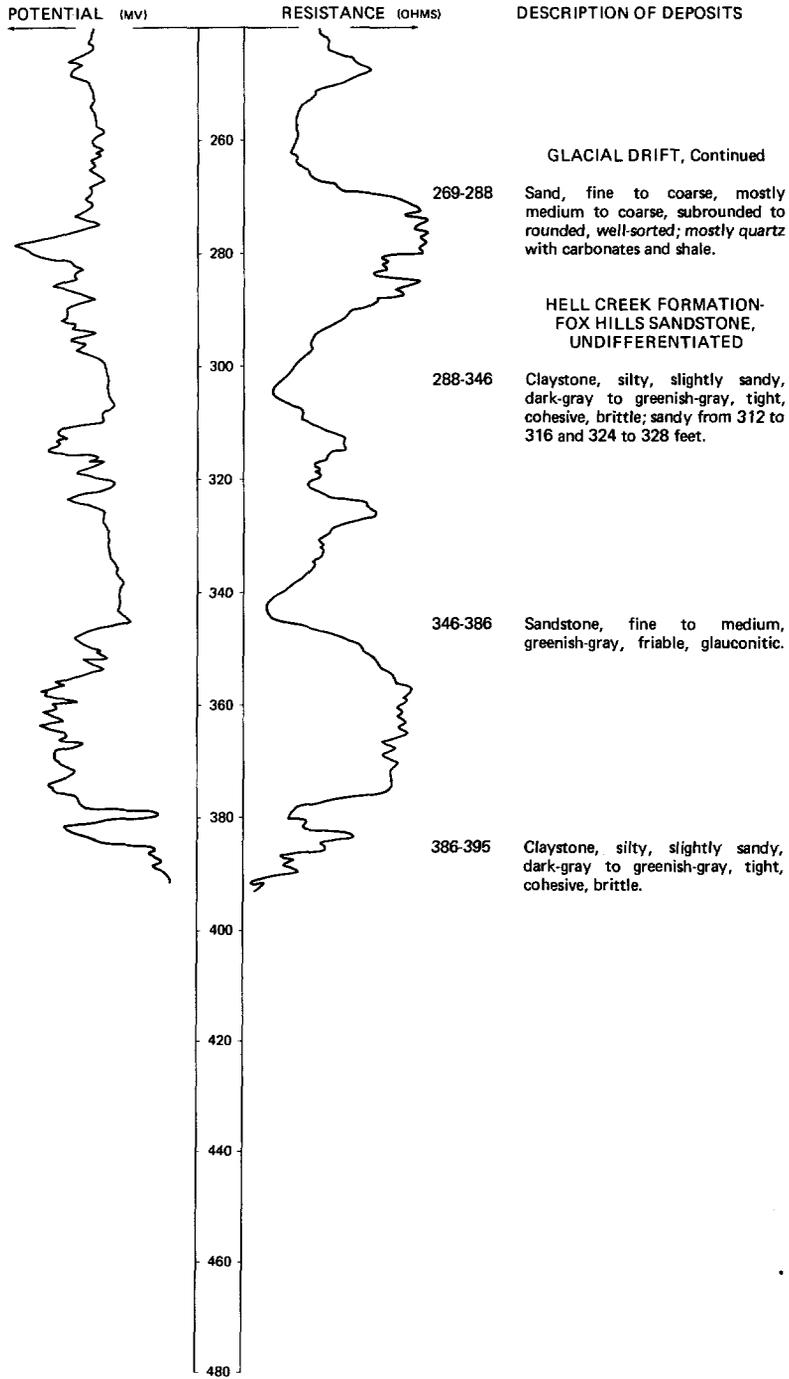


LOCATION: 147-076-31ABB

DATE DRILLED: 7/17/78

ALTITUDE: 1900
(FT, NGVD)

DEPTH: 395
(FT)

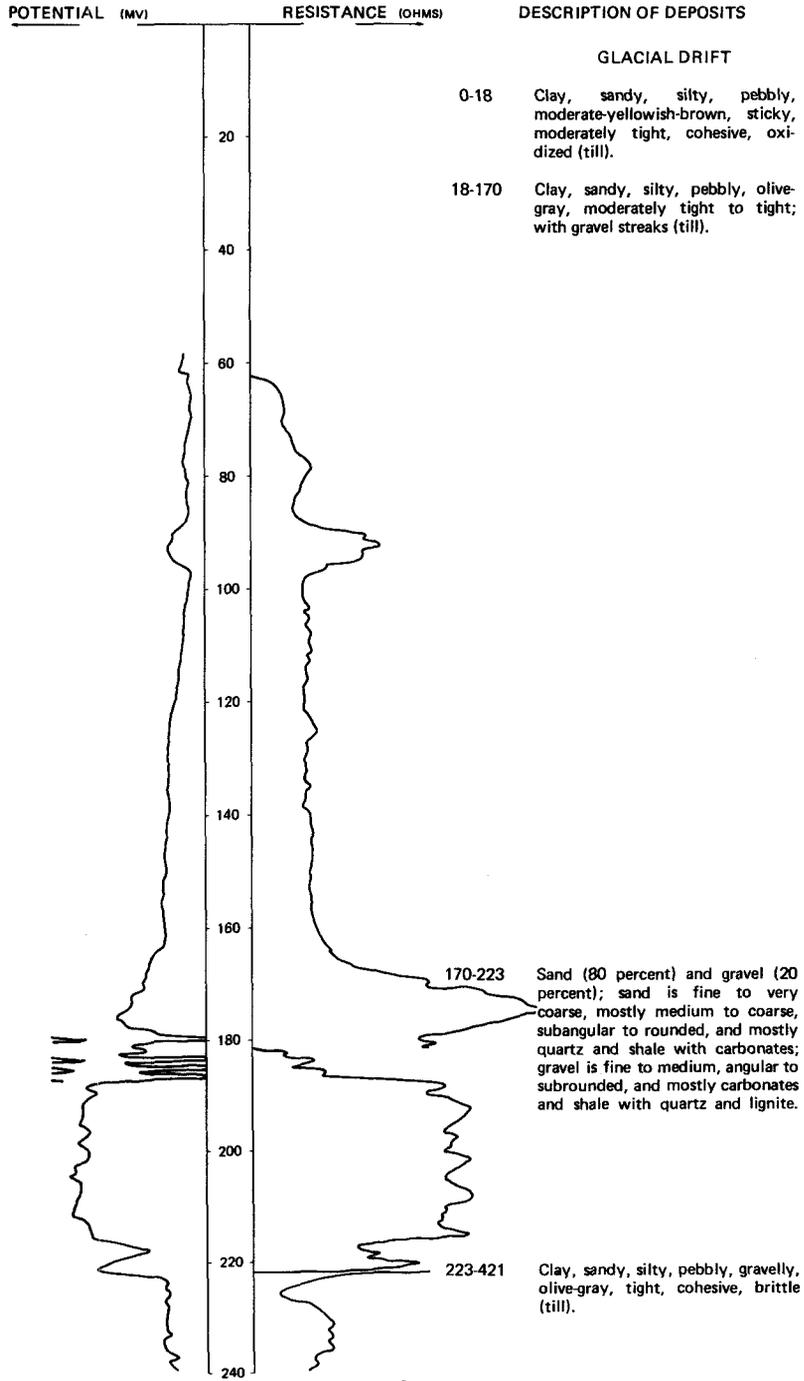


LOCATION: 147-076-33CCC1, 2, 3

DATE DRILLED: 11/01/77

ALTITUDE: 1920
(FT, NGVD)

DEPTH: 762
(FT)

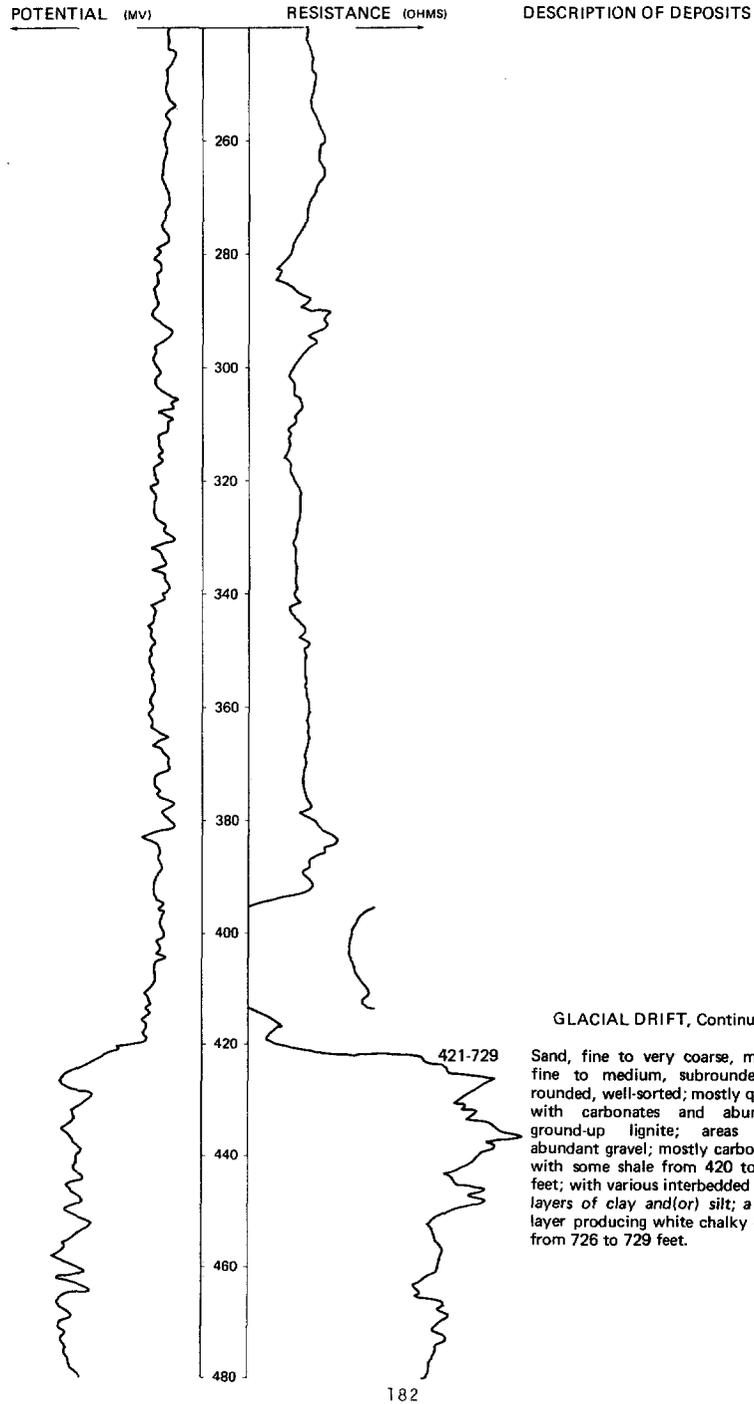


LOCATION: 147-076-33CCC1, 2, 3

DATE DRILLED: 11/01/77

ALTITUDE: 1920
(FT, NGVD)

DEPTH: 762
(FT)

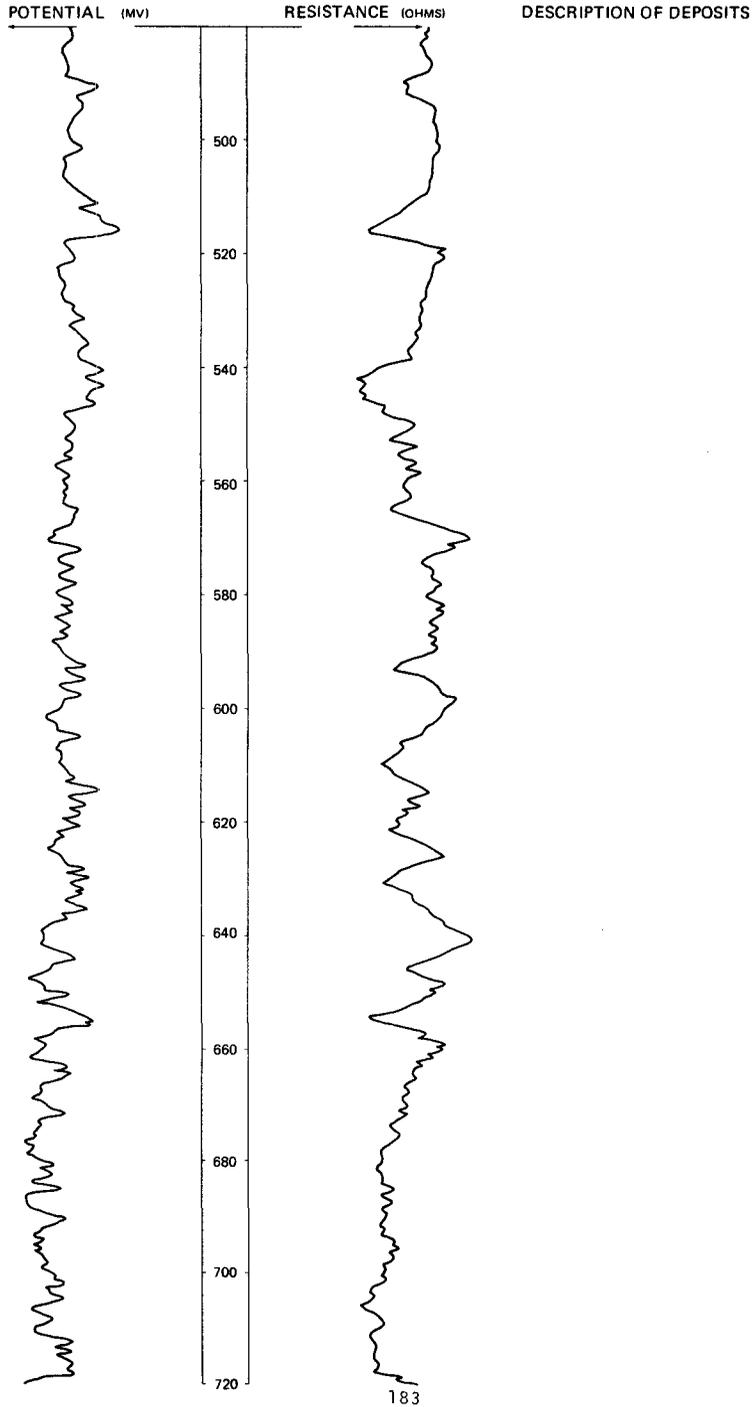


LOCATION: 147-076-33CCC1, 2, 3

DATE DRILLED: 11/01/77

ALTITUDE: 1920
(FT, NGVD)

DEPTH: 762
(FT)

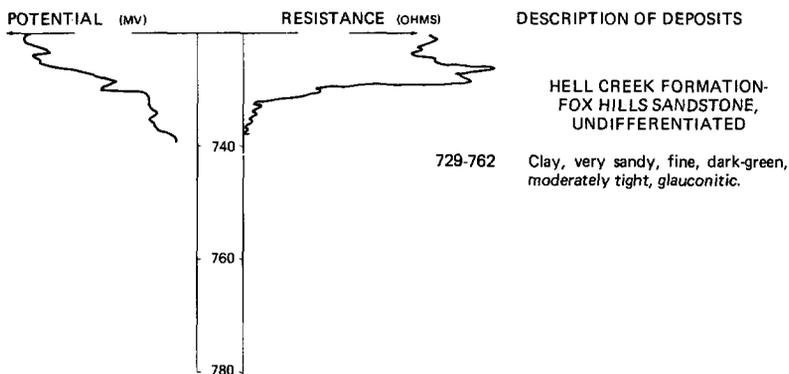


LOCATION: 147-076-33CCC1, 2, 3

DATE DRILLED: 11/01/77

ALTITUDE: 1920
(FT, NGVD)

DEPTH: 762
(FT)



147-077-01AAA
(Log modified from U.S. Bureau of Reclamation)

Altitude: 1837 feet

Date drilled: 3/16/73

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, black	1	1
	Sand and gravel, brown	4	5
	Clay (glacial till), silty, brown to gray	11	16
	Sand and gravel; fine sand; coarse gravel; brownish gray	5	21
	Clay (glacial till), gray	6.5	27.5
	Silty sand, fine, gray	7.5	35
	Clay (glacial till), gray	5	40

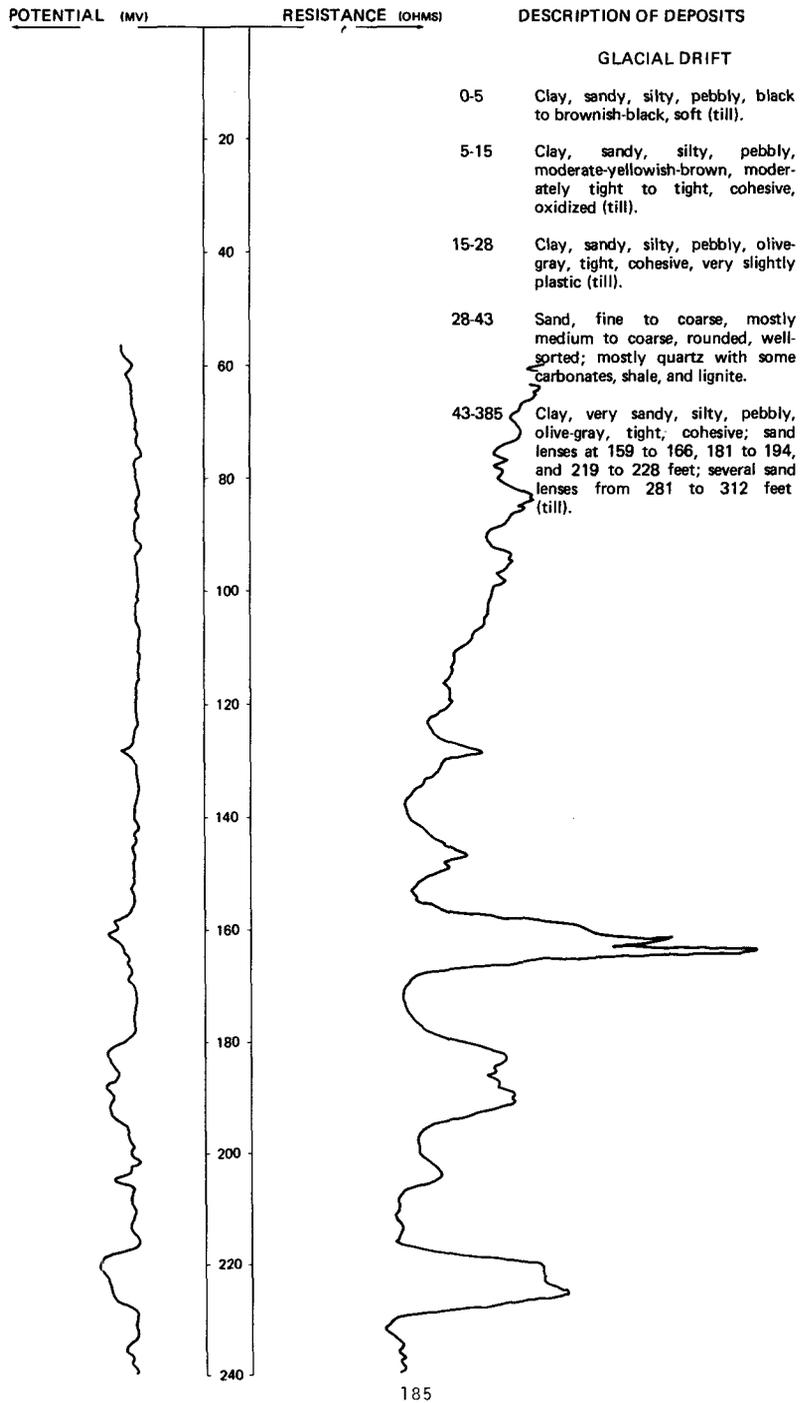
NDSWC 5333

LOCATION: 147-077-11DDD

DATE DRILLED: 6/20/78

ALTITUDE: 1910
(FT, NGVD)

DEPTH: 535
(FT)

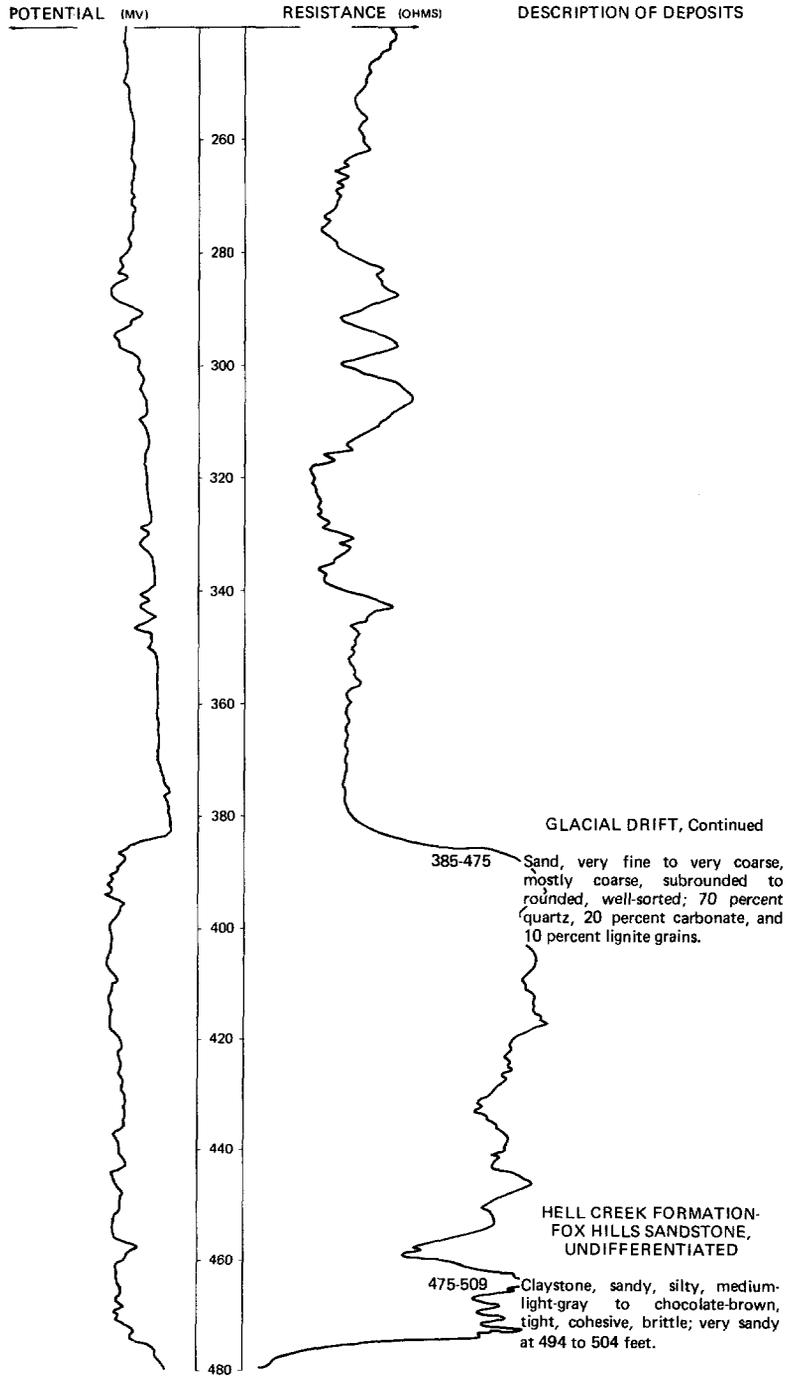


LOCATION: 147-077-11DDD

DATE DRILLED: 6/20/78

ALTITUDE: 1910
(FT, NGVD)

DEPTH: 535
(FT)



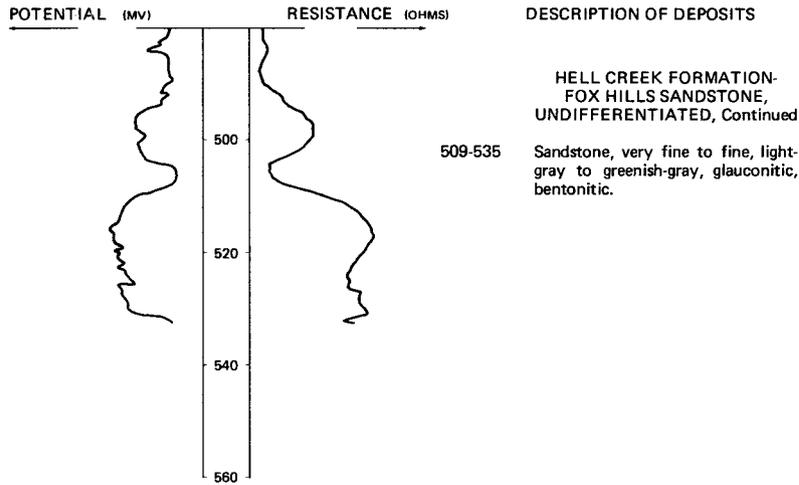
NDSWC 5333, Continued

LOCATION: 147-077-11DDD

DATE DRILLED: 6/20/78

ALTITUDE: 1910
(FT, NGVD)

DEPTH: 535
(FT)



147-077-13BBC

(Log modified from U.S. Bureau of Reclamation)

Altitude: 1925 feet

Date drilled: 4/09/73

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, black	0.5	0.5
	Sandy clay, brown	2.5	3
	Clay (glacial till), sandy, brown	14	17
	Silty sand, brown	2	19
	Clay (till), sandy; lignite; rock at 30 feet; gray	72.5	91.5
	Silty sand, gray	2	93.5
	Clay (till), gray	1	94.5
	Silty sand, gray	3.5	98
	Sandy silt, gray	2	100
	Clay (till), gray	15	115

147-077-13DAA

(Log modified from U.S. Bureau of Reclamation)

Altitude: 1887 feet

Date drilled: 3/23/55

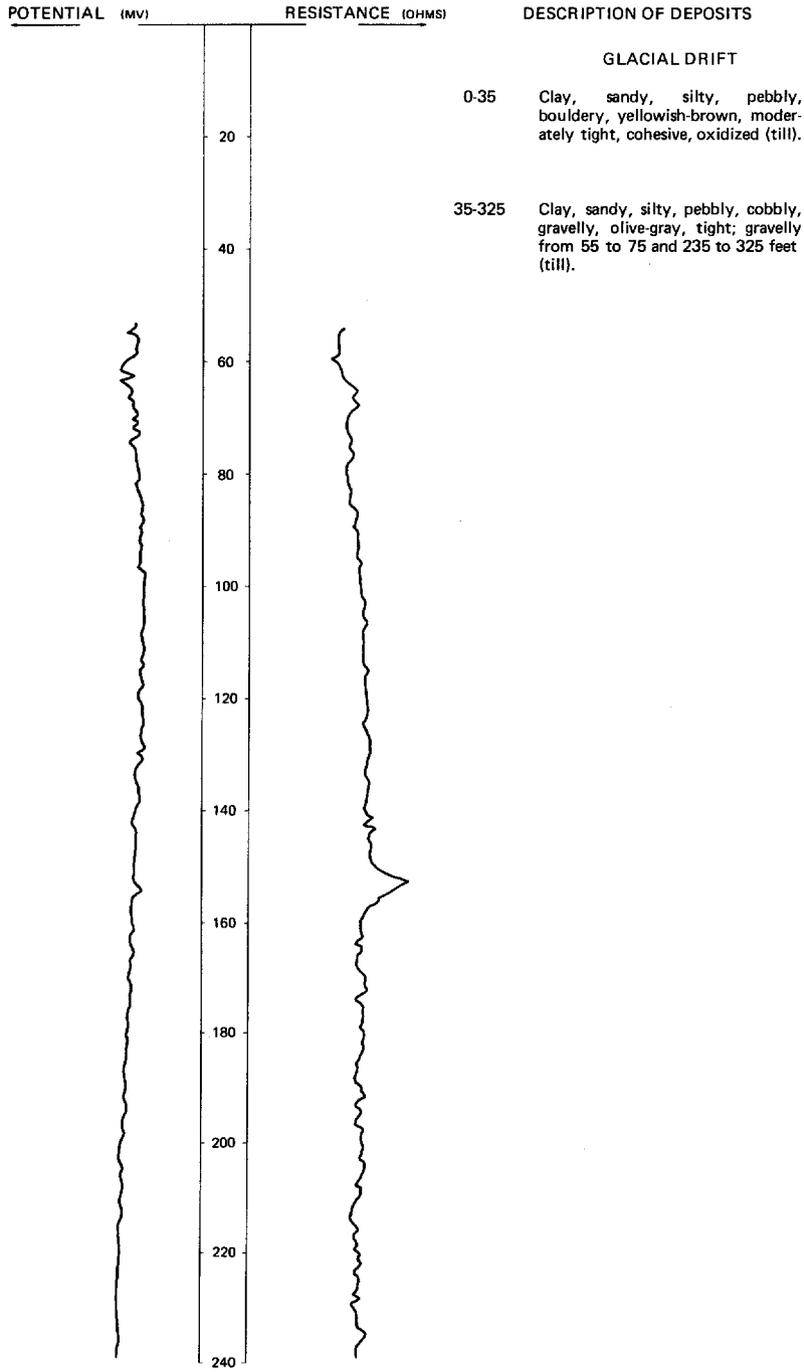
	Topsoil	1	1
	Clay (glacial till), sandy, brown	6.5	7.5
	Silt, clayey, buff to gray	4.7	12.2
	Clay (till), sandy, gray	4.3	16.5
	Silt, clayey, gray	10.3	26.8
	Clay (till), sandy; few pebbles; aqueoglacial; gray	58.2	85

LOCATION: 147-077-17DDD

DATE DRILLED: 6/22/78

ALTITUDE: 1925
(FT, NGVD)

DEPTH: 415
(FT)

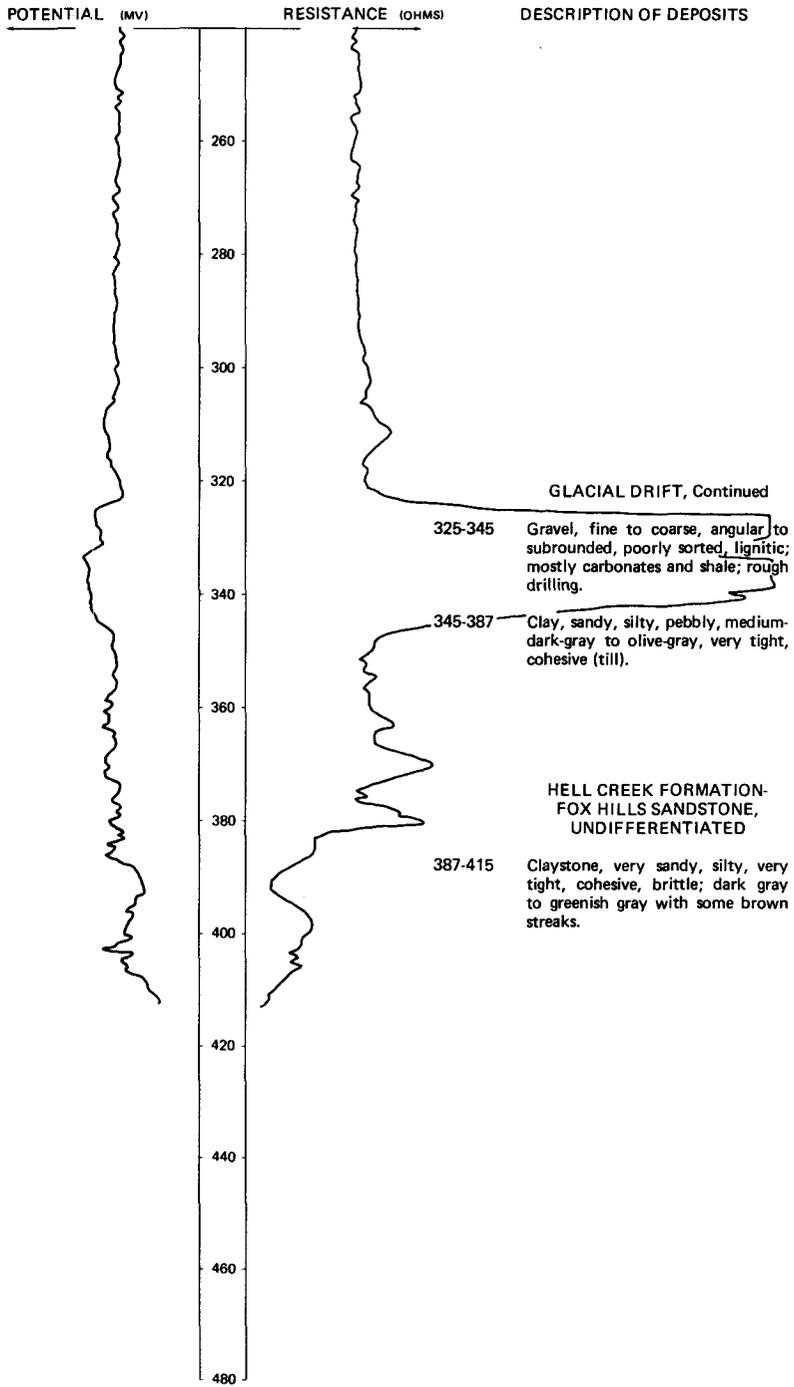


LOCATION: 147-077-17DDD

DATE DRILLED: 6/22/78

ALTITUDE: 1925
(FT, NGVD)

DEPTH: 415
(FT)



147-077-23BCA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1933 feet	Date drilled:	3/05/76
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, clayey; some gravel; brown-----	1	1
	Sandy clay, brown-----	2.5	3.5
	Silty sand; fine sand with some gravel; brown-----	5.5	9
	Sandy clay (glacial till); scattered lignite and gravel; brown to gray-----	40	49
	Clay (till); some lignite; gray-----	16.5	65.5
	Sand and gravel; coarse sand; brown-----	3.5	69
	Sandy clay (till); scattered lignite; gray-----	9	78
	Sand and gravel; scattered cobbles; gray to brown-----	19	97
	Cobbles and boulders; gravel and lignite-----	3	100
	Sandy clay (till); 60 percent gravel; gray-----	40	140
	Sand; fine sand; lignite-----	1	141
	Clay (till), sandy, gray-----	15	156
	Sand and gravel; some clay; brownish gray-----	1	157
	Sandy clay (till); scattered lignite; gray-----	35	192
	Sand, fine, gray-----	4	196
	Cemented sand and gravel, gray; possibly displaced bedrock-----	25	221

147-077-23BCB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1896 feet	Date drilled:	4/11/73
	Topsoil, black-----	1	1
	Silty clay, dark-brown-----	2	3
	Clay (glacial till); lignite fragments; brown-----	12	15
	Silty sand, loose, brown-----	1	16
	Clay (till); some lignite; dark brown-----	5	21
	Silty sand, brownish-gray-----	6	27
	Silty clay, gray-----	4	31
	Clay (till), silty, gravelly; lignite fragments; gray-----	84	115

147-077-23CCD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1861 feet	Date drilled:	4/10/73
	Topsoil, silty, loose, black-----	1	1
	Clay, silty, sandy, black to dark-brown-----	7.5	8.5
	Silty sand; scattered gravel; brown-----	3.5	12
	Clay (glacial till), light-brown to dark-brown-----	5	17
	Sand and gravel; silty sand; clay; scattered lignite; brown-----	4.5	21.5
	Clay (till); scattered lignite particles; gray-----	53.5	75

147-077-24CCC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1877 feet	Date drilled:	4/13/73
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, black-----	0.5	0.5
	Sandy clay, brown-----	2.5	3
	Clay (glacial till), sandy; some lignite; brown to dark brown-----	46.5	49.5
	Silty sand; small gravel; loose; gray-----	3.5	53
	Clay (till), gray-----	6.5	59.5
	Sand; small gravel; gray-----	1	60.5
	Clay (till), gray-----	18.5	79
	Sand and gravel; small gravel; silty; lignite throughout; gray-----	34	113
	Sandy silt; scattered lignite; gray-----	4	117
	Clay (till); scattered lignite; gray-----	8	125

147-077-25B8C
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1887 feet	Date drilled:	4/17/73
	Topsoil, black-----	1	1
	Silty clay, black to light-gray-----	5	6
	Clay, oxidized-----	4	10
	Silty sand, loose, brown-----	4	14
	Clay (glacial till), sandy; silty sand; lignite; gray-----	30	44
	Sand; small gravel; scattered lignite; gray-----	4	48
	Clay (till); scattered lignite; gray-----	42	90
	Sand, silty; with some small gravel; gray-----	4.5	94.5
	Clay (till), gray-----	5.5	100

147-077-25CCC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1875 feet	Date drilled:	2/12/73
	Topsoil, black to dark-brown-----	1	1
	Clay; 20 percent medium to fine sand; calcareous; plastic; brown-----	3	4
	Clayey sand; medium to fine sand with some gravel; poorly graded; brown-----	13	17
	Clay (till); 7 percent fines; lignitic; 30 percent sand; some gravel; calcareous; gray-----	58	75

147-077-25CCD
(Log from Driver Well Drilling, Inc.)

Date drilled: 10/22/73

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	2	2
	Clay, brown-----	24	26
	Clay, blue-----	67	93
	Sandrock and coal-----	2	95
	Clay, blue-----	105	200
	Coal and clay, blue-----	8	208
	Clay, blue-----	44	252
	Rock-----	4	256
	Clay, blue-----	109	365
	Rock-----	7	372
	Clay, hard, blue-----	18	390
	Rock-----	1	391
	Clay-----	39	430
	Sand, dirty-----	6	436
	Gravel-----	14	450

147-077-26ABA
(Log modified from U.S. Bureau of Reclamation)

Altitude: 1908 feet

Date drilled: 2/21/55

	Topsoil-----	0.9	0.9
	Clay (glacial till), sandy, gravelly, brown-----	7.9	8.8
	Sand, fine to medium, some coarse; fine gravel; clay zones; buff to brown-----	14.7	23.5
	Clay (till); with fine sand and gravel; gray-----	50.5	74
	Sand, fine to medium; trace of coarse sand; fine gravel; trace of clay to clayey; gray-----	17.6	91.6
	Silt, lacustrine; trace of clay to clayey; sandy in zones; gray-----	13	104.6
	Clay (till), gravelly, gray-----	5.4	110

147-077-26CCD
(Log modified from U.S. Bureau of Reclamation)

Altitude: 1844 feet

Date drilled: 3/01/55

	Topsoil-----	1	1
	Clay, aqueoglacial, silty, brown-----	25	26
	Sand, fine to medium; trace of clay; silty; gravel zones; sandy till; gray-----	14.2	40.2
	Silt, aqueoglacial, clayey, gray-----	39.8	80

147-077-26DBB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1827 feet	Date drilled:	2/17/55
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Ice.....	1.8	1.8
	Muck.....	.8	2.6
	Clay, silty, sandy, buff to gray.....	8.8	11.4
	Clay (glacial till), sandy, gravelly, gray.....	48.6	60

147-077-28DDD1
(Log from Driver Well Drilling, Inc.)

		Date drilled:	8/20/72
	Topsoil.....	2	2
	Gravel.....	18	20
	Clay, brown.....	12	32
	Clay, soft, blue.....	40	72
	Hardpan.....	14	86
	Coal.....	2	88
	Clay.....	10	98
	Coal.....	1	99
	Clay.....	10	109
	Rock.....	1	110
	Clay; with layers of coal.....	83	193
	Rock.....	1	194
	Coal and clay.....	32	226
	Sand and clay.....	54	280
	Clay, gray.....	20	300
	Clay; with coal streaks.....	18	318
	Clay.....	50	368
	Gravel, coarse.....	2	370

147-077-28DDD2
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1909 feet	Date drilled:	12/13/71
	Topsoil, black.....	0.5	0.5
	Subsoil, clayey, brown.....	1	1.5
	Gravelly sand; 80 percent coarse to fine sand; fine gravel; calcareous; glaciofluvial; brown.....	17.5	19
	Clay; 20 percent fine sand; calcareous; lacustrine; silty clay; clayey sand; lean clay; brown to gray.....	16	35
	Clay (glacial till); 10 percent fine sand; some coarse sand; scattered gravel; calcareous; gray.....	14	49
	Clay; 10 percent very fine sand; sandy clay; lacustrine; gray.....	24	73
	Silt; 40 percent fine sand; lignite; calcareous; gray.....	19	92
	Silty sand and gravel.....	15	107
	Silt, gray.....	3	110

147-077-34BAA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1863 feet	Date drilled:	2/06/73
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, organic, black-----	1	1
	Clay; some very fine sand; calcareous; light brown to white-----	4	5
	Sandy clay, marlaceous, crystalline, calcareous; 30 percent fine sand; lacustrine; reddish brown-----	2.1	7.1
	Silty sand; 65 percent very fine sand; calcareous; lacustrine; silty with clayey laminations; reddish brown-----	2.9	10
	Clay; clay zones; silty sand; 20 percent fine sand; calcareous; lacustrine; reddish brown to light grayish brown-----	5	15
	Silty sand, lacustrine; silty sand lenses; 35 percent very fine sand; scattered lignite; calcareous; gray-----	9.6	24.6
	Sandy silt; very fine sand; lignite; calcareous; gray-----	8.9	33.5
	Silty sand, lacustrine; 65 percent very fine sand; lignite laminations throughout; calcareous; gray-----	6.5	40
	Sandy silt; silty sand; 25 percent very fine sand; lignite; calcareous; gray-----	14.2	54.2
	Clayey silt (glacial till); 30 percent fine sand; gravel; calcareous; gray-----	5.8	60

147-077-34CDB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1886 feet	Date drilled:	3/20/68
	Topsoil-----	1	1
	Clay (glacial till)-----	2.5	3.5
	Sand and gravel, glaciofluvial, brown-----	8.5	12
	Clay (till), sandy, silty; gravel and lignite; gray-----	10	22
	Silty sand, fine, glaciofluvial, gray-----	12	34
	Sandy clay (till), silty; scattered gravel; lignite; gray-----	8	42
	Silty sand, fine, glaciofluvial, gray-----	3	45
	Clay (till), silty, sandy; scattered gravel; lignite; gray-----	52	97
	Silty sand, fine, gray-----	3	100

147-077-34DCB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1889 feet	Date drilled:	5/24/68
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1	1
	Sand and gravel, glaciofluvial, brown-----	14	15
	Clay (glacial till), sandy, silty; scattered gravel and lignite; brown to gray-----	44	59
	Silty sand, glaciofluvial, gray-----	31	90

147-077-35ABD
(Log modified from Driver Well Drilling, Inc.)

		Date drilled:	6/29/72
	Topsoil-----	2	2
	Clay, brown-----	48	50
	Clay, blue-----	15	65
	Rock-----	1	66
	Clay, blue-----	188	254
	Rock-----	1	255
	Clay, blue-----	58	313
	Rock-----	1	314
	Clay, blue-----	13	327
	Rocks and gravel-----	2	329
	Clay-----	16	345
	Rock-----	1	346
	Clay-----	6	352
	Rock-----	3	355
	Clay-----	20	375
	Coarse gravel and rock-----	5	380

147-077-35BAA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1868 feet	Date drilled:	2/01/73
	Topsoil, organic; 20 percent fine sand; calcareous; black-----	1	1
	Silty sand; calcareous nodules; clayey sand; 70 percent fine sand; calcareous; light brown-----	8	9
	Clay, lacustrine; 15 percent fine sand; calcareous; laminated; light reddish brown-----	10.8	19.8
	Clay (glacial till); 30 percent coarse to fine sand; 5 percent fine gravel; lignite throughout; calcareous; reddish brown-----	5.2	25
	Clay (glacial till); clayey silt; lignite; 30 percent sand; subrounded gravel; trace of coarse gravel; calcareous; reddish brown-----	35	60

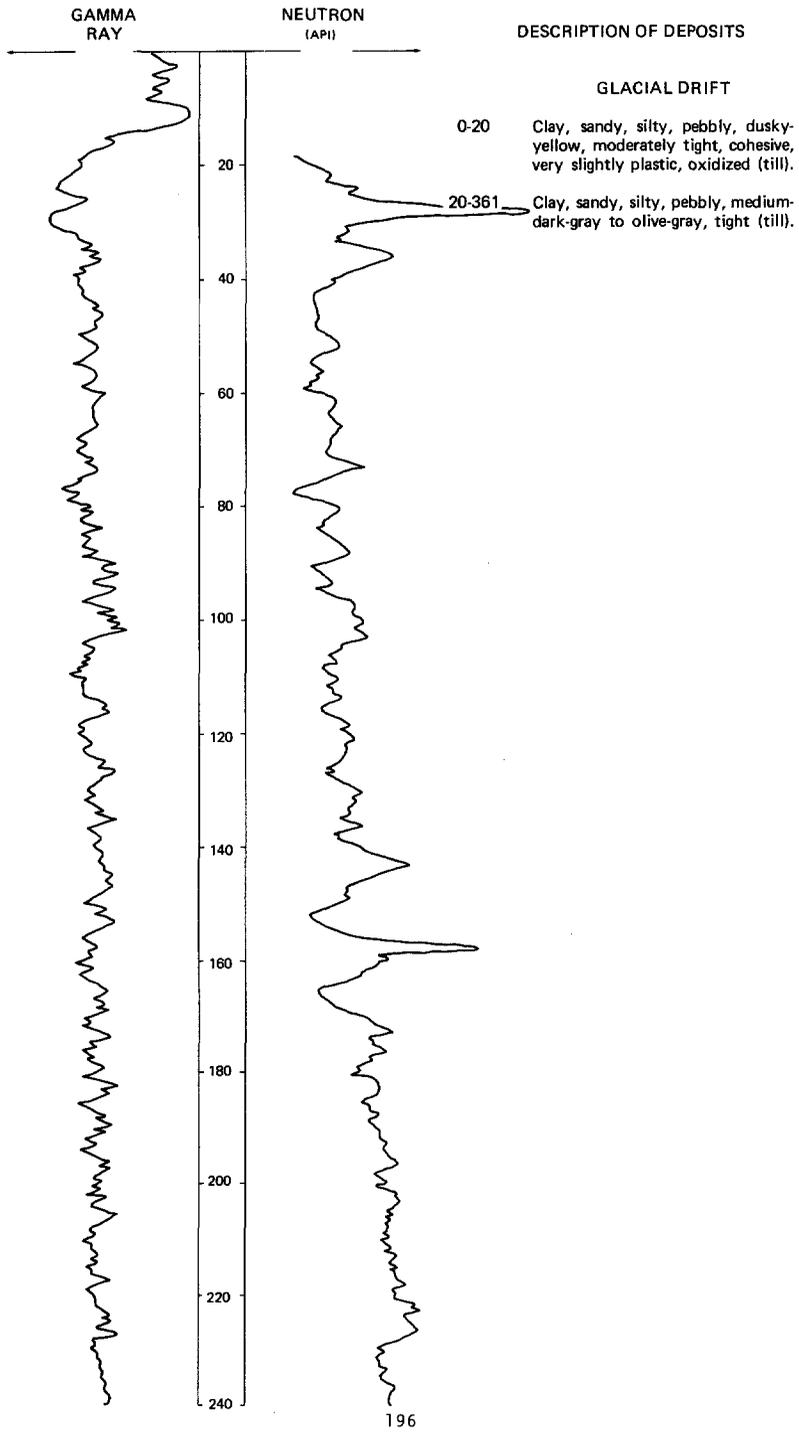
NDSWC 5341

LOCATION: 147-077-36CCC

DATE DRILLED: 6/29/78

ALTITUDE: 1910
(FT. NGVD)

DEPTH: 395
(FT)

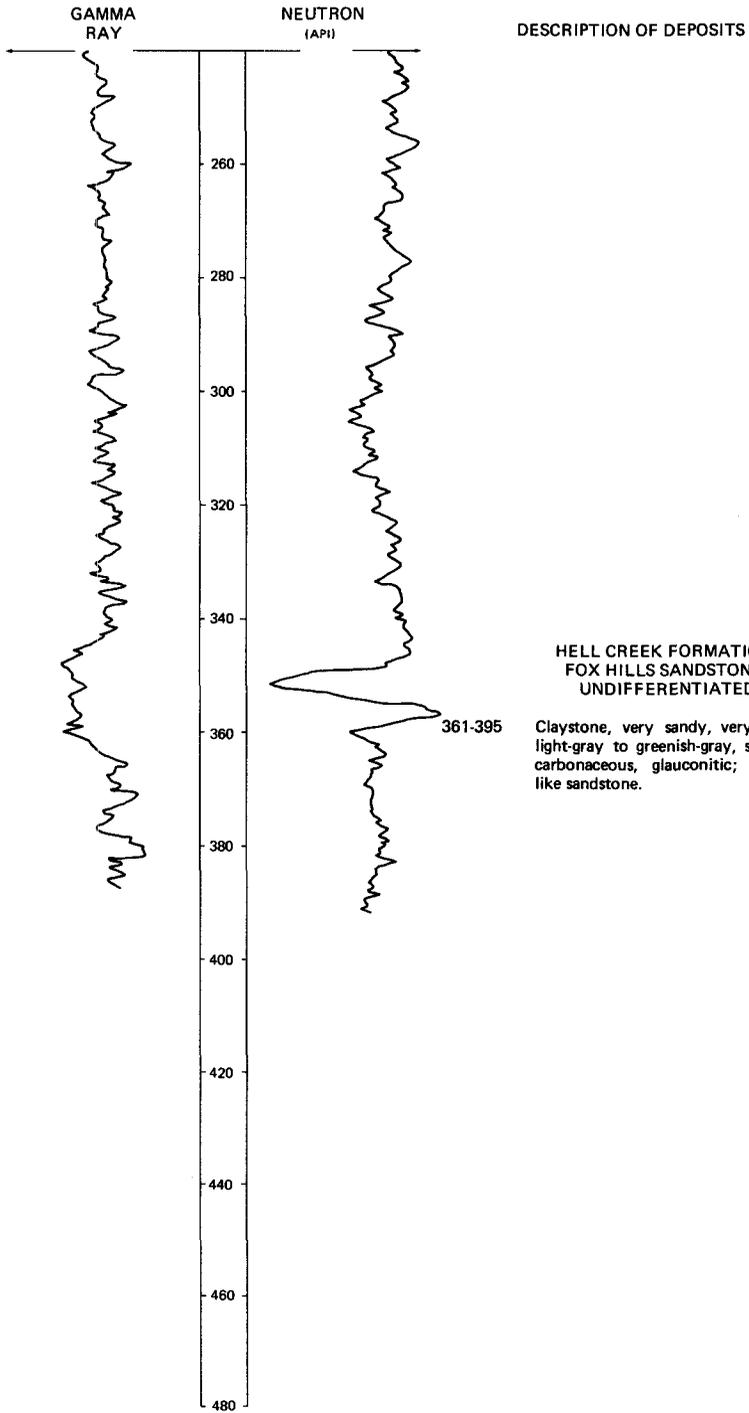


LOCATION: 147-077-36CCC

DATE DRILLED: 6/29/78

ALTITUDE: 1910
(FT, NGVD)

DEPTH: 395
(FT)

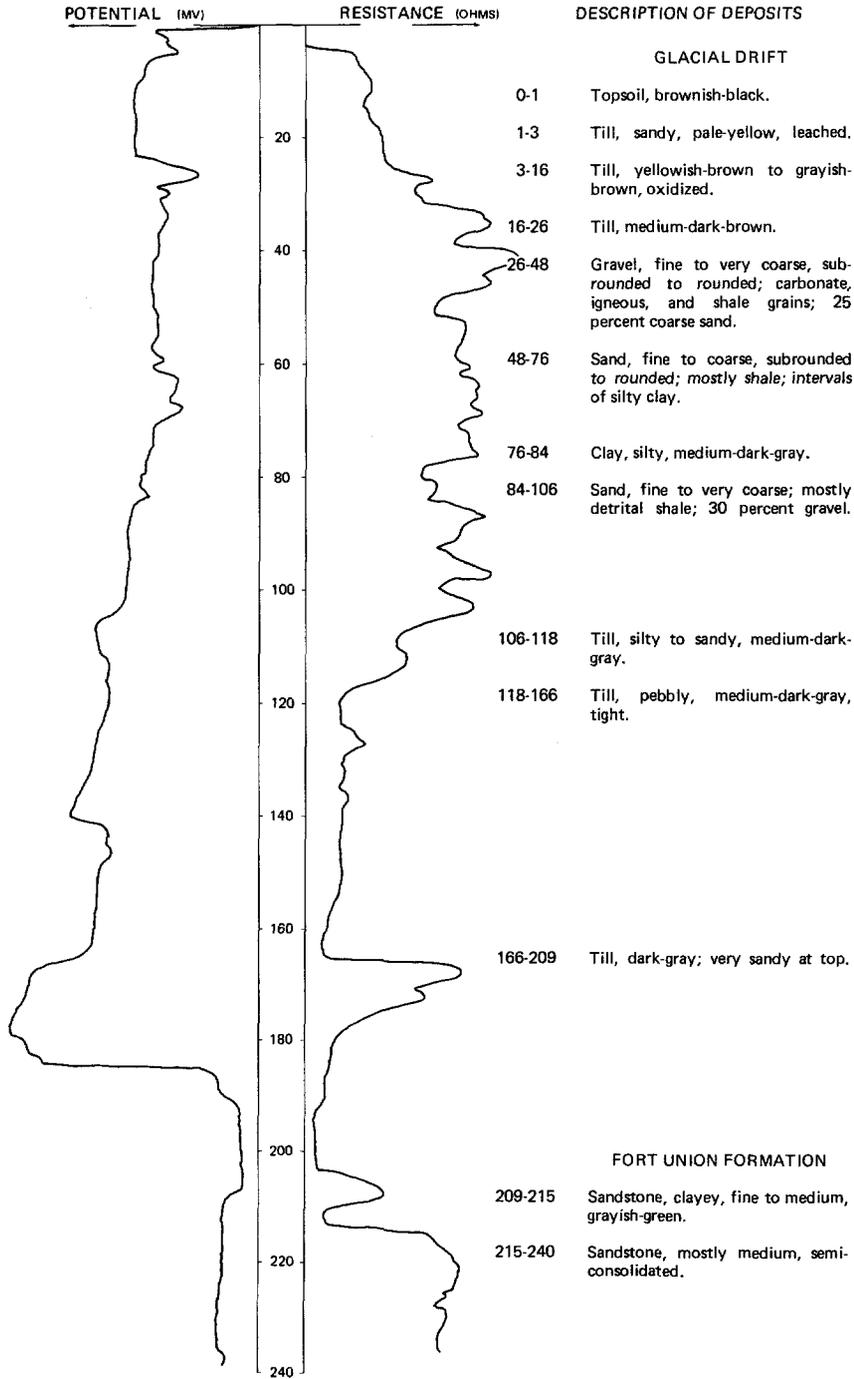


LOCATION: 147-078-03DAD

DATE DRILLED: 9/05/78

ALTITUDE: 1990
(FT, NGVD)

DEPTH: 240
(FT)



147-078-06BBB
NDSWC 3941

Altitude: 1900 feet

Date drilled: 12/04/69

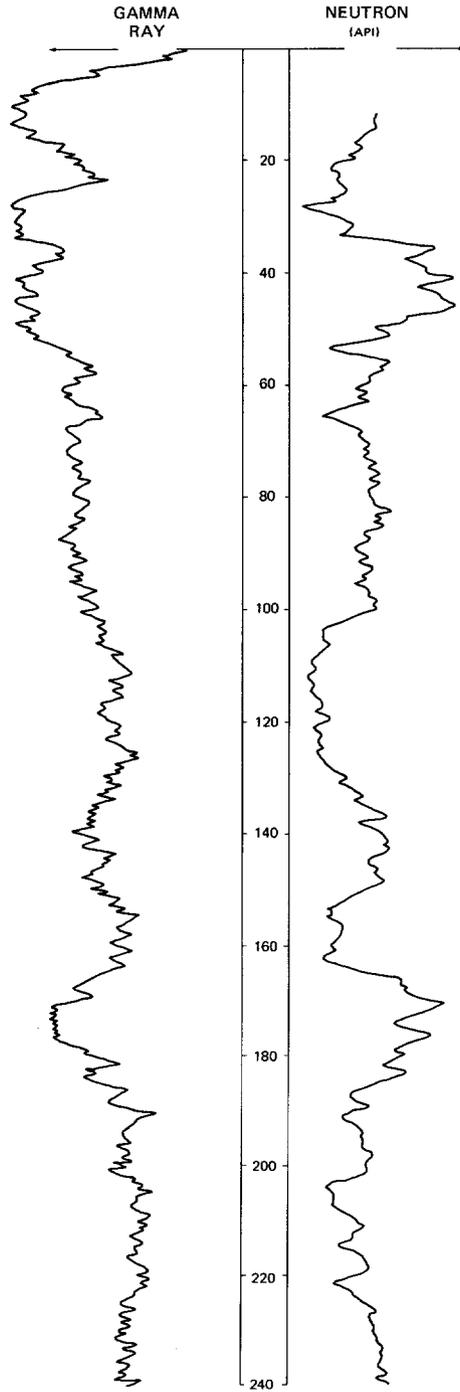
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
Glacial drift:			
	Topsoil, black; sandy loam-----	1	1
	Sand, angular to subrounded, mostly subrounded, iron-stained, oxidized; assorted; lenticular; fine to very coarse with fine to coarse gravel; mainly carbonates and granitics with hard siliceous shale, lignite, and sandstone; taking water-----	37	38
Fort Union Formation:			
	Shale, silty, sandy, tight, slightly hard, chunky to soft and slightly friable, noncalcareous, bentonitic; interbedded variegated grays but mostly light medium gray-----	42	80

LOCATION: 147-078-10DDA

DATE DRILLED: 6/27/78

ALTITUDE: 2000
(FT. NGVD)

DEPTH: 395
(FT)



DESCRIPTION OF DEPOSITS

GLACIAL DRIFT

- 0-17 Sand, fine to very coarse, sub-rounded to subangular, fairly sorted, oxidized; some fine carbonate gravel; 50 percent quartz, 30 percent carbonate, and 20 percent shale and granitic grains.
- 17-26 Clay, silty, dark-gray, smooth, tight, brittle (lacustrine).
- 26-53 Sand, fine to very coarse, mostly medium to coarse, gray, sub-rounded to rounded, well-sorted; mostly quartz; some carbonates and shale.
- 53-322 Clay, sandy, silty, very slightly pebbly, dark-gray to olive-gray, tight, cohesive, brittle; nearly lacustrine; more pebbles after 200 feet; smooth drilling (till?).

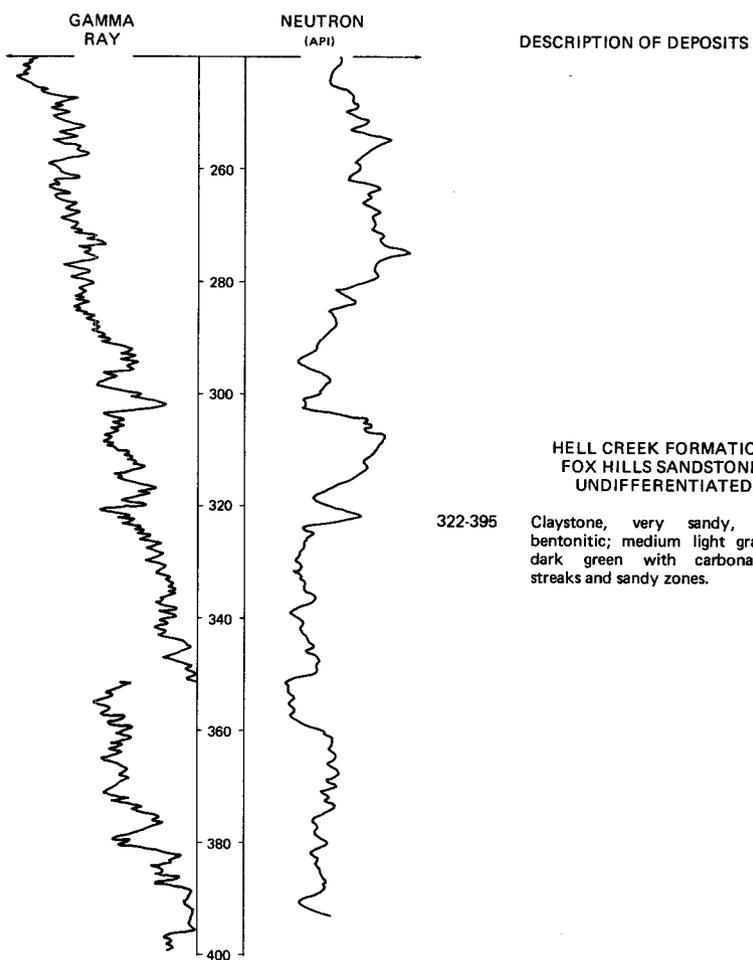
NDSWC 5337, Continued

LOCATION: 147-078-10DDA

DATE DRILLED: 6/27/78

ALTITUDE: 2000
(FT, NGVD)

DEPTH: 395
(FT)



147-078-11DDD
(Log from Russell Drilling Co.)

Altitude: 2000 feet

Date drilled: 11/06/76

GEOLOGIC SOURCE MATERIAL

THICKNESS (FEET) DEPTH (FEET)

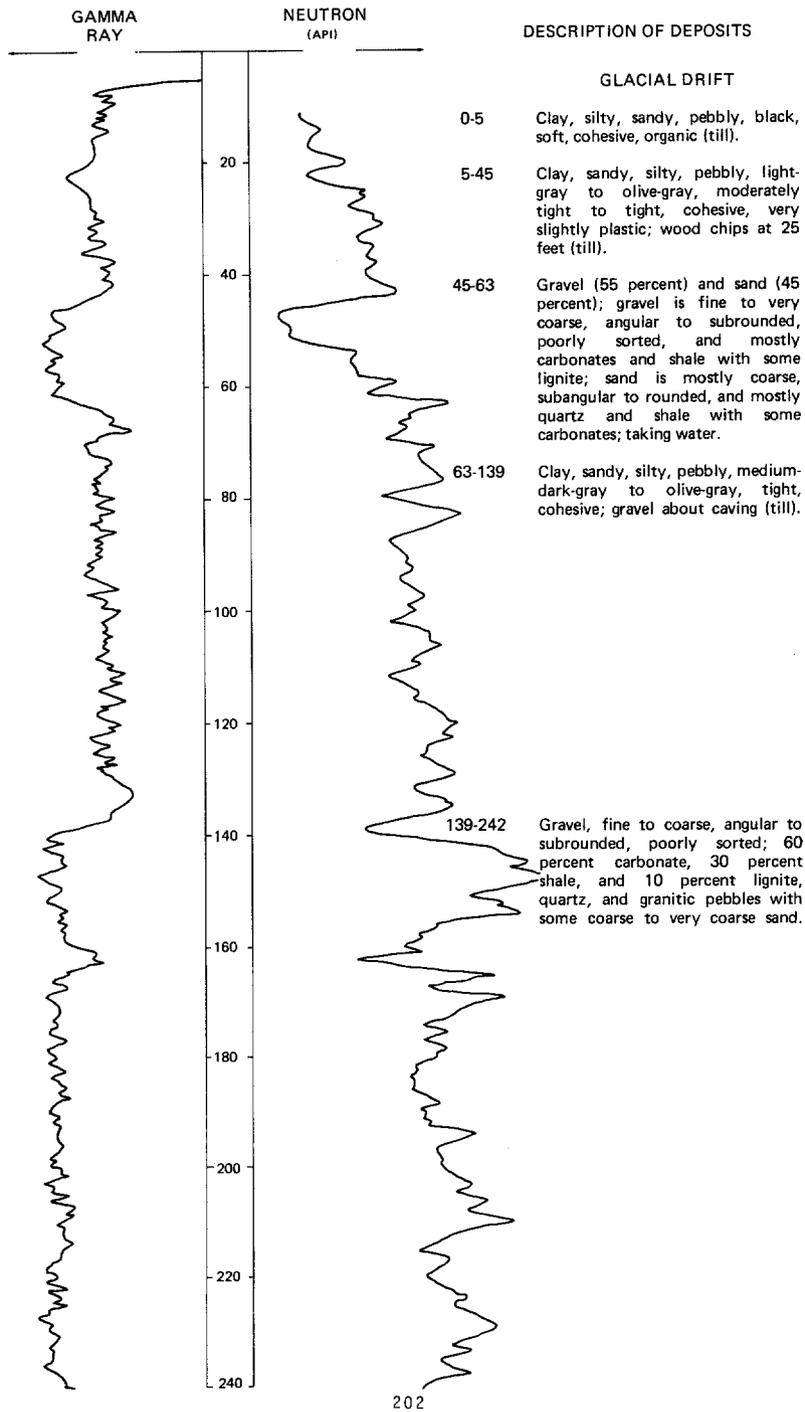
Topsoil-----	1	1
Brown till-----	25	26
Soft blue till-----	79	105
Sandy gravel-----	4	109
Soft till, silty-----	21	130
Sand, coarse; with medium-coarse gravel-----	45	175
Clay-----	2	177

LOCATION: 147-078-14CCC1, 2

DATE DRILLED: 6/23/78

ALTITUDE: 1960
(FT, NGVD)

DEPTH: 595
(FT)

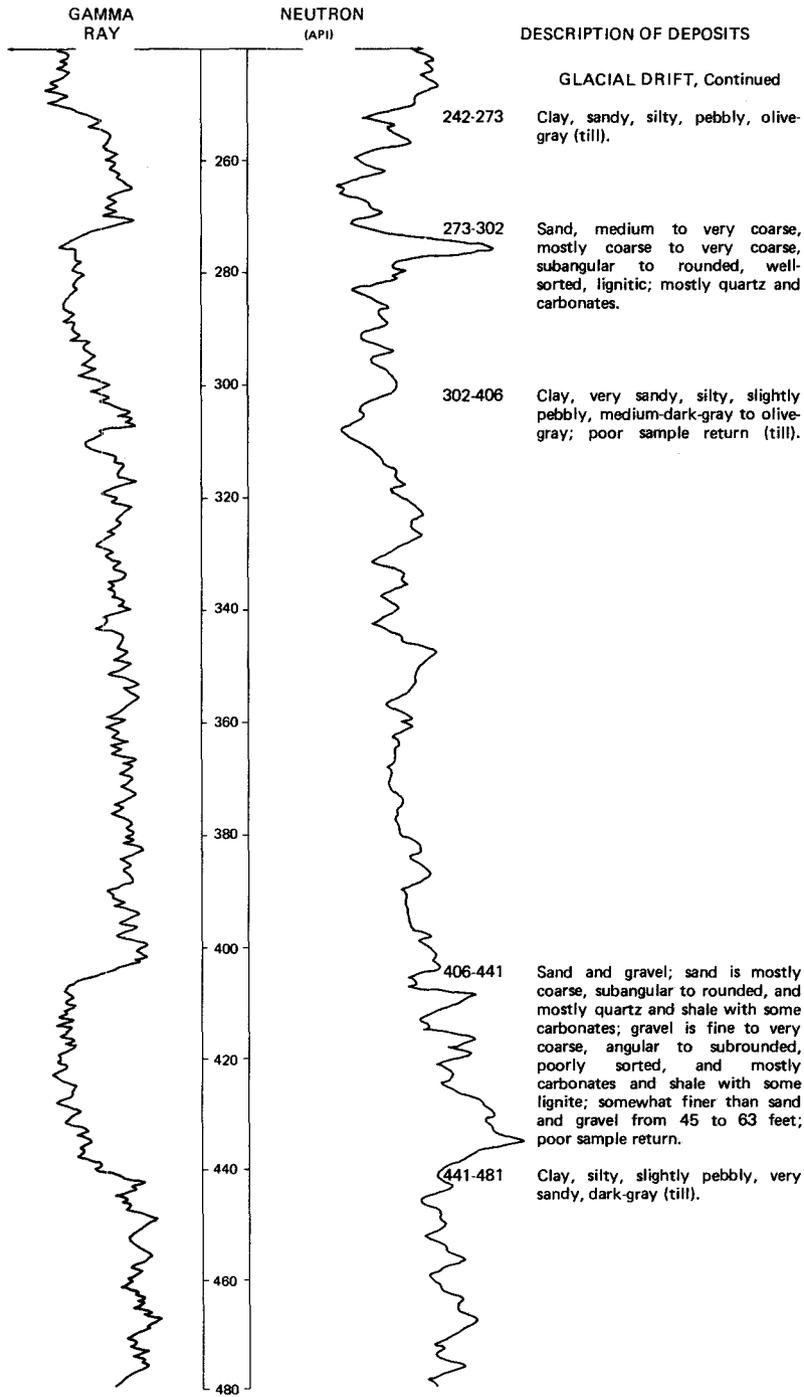


LOCATION: 147-078-14CCC1, 2

DATE DRILLED: 6/23/78

ALTITUDE: 1960
(FT, NGVD)

DEPTH: 595
(FT)

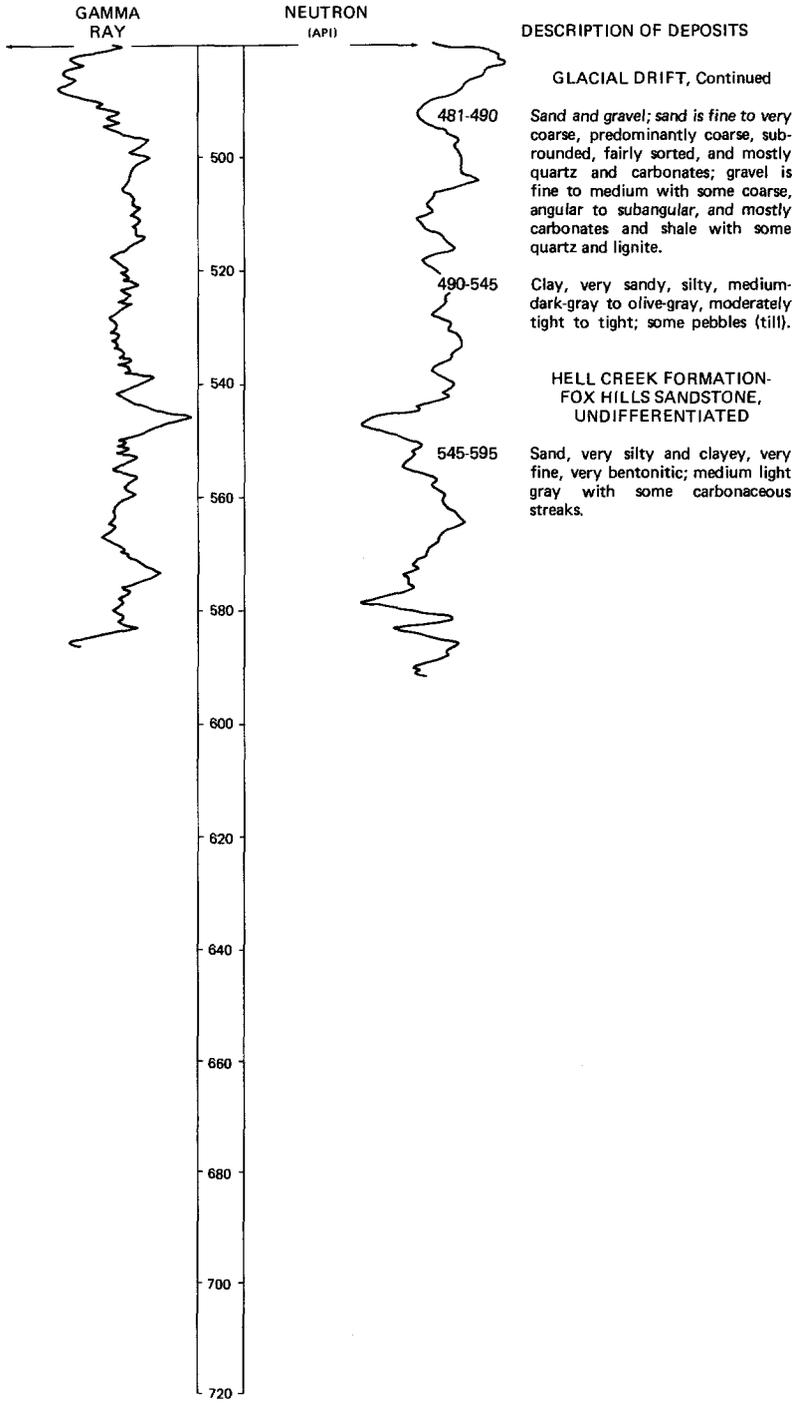


LOCATION: 147-078-14CCC1, 2

DATE DRILLED: 6/23/78

ALTITUDE: 1960
(FT, NGVD)

DEPTH: 595
(FT)

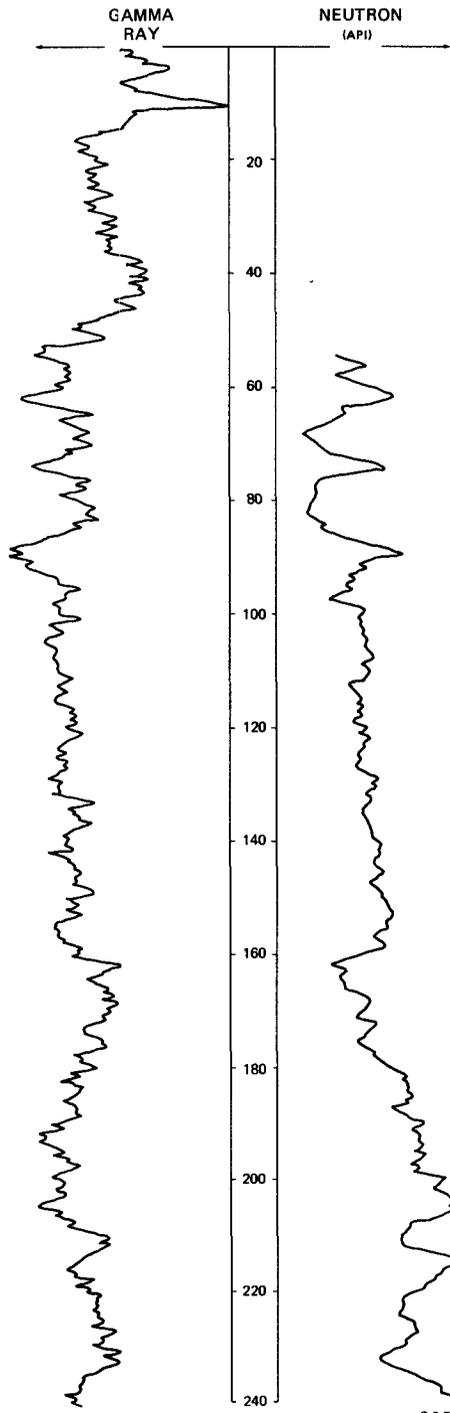


LOCATION: 147-078-26BBB

DATE DRILLED: 6/28/78

ALTITUDE: 1980
(FT, NGVD)

DEPTH: 415
(FT)



DESCRIPTION OF DEPOSITS

GLACIAL DRIFT

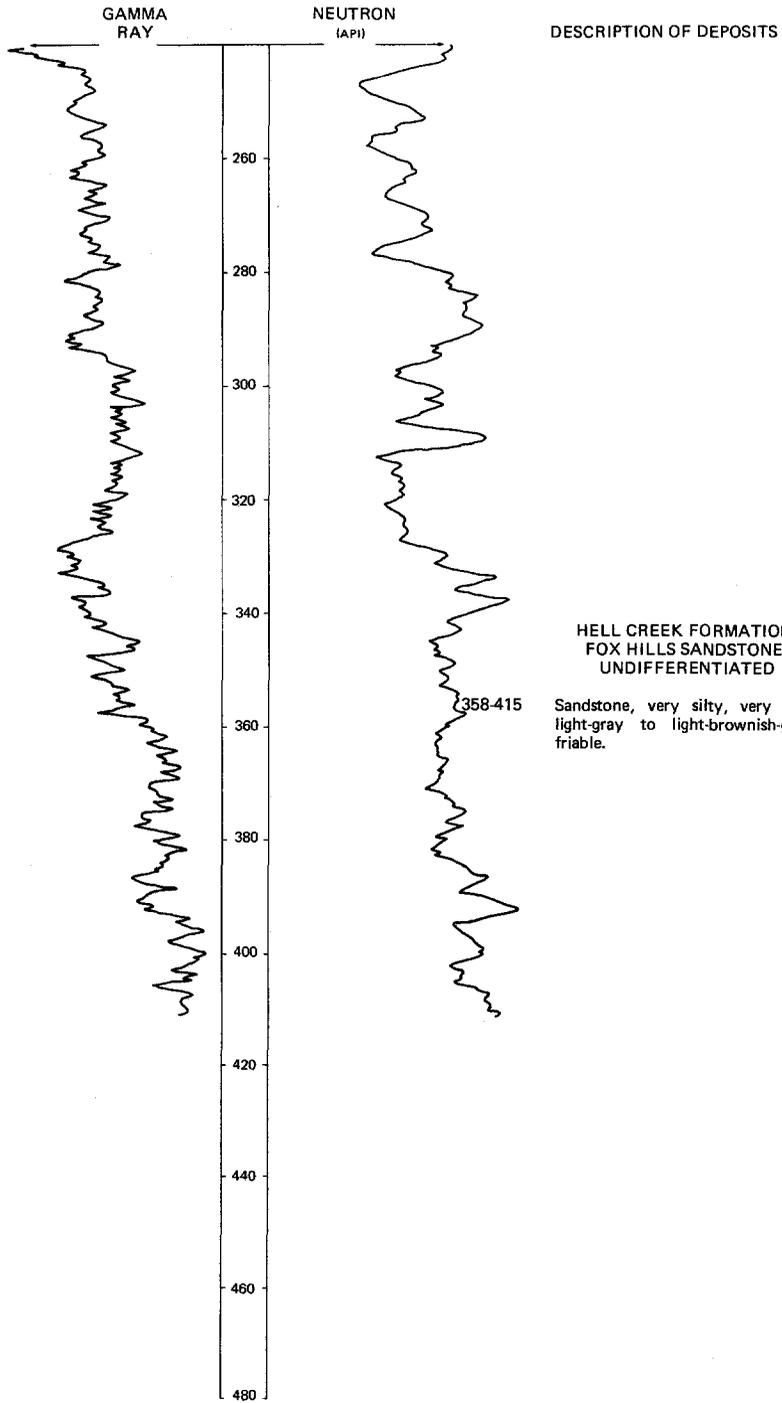
- 0-30 Clay, sandy, silty, pebbly, moderate-yellowish-brown, tight, cohesive, brittle, oxidized (till).
- 30-358 Clay, sandy, silty, pebbly, medium-dark-gray to olive-gray; resembles lacustrine deposits after 35 feet; small sand and gravel lenses from 55 to 75 feet; more pebbles after 200 feet (till).

LOCATION: 147-078-26BBB

DATE DRILLED: 6/28/78

ALTITUDE: 1980
(FT, NGVD)

DEPTH: 415
(FT)

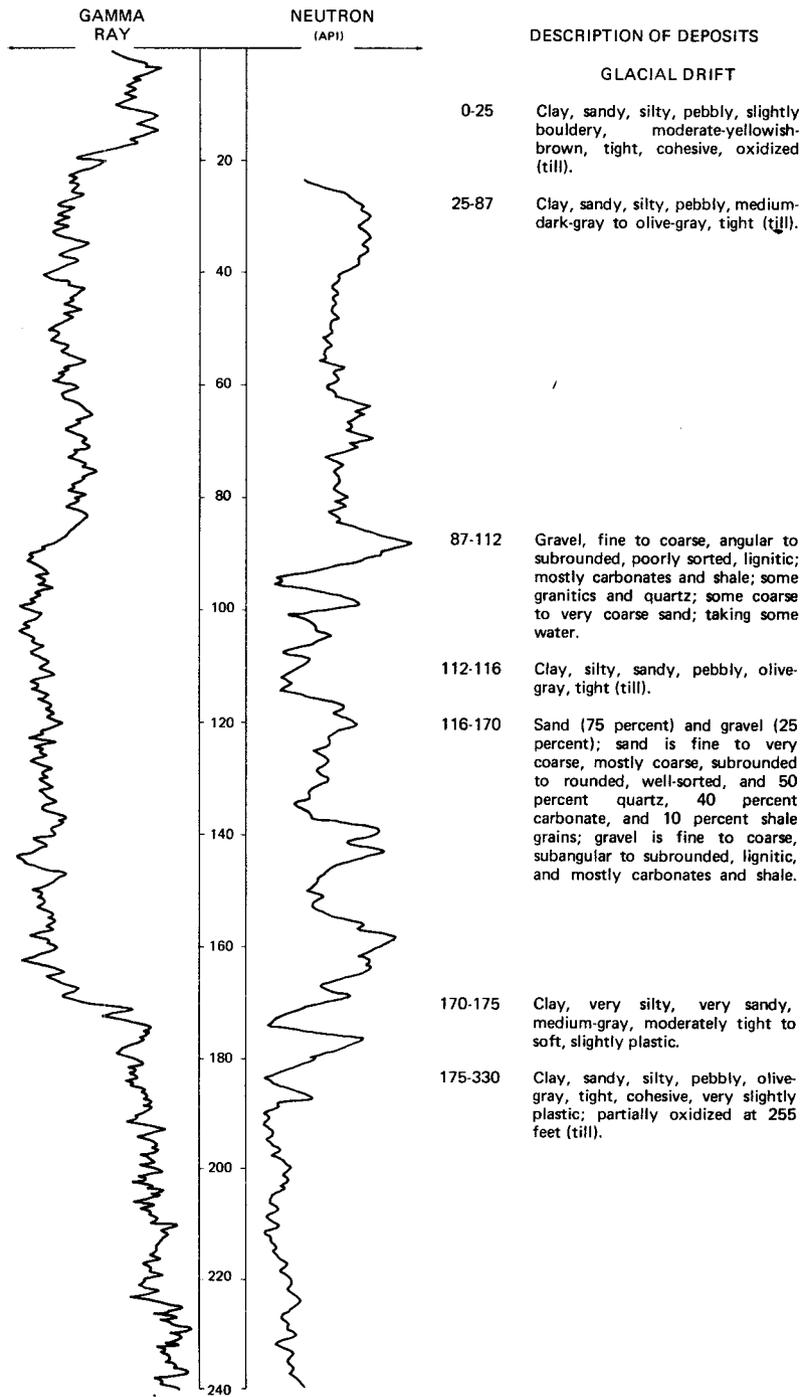


LOCATION: 147-078-27DDD

DATE DRILLED: 6/28/78

ALTITUDE: 1940
(FT, NGVD)

DEPTH: 375
(FT)

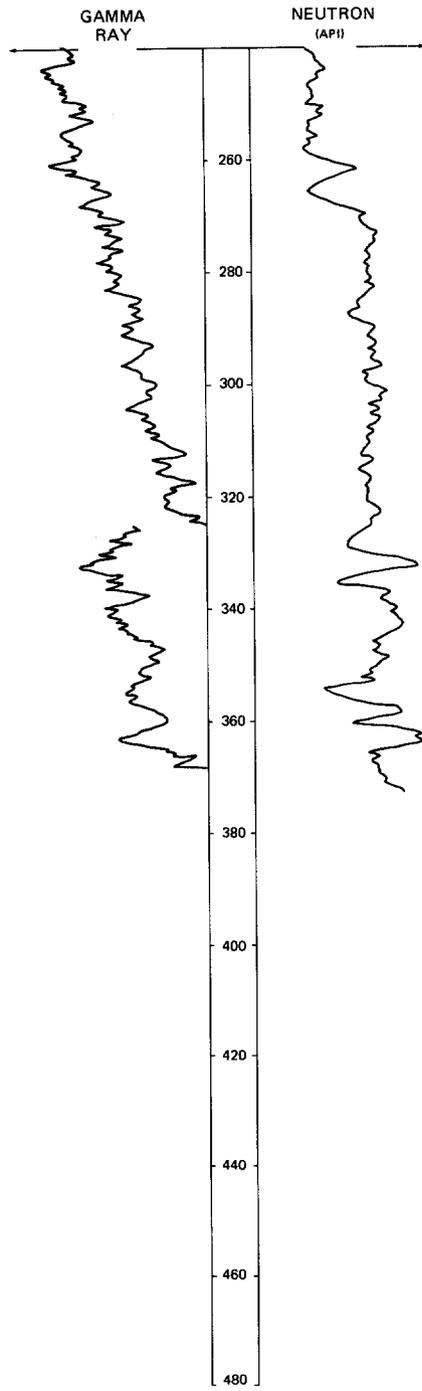


LOCATION: 147-078-27DDD

DATE DRILLED: 6/28/78

ALTITUDE: 1940
(FT, NGVD)

DEPTH: 375
(FT)



DESCRIPTION OF DEPOSITS

HELL CREEK FORMATION-
FOX HILLS SANDSTONE,
UNDIFFERENTIATED

330-375 Sandstone, very silty, very fine,
medium-light-gray to greenish-gray
to black, organic and carbonaceous.

147-078-30BCC1
NDSWC 3939

Altitude:	1940 feet	Date drilled:	12/02/69
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
Glacial drift:			
	Topsoil, dark-brownish-black; fine sandy loam-----	1	1
	Sand, angular to subrounded; assorted; lenticular; fine to very coarse with fine and medium gravel; fairly heavy iron staining at 40 feet; mostly carbonates (60 percent) with granitics and dark-gray indurated siliceous shale; some coarse gravel and cobbles; 5 percent lignite and miscellaneous; taking water-----	64	65
	Clay, silty, sandy, pebbly, cobbly, olive-gray, moderately soft, cohesive, stiff (till)-----	81	146
	Gravel, sandy, fine to coarse, angular to subrounded; assorted; lenticular; mostly carbonates with granitics and siliceous shale with minor amounts of chert, sandstone, iron silicates, and lignite-----	33	179
	Sand, fine to medium, dark-gray, subangular to subrounded, moderately well sorted, quartzose, lignitic, calcareous-----	21	200
	Sand, clayey, very fine to fine, black, moderately cohesive, nonplastic, highly organic, oily; with lignite; smears easily-----	16	216
	Clay, silty, olive-gray to black, moderately soft, tight, cohesive, moderately plastic, stiff, organic, oily-----	6	222
	Gravel, sandy, fine to coarse, mostly subangular; assorted; carbonates with granitics and siliceous shales; taking water-----	14	236
	Silt, clayey, olive-gray, moderately soft and cohesive, calcareous; with very fine sand; organic smears-----	36	272
	Rocks-----	3	275
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Shale, silty, sandy, mostly medium gray, moderately soft to hard, tight, brittle, noncalcareous, micaceous; variegated grays with green and brown-----	45	320

147-078-30BCC2
NDSWC 3940

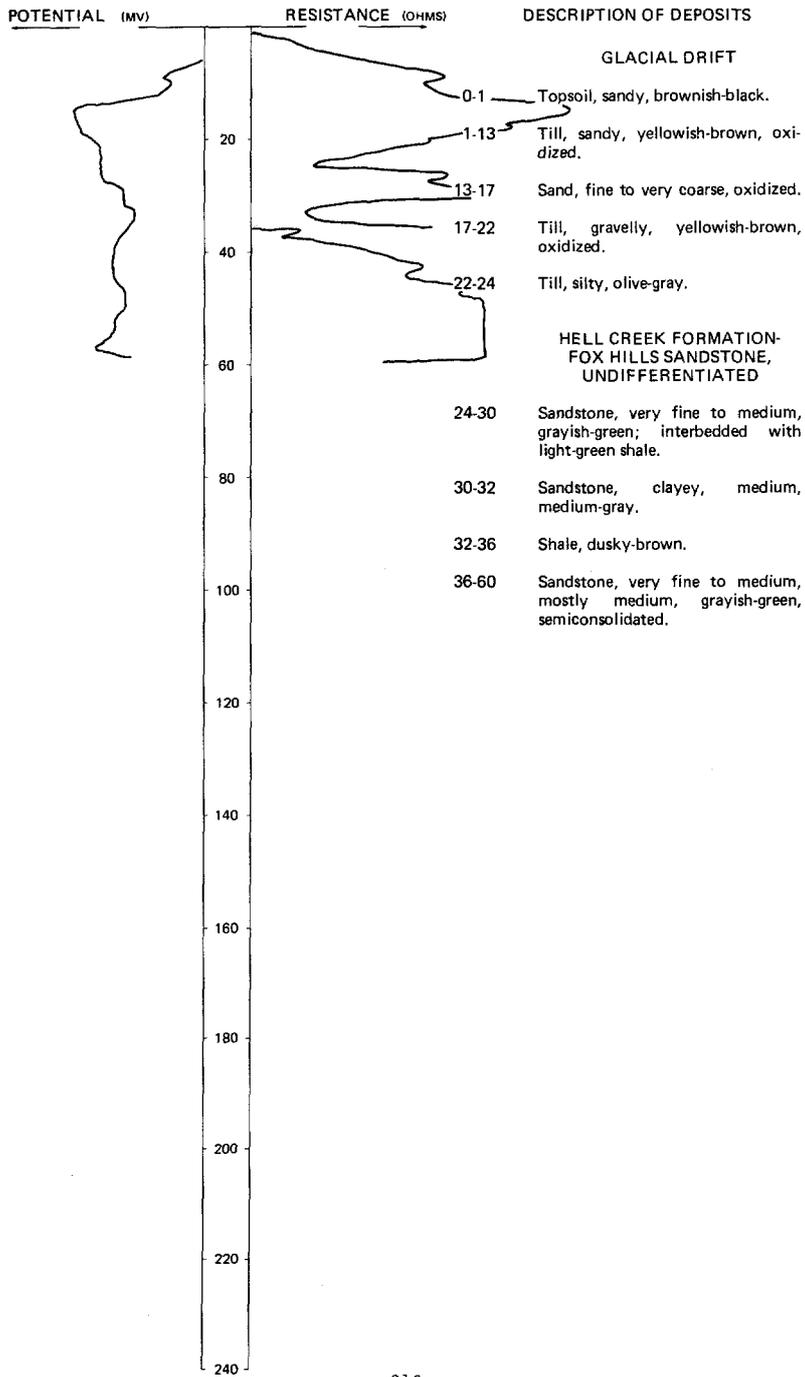
Altitude:	1940 feet	Date drilled:	12/04/69
	Topsoil, dark-brownish-black; sandy loam-----	1	1
	Sand, mostly medium to coarse, angular to subrounded; very assorted and lenticular; fine to very coarse with gravel and cobbles; oxidized to 40 feet; mostly carbonates with granitics and shale; lignite; taking water-----	59	60

LOCATION: 148-074-04AAA

DATE DRILLED: 8/23/78

ALTITUDE: 1640
(FT, NGVD)

DEPTH: 60
(FT)



148-074-04CCC
NDSWC 10229

Altitude:	1620 feet	Date drilled:	8/23/78
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
Glacial drift:			
	Topsoil, sandy, brownish-black-----	1	1
	Gravel, sandy, fine to very coarse, rounded, oxidized-----	1	2
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Sandstone, very clayey, fine to medium, very light gray, leached-----	6	8
	Sandstone, very clayey, fine to medium, light-gray, leached-----	15	23
	Sandstone, very clayey, medium, light-gray-----	8	31
	Shale, brownish-gray, carbonaceous-----	1	32
	Sandstone, very clayey, medium, grayish-green-----	8	40

148-074-08CCC
NDSWC 10231

Altitude:	1700 feet	Date drilled:	8/23/78
Glacial drift:			
	Topsoil, sandy, brownish-black-----	1	1
	Till, sandy and gravelly, yellowish-brown-----	8	9
	Silt, sandy, dark-brown, oxidized-----	7	16
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Shale, medium-dark-brown, fractured, partially oxidized-----	5	21
	Shale, silty, dusky-brown, carbonaceous-----	11	32
	Shale, silty, medium-dark-gray-----	8	40

148-074-08DDD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1666 feet	Date drilled:	6/25/70
	Topsoil, sandy, black-----	2	2
	Sand, gravelly, brown-----	4.5	6.5
	Clay (glacial till); sand; brown-----	32.5	39
	Sand; coarse gravel; brown to gray-----	18	57

148-074-15BCC
NDSWC 10230

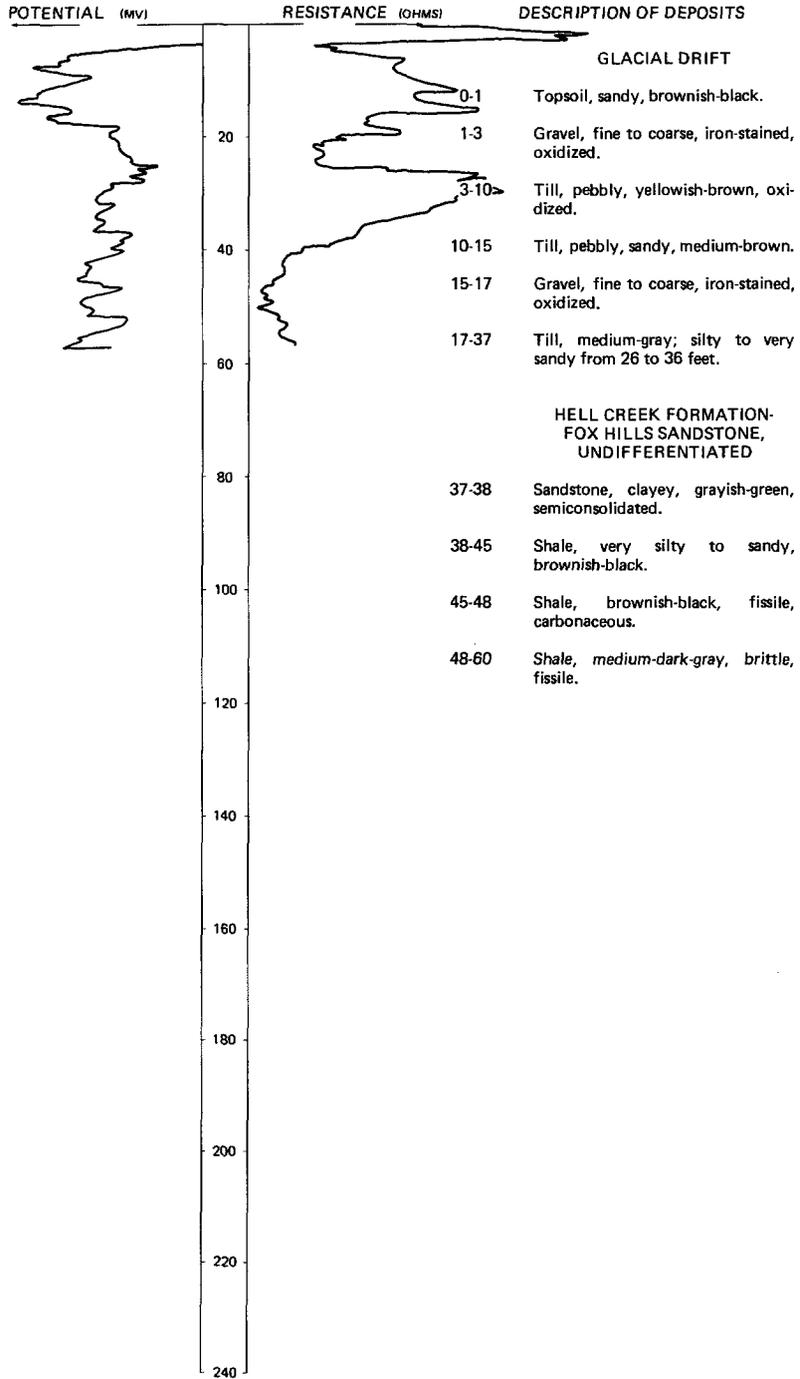
Altitude:	1655 feet	Date drilled:	8/23/78
Glacial drift:			
	Topsoil, sandy, brownish-black-----	1	1
	Sand, gravelly, fine to very coarse, oxidized-----	11	12
	Gravel, sandy to silty, fine to medium-----	6	18
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Sandstone, clayey, fine to medium, very light gray, leached-----	15	33
	Sandstone, clayey, fine to medium, pale-green, semiconsolidated-----	7	40

LOCATION: 148-074-19BBB

DATE DRILLED: 8/24/78

ALTITUDE: 1746
(FT, NGVD)

DEPTH: 60
(FT)

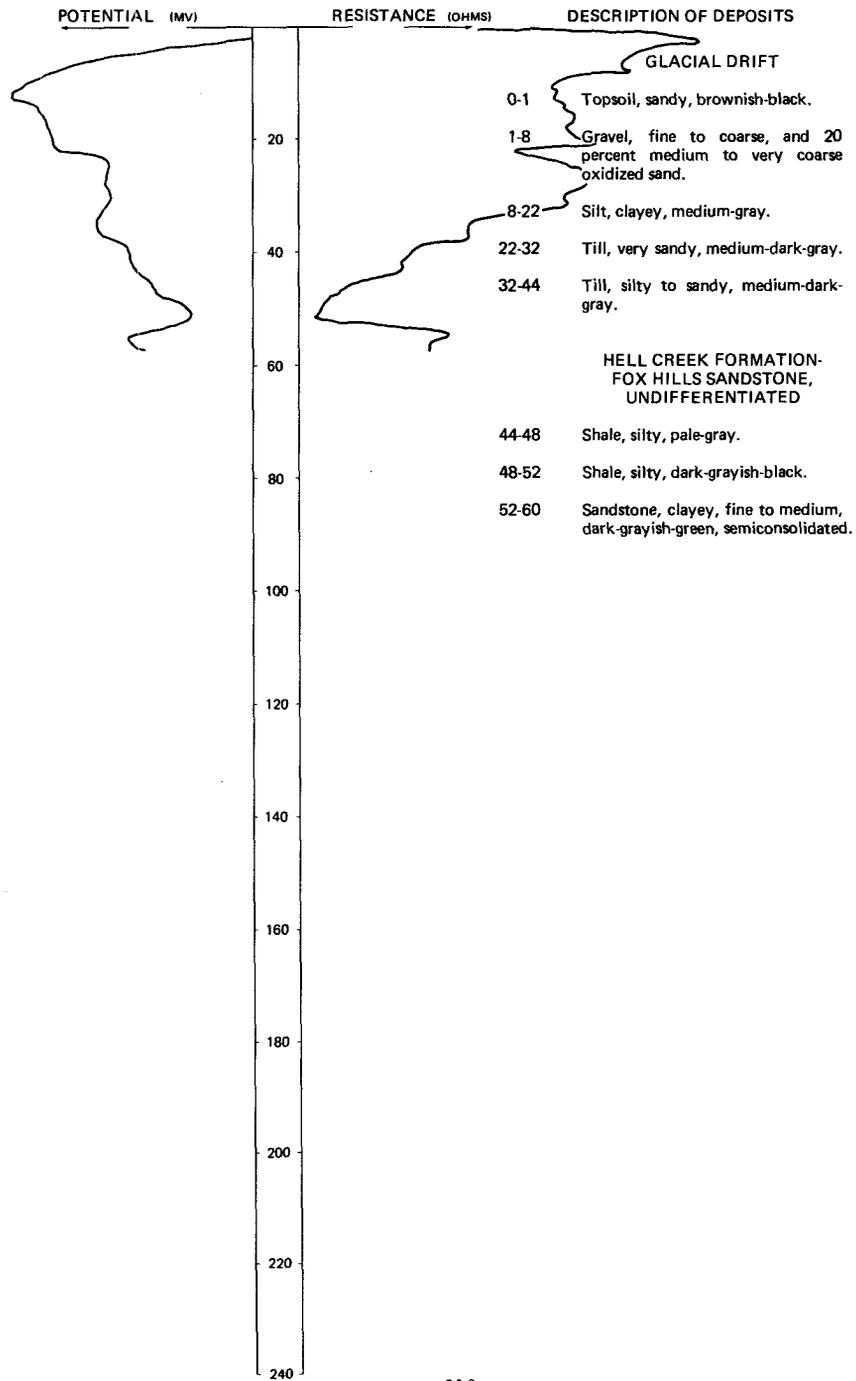


LOCATION: 148-075-09BAB

DATE DRILLED: 8/23/78

ALTITUDE: 1660
(FT, NGVD)

DEPTH: 60
(FT)



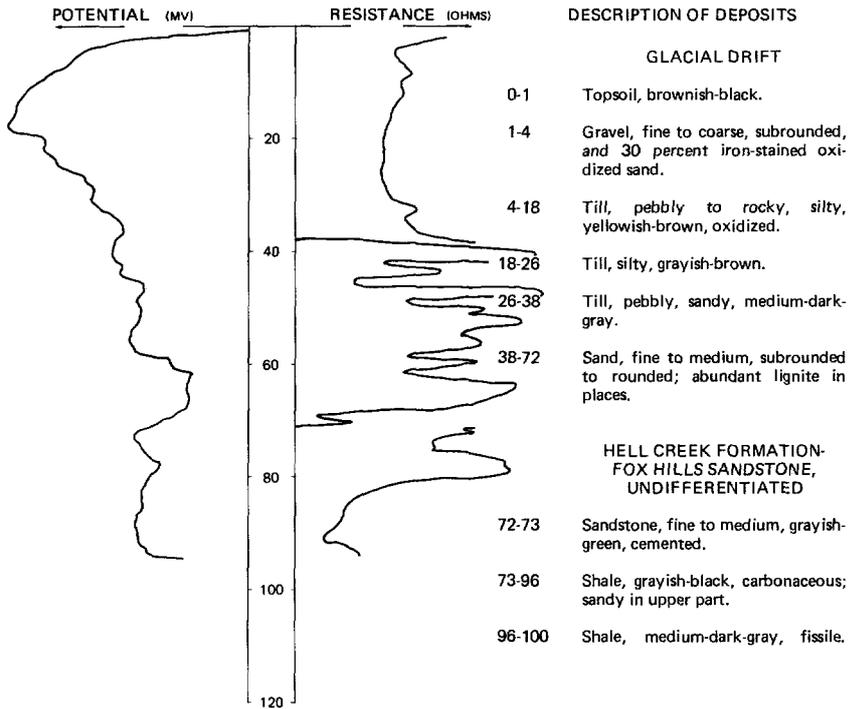
NDSWC 10235

LOCATION: 148-075-25CCC

DATE DRILLED: 8/24/78

ALTITUDE: 1753
(FT. NGVD)

DEPTH: 100
(FT)



148-076-03BBB
(Log modified from U.S. Bureau of Reclamation)

Altitude: 1801 feet

Date drilled: 3/30/73

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, black	1	1
	Clay (glacial till), sandy, brown	15	16
	Sand, silty; some clay; some lignite; brown to gray	24.5	40.5
	Clay (till), sandy; lignite; gray	4.5	45

148-076-04DDC
(Log modified from U.S. Bureau of Reclamation)

Altitude: 1796 feet

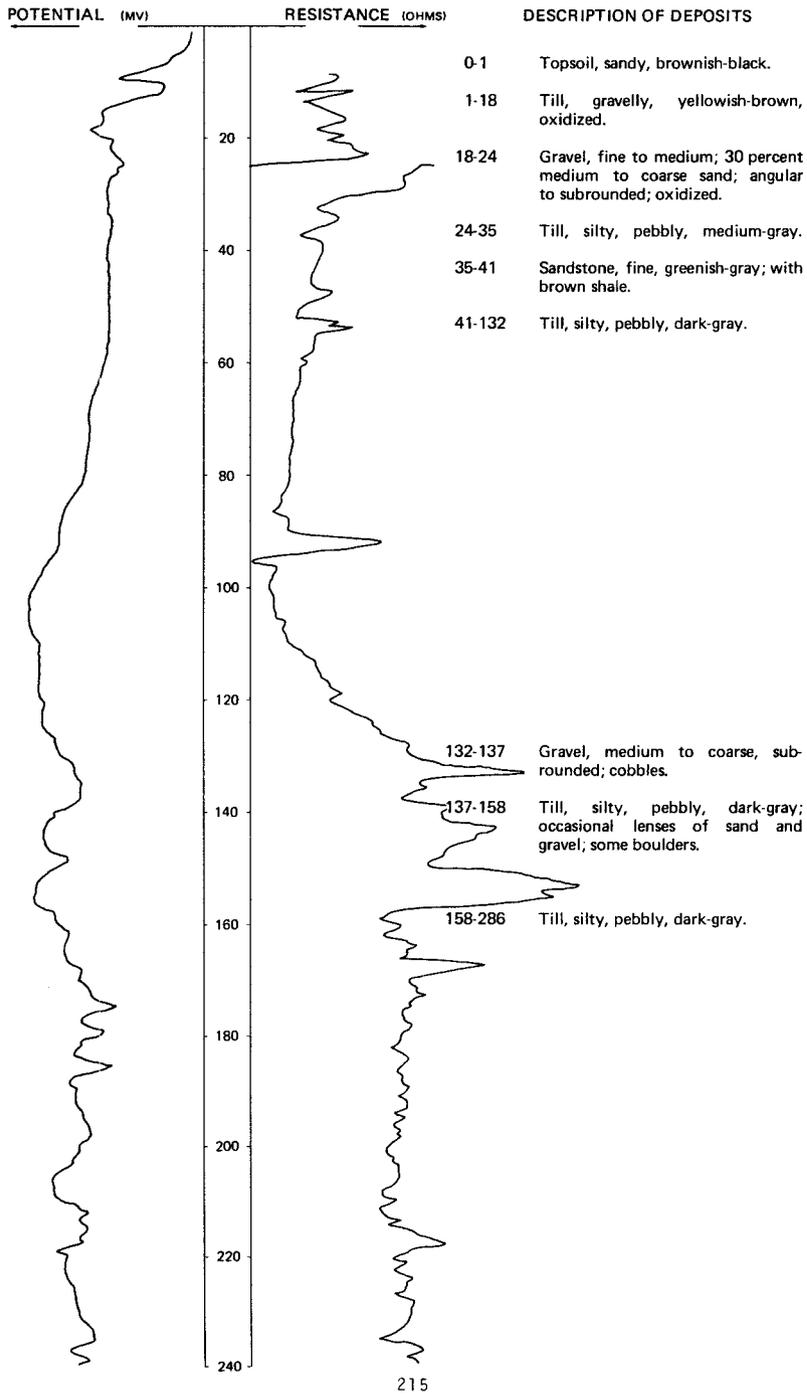
Date drilled: 4/19/55

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil	0.7	0.7
	Clay (glacial till), sandy, brown	21.3	22
	Sand, poorly graded; trace of clay; fine; brown	2.2	24.2
	Clay (till), sand, and silt; gray	25.8	50

NDSWC 11016

LOCATION: 148-076-04DDD
ALTITUDE: 1785
(FT, NGVD)

DATE DRILLED: 8/09/79
DEPTH: 460
(FT)



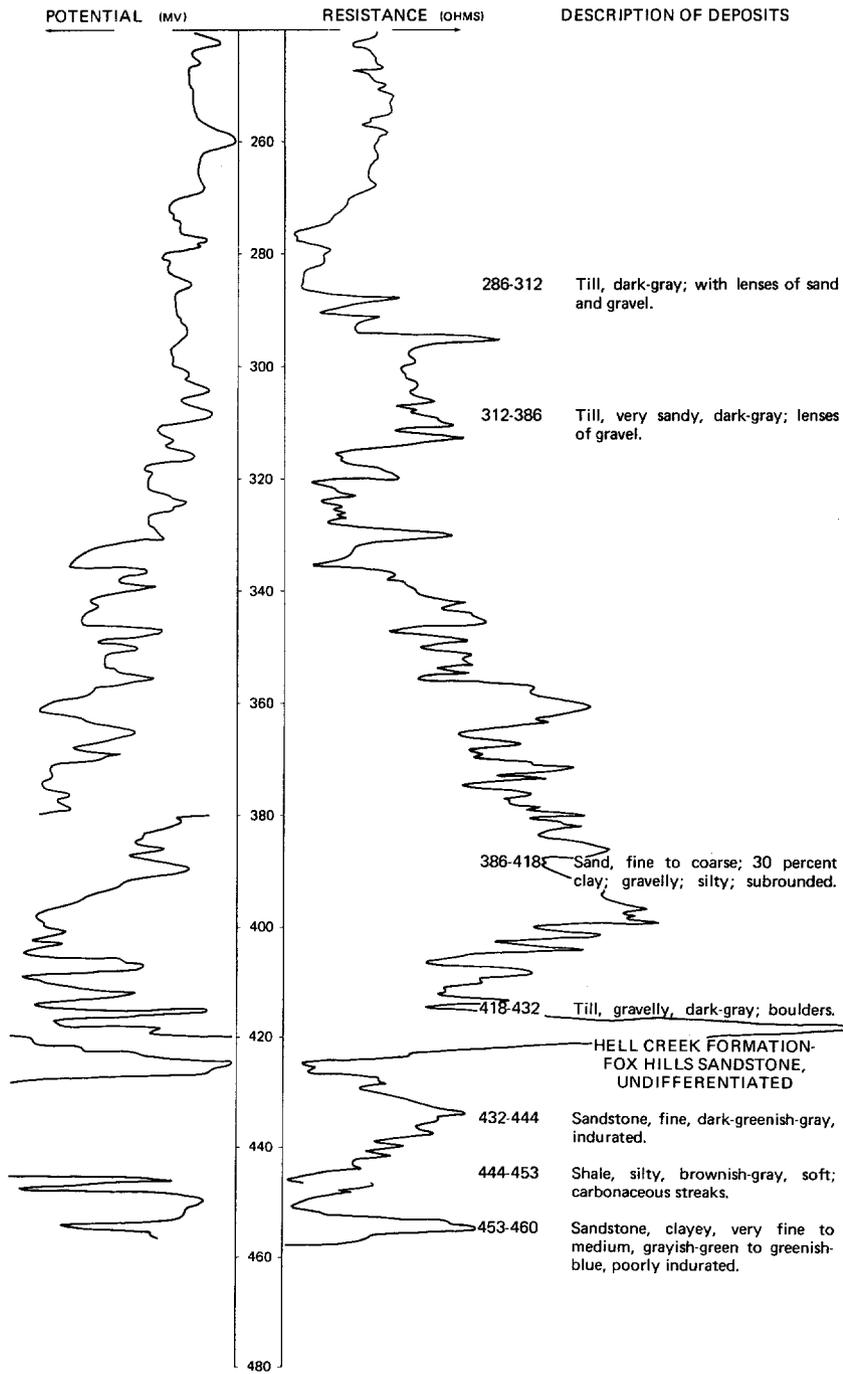
NDSWC 11016, Continued

LOCATION: 148-076-04DDD

DATE DRILLED: 8/09/79

ALTITUDE: 1785
(FT, NGVD)

DEPTH: 460
(FT)

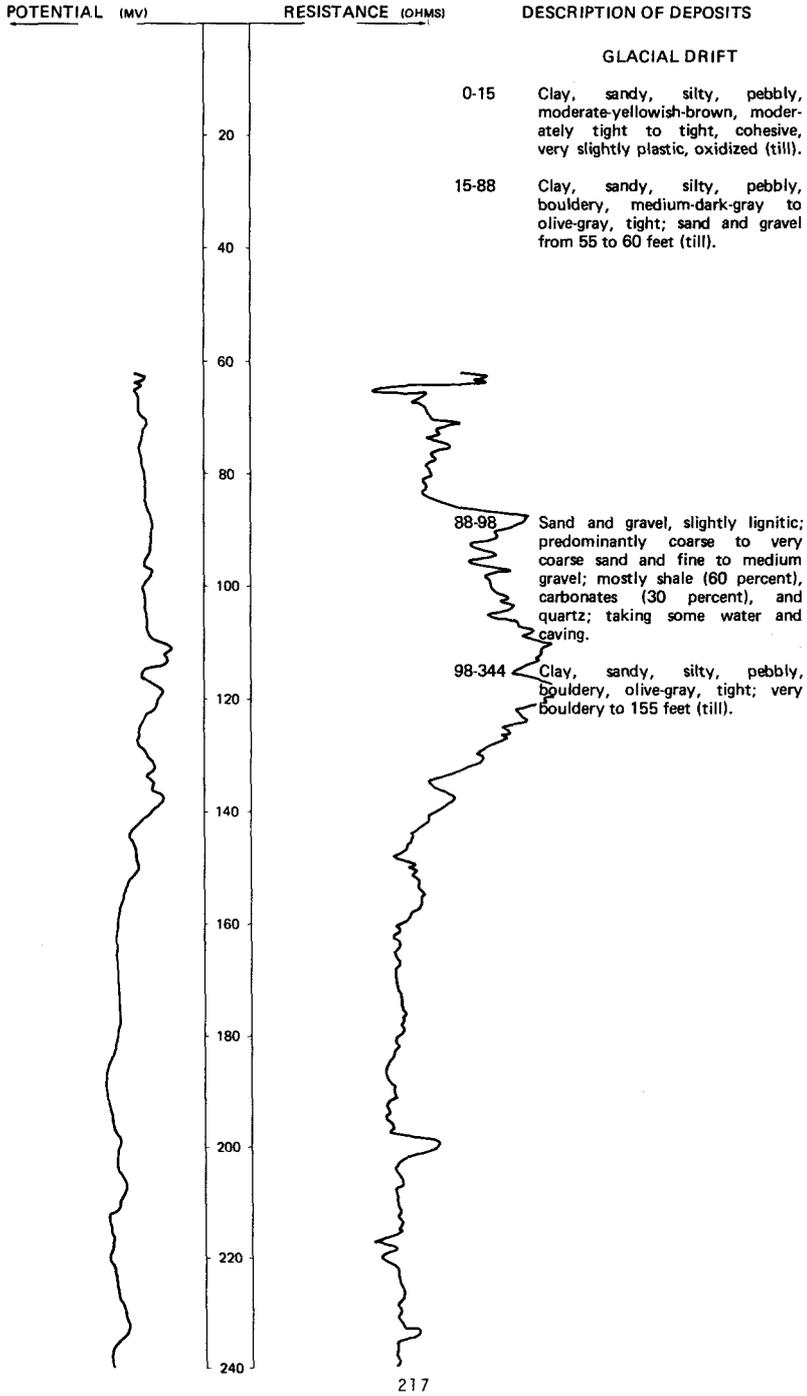


LOCATION: 148-076-07DDD

DATE DRILLED: 6/20/78

ALTITUDE: 1790
(FT. NGVD)

DEPTH: 455
(FT)

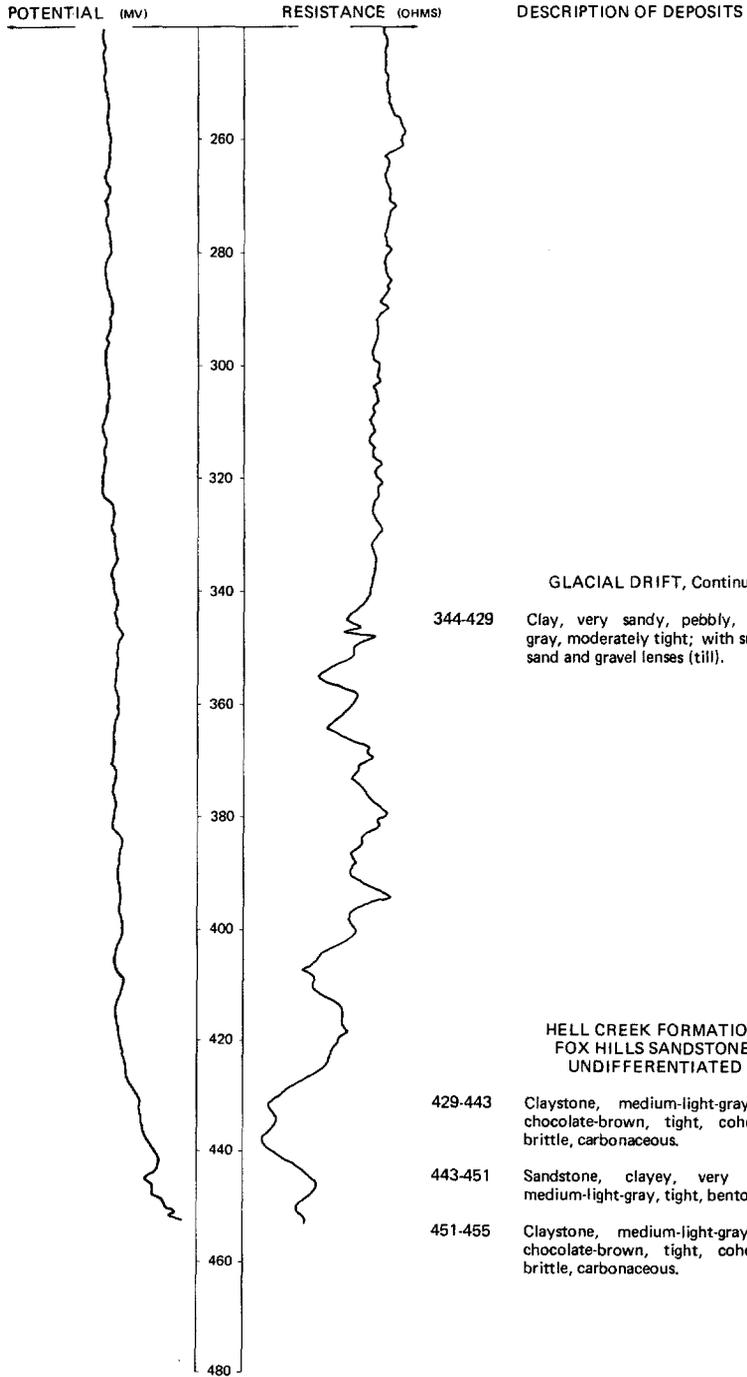


LOCATION: 148-076-07DDD

DATE DRILLED: 6/20/78

ALTITUDE: 1790
(FT, NGVD)

DEPTH: 455
(FT)



148-076-09CDD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1800 feet	Date drilled:	3/21/68
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, black-----	0.5	0.5
	Silty clay, brown-----	7	7.5
	Clay (glacial till), brown-----	6.5	14
	Sand and gravel, brown-----	4	18
	Silty clay (till), gray-----	4	22
	Boulder-----	1	23
	Sandy shale, gray-----	2	25
	Silty shale, gray-----	25	50

148-076-09DCC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1801 feet	Date drilled:	3/07/73
	Topsoil-----	1	1
	Clay, sandy, brown-----	15.5	16.5
	Clay (glacial till); some lignite; gray-----	5	21.5
	Sand, loose, brown-----	2	23.5
	Sandy clay (till), gray-----	5.5	29
	Sand; some gravel and lignite; gray-----	3	32
	Clay (till), silty and sandy, gray-----	8	40

148-076-09DDC
(Log from Feickert Drilling Co.)

Altitude: 1800 feet		Date drilled: 5/17/74	
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Clay; with stones	10	10
	Rocks	5	15
	Clay	2	17
	Gravel and rock	8	25
	Clay	60	85
	Sand; gravel	3	88
	Clay and shale; with coal streaks	182	270
	Sand	5	275
	Clay	25	300
	Sand and gravel	30	330
	Clay and shale	25	355
	Sand and gravel	30	385
	Clay	25	410
	Clay, sandy (siltstone)	5	415
	Sand, fine, dark-gray	5	420
	Siltstone	25	445

148-076-16ABB
(Log modified from U.S. Bureau of Reclamation)

Altitude: 1798 feet		Date drilled: 4/18/55	
	Clay (glacial till), very sandy	24.4	24.4
	Clay (till); less sandy	25.6	50

148-076-16CBC
(Log modified from U.S. Bureau of Reclamation)

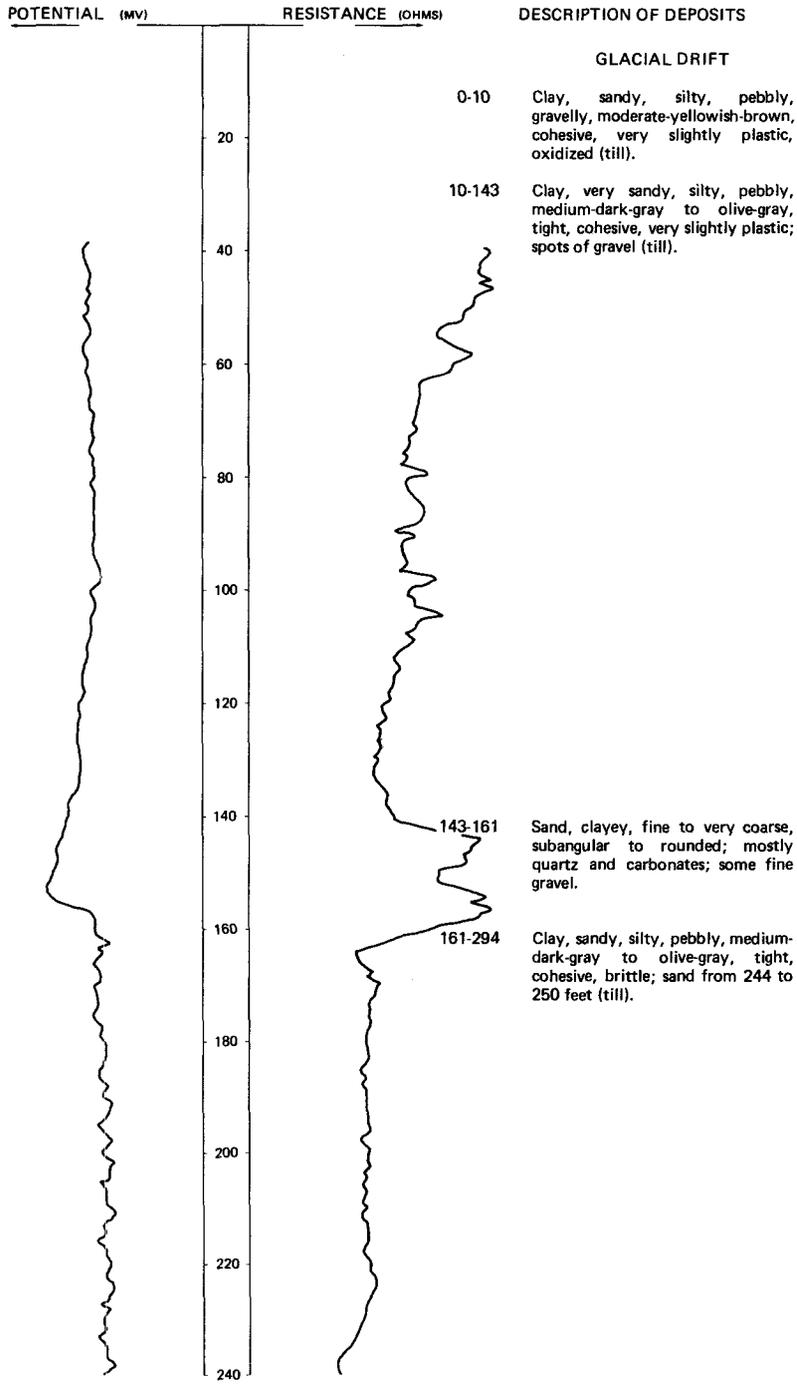
Altitude: 1799 feet		Date drilled: 4/14/55	
	Topsoil	1.2	1.2
	Clay (glacial till), sandy, fine to medium; little gravel; brown	14.3	15.5
	Clay (till), sandy, fine to medium; little gravel; gray	9.7	25.2
	Sand, medium, uniform; trace of clay; gray	7	32.2
	Silt, sandy, clayey, glaciofluvial, gray	17.8	50

LOCATION: 148-076-17AAB

DATE DRILLED: 11/09/77

ALTITUDE: 1780
(FT, NGVD)

DEPTH: 482
(FT)

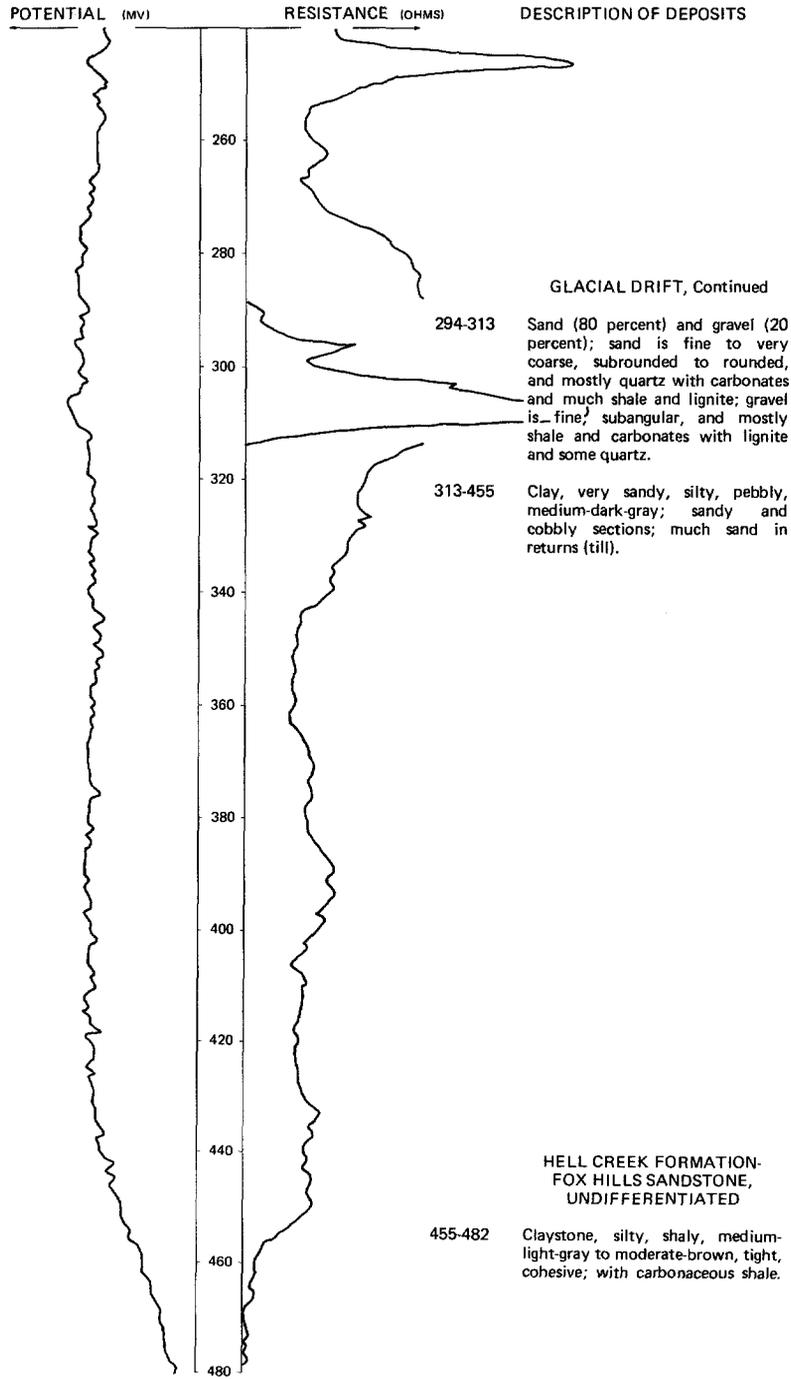


LOCATION: 148-076-17AAB

DATE DRILLED: 11/09/77

ALTITUDE: 1780
(FT, NGVD)

DEPTH: 482
(FT)



148-076-19DAD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1811 feet	Date drilled:	3/09/73
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, organic, black-----	1	1
	Clay, silty, sandy; lignite; brown to gray-----	17	18
	Clay (glacial till), silty; lignite; gray-----	8.5	26.5
	Sand, fine; with some gravel; gray-----	9.5	36
	Clay (till), sandy, gray-----	3.5	39.5
	Boulder-----	1	40.5
	Clay (till), sandy, gray-----	4.5	45

148-076-20ABB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1827 feet	Date drilled:	6/05/73
	Topsoil, organic, black-----	1	1
	Sand, silty, brown-----	1.5	2.5
	Silt, clayey, brown-----	2.5	5
	Clay (glacial till), sandy; scattered lignite; brown to gray-----	33.5	38.5
	Sand and gravel; some clay; scattered lignite; gray-----	1.5	40
	Clay (till), sandy; lignite throughout; boulder at 63 feet; gray-----	25	65

148-076-20DCC
(Log modified from U.S. Bureau of Reclamation)

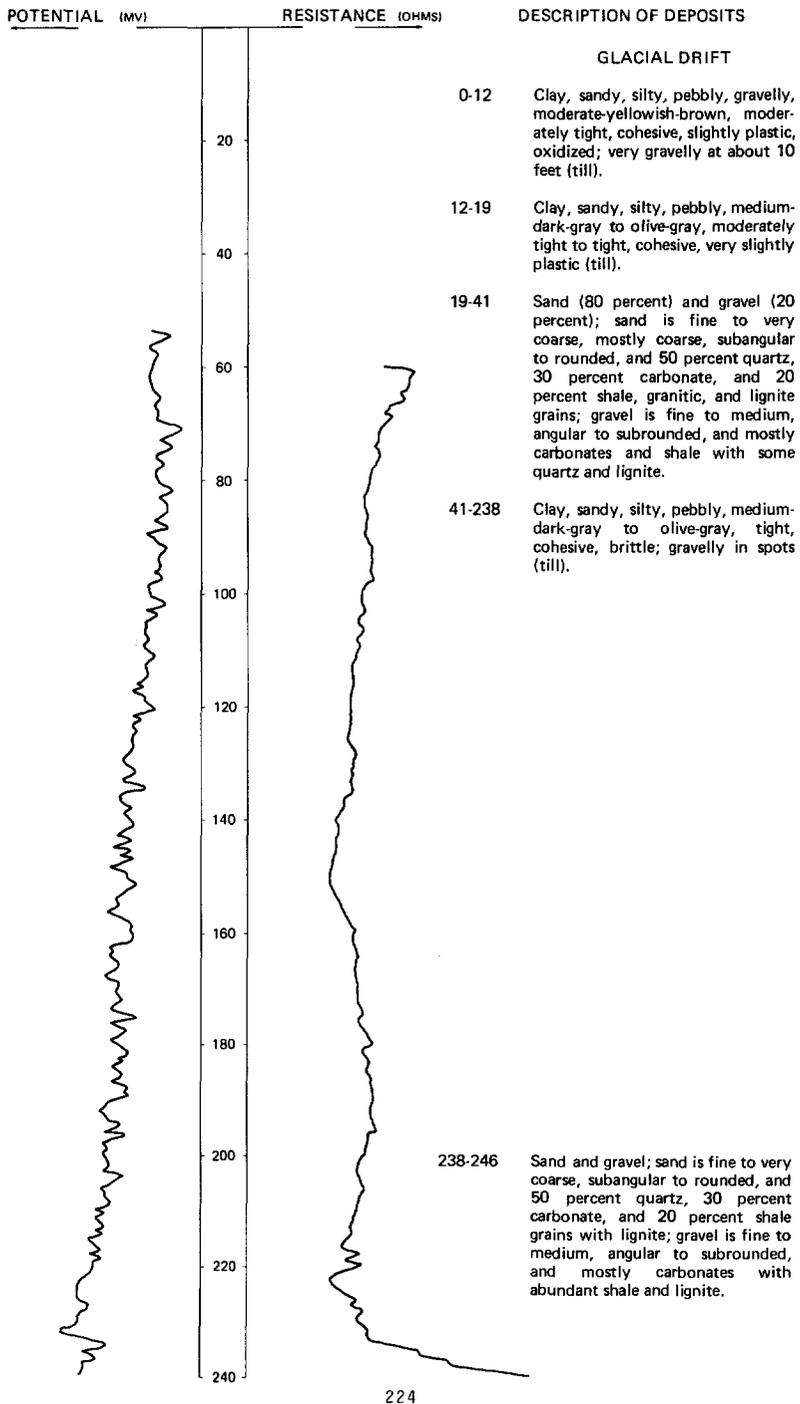
Altitude:	1802 feet	Date drilled:	4/11/55
	Topsoil-----	1.4	1.4
	Clay, fat, tan-----	7.1	8.5
	Clay (glacial till), gravelly-----	11.1	19.6
	Clay (till), sandy-----	7.3	26.9
	Sand, fine; borderline silt; gray-----	3.1	30
	Clay (till), gravelly, gray-----	20	50

LOCATION: 148-076-21AAA

DATE DRILLED: 11/08/77

ALTITUDE: 1770
(FT. NGVD)

DEPTH: 442
(FT)

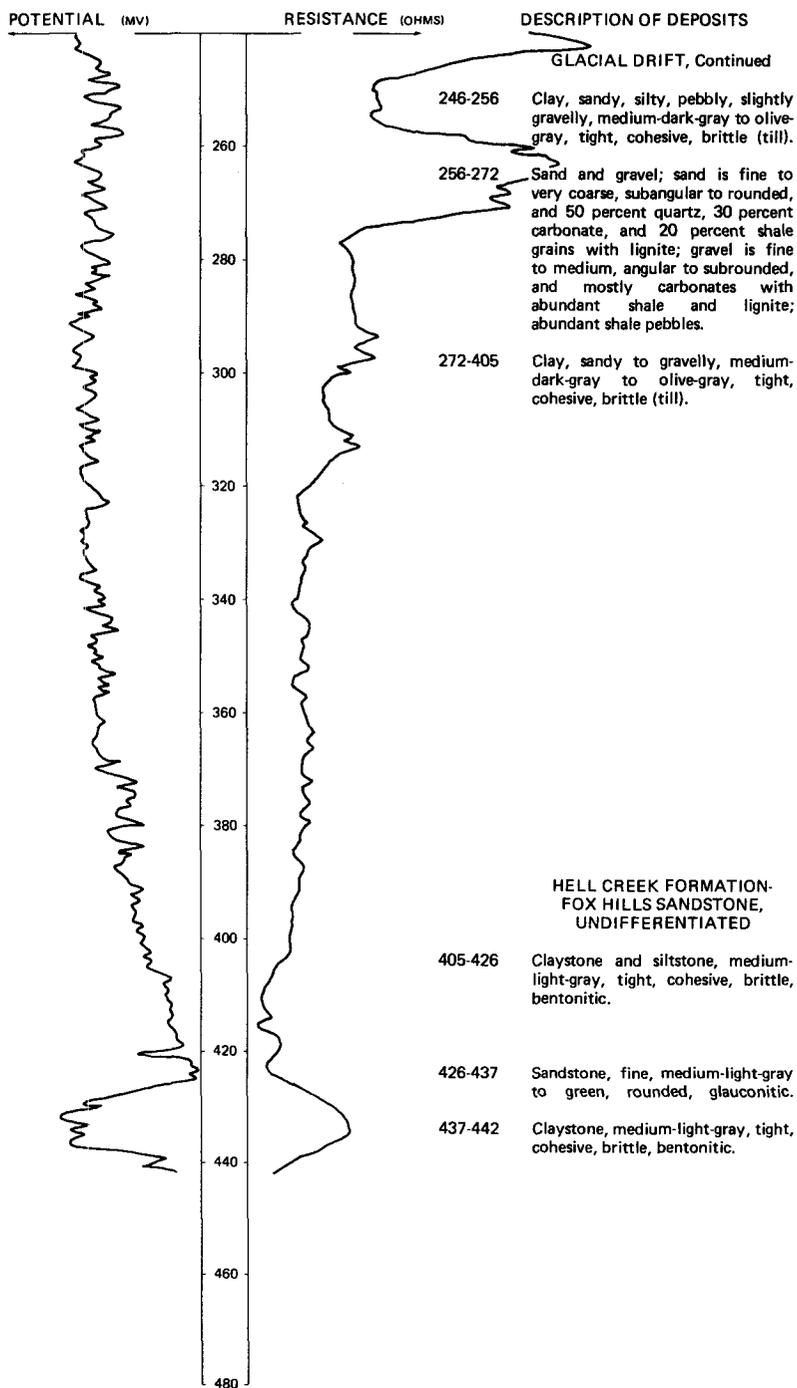


LOCATION: 148-076-21AAA

DATE DRILLED: 11/08/77

ALTITUDE: 1770
(FT, NGVD)

DEPTH: 442
(FT)



148-076-21BCC
(Log modified from U.S. Bureau of Reclamation)

Altitude: 1810 feet

Date drilled: 6/05/73

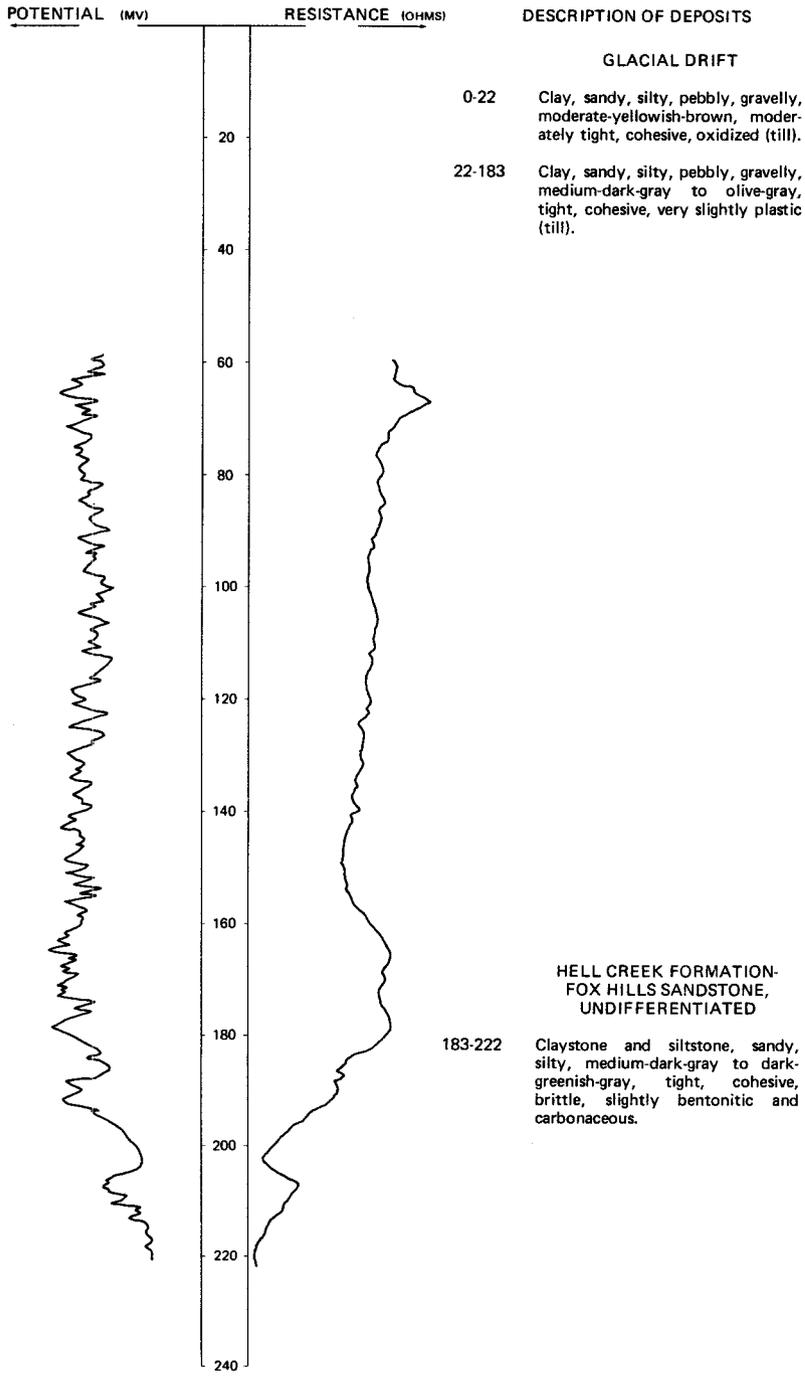
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, black, loose-----	1	1
	Clay (till), light-brown to gray, sandy, plastic; scattered lignite-----	25.5	26.5
	Sand, gray; some clay and lignite-----	1	27.5
	Clay (till), sandy; scattered lignite; gray-----	12.5	40

LOCATION: 148-076-23BAA

DATE DRILLED: 11/08/77

ALTITUDE: 1780
(FT, NGVD)

DEPTH: 222
(FT)

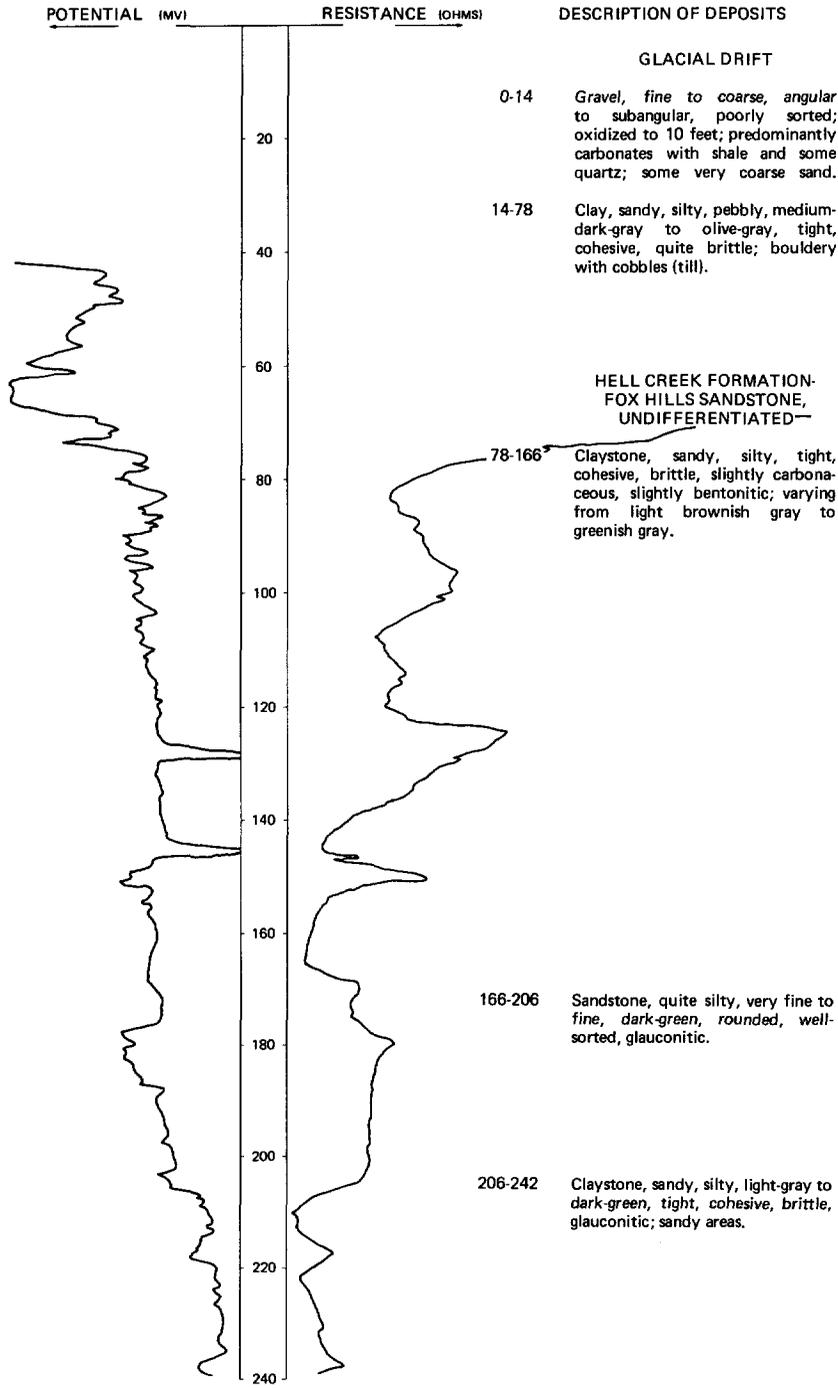


LOCATION: 148-076-24DCC

DATE DRILLED: 11/08/77

ALTITUDE: 1755
(FT, NGVD)

DEPTH: 242
(FT)



148-076-29BAA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1799 feet	Date drilled:	10/19/67
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, black-----	1	1
	Silty sand, brown-----	5.5	6.5
	Sandy clay (glacial till), brown-----	6.5	13
	Sand and clay (till), gray-----	9	22
	Sand, fine, gray-----	4.5	26.5
	Sandy clay (glacial till), gray-----	48.5	75

148-076-29CAA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1793 feet	Date drilled:	3/15/73
	Topsoil, organic, black-----	0.5	0.5
	Sandy clay, brown-----	2.5	3
	Silty sand, brown-----	2	5
	Sand and gravel, brown-----	3.5	8.5
	Clay (glacial till), sandy, brown-----	9.5	18
	Silty sand, fine, gray-----	5	23
	Clay (till), sandy; lignite; gray-----	8	31
	Sand and gravel; clay; some cobbles; gray-----	3	34
	Clay (till), sandy; some lignite; gray-----	6	40

148-076-30ADB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1824 feet	Date drilled:	3/13/73
	Topsoil, organic, black-----	1	1
	Sandy clay, brown-----	1	2
	Sand; scattered gravel; brown-----	5	7
	Clay (glacial till), silty, sandy, brown-----	10.5	17.5
	Boulder-----	1.5	19
	Clay (till); some lignite; brown to gray-----	46	65

148-076-31ADA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1812 feet	Date drilled:	3/15/73
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, black-----	1	1
	Sand and gravel; some clay; brown-----	3	4
	Clay (glacial till), sandy; lignite; brown to gray-----	13	17
	Silt, gray-----	7	24
	Clay (till), silty; lignite; gray-----	6	30
	Silty sand, fine, gray-----	7	37
	Sand and gravel; some clay; gray-----	1	38
	Clay (till), silty; sand zones; lignite; gray-----	27	65

148-076-31DAD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1833 feet	Date drilled:	6/08/62
	Clay (glacial till); organic to 1 foot; silty; sandy; some fine gravel; cobbles; calcareous; brown-----	4	4
	Silty sand; very fine; 40 percent silty fines; some clay; calcareous; tan to brown-----	20.8	24.8
	Silt, clay, and fine sand laminations; lignite; calcareous; glaciofluvial; gray-----	15.2	40
	Sand, fine to medium; some gravel; zone of clay; calcareous; gray-----	1	41
	Clay (till), silty, sandy; 5 percent gravel; occasional cobbles and boulders with lignite and shale; calcareous; gray-----	54	95

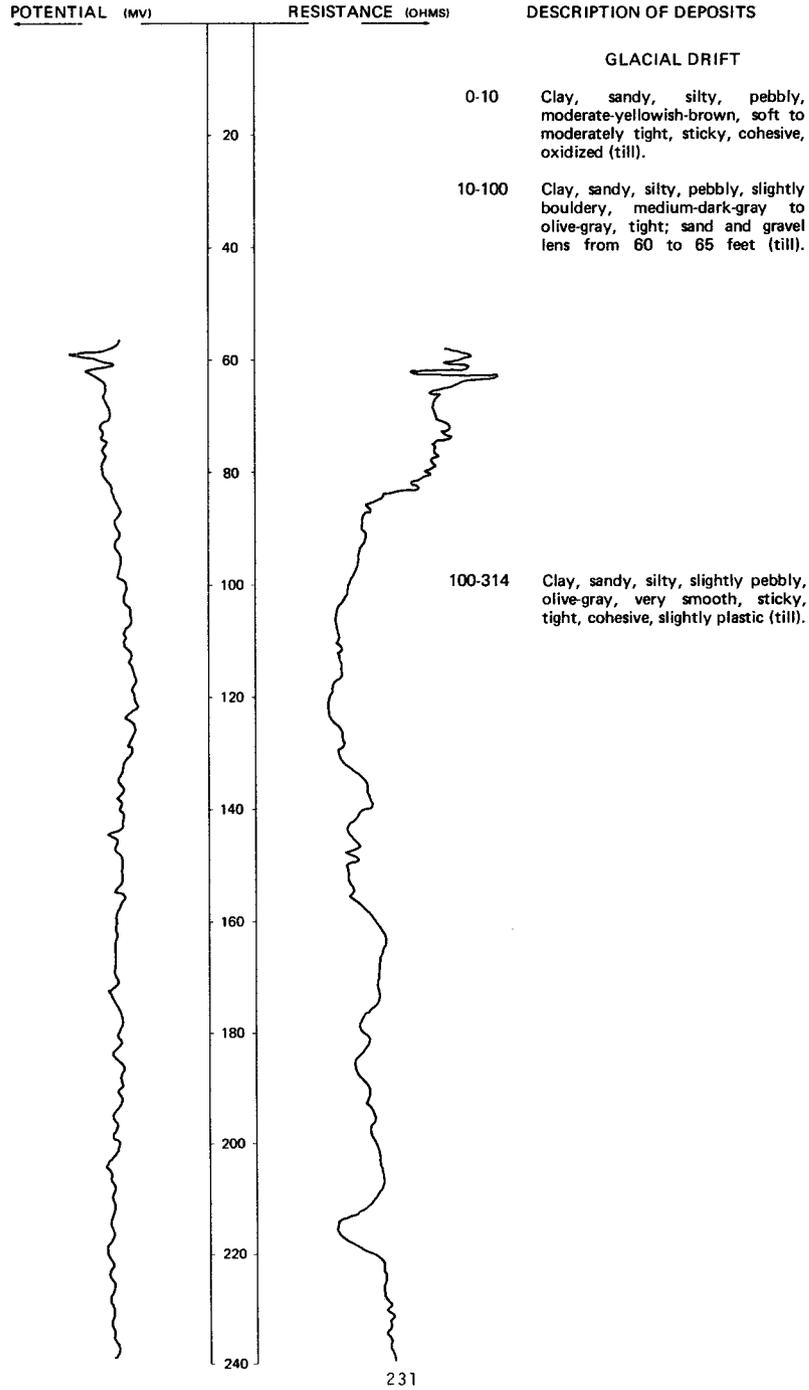
NDSWC 5331, 5331A

LOCATION: 148-077-02DDD1, 2

DATE DRILLED: 6/15/78

ALTITUDE: 1955
(FT, NGVD)

DEPTH: 855
(FT)

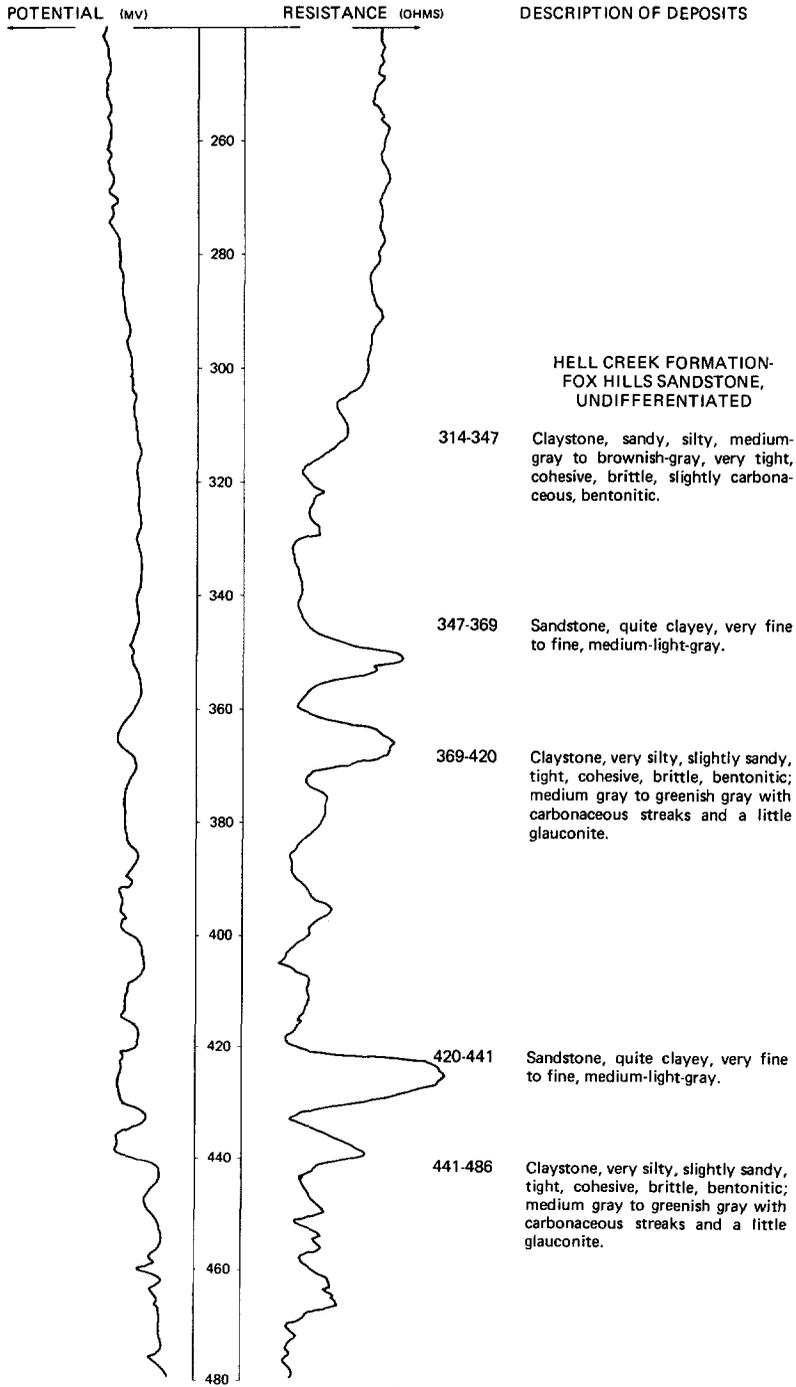


LOCATION: 148-077-02DDD1, 2

DATE DRILLED: 6/15/78

ALTITUDE: 1955
(FT, NGVD)

DEPTH: 855
(FT)



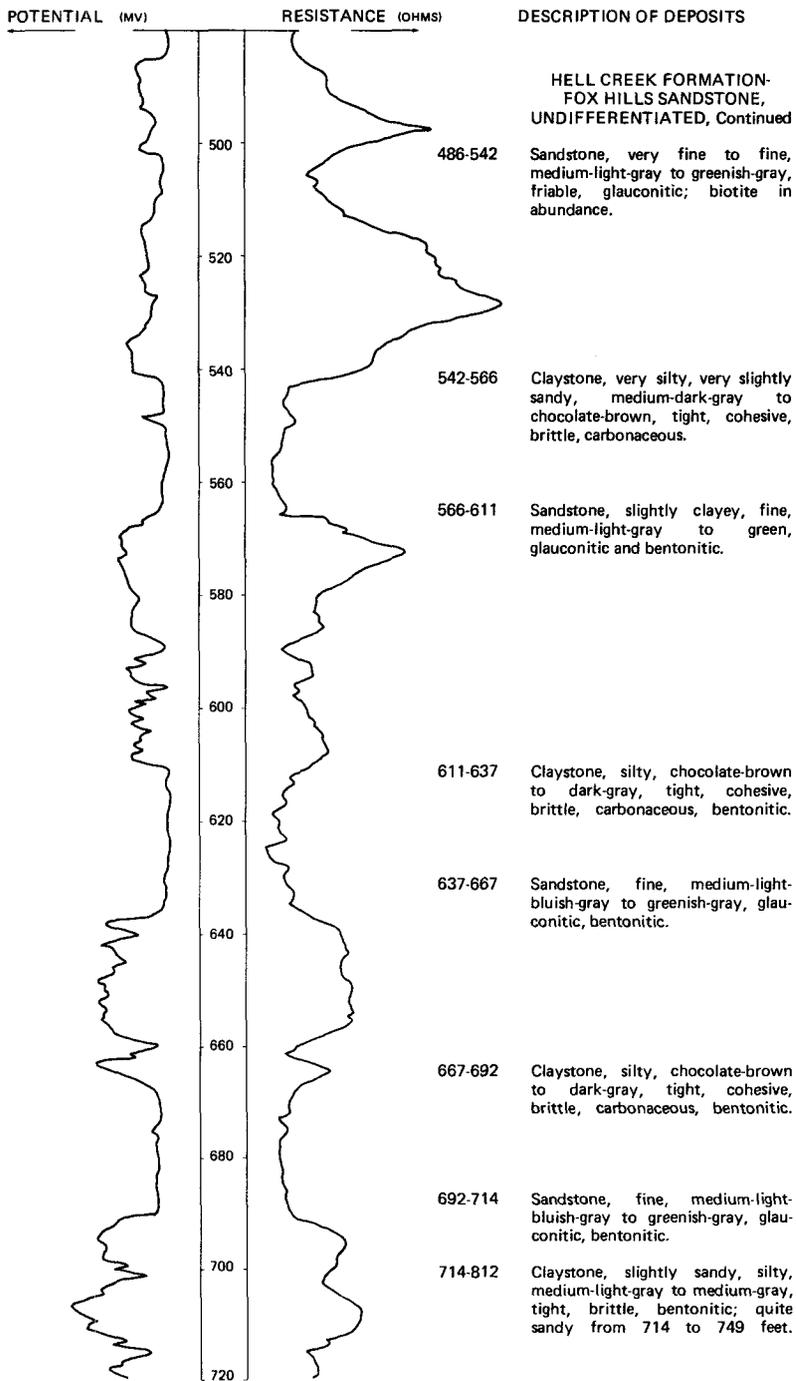
NDSWC 5331, 5331A, Continued

LOCATION: 148-077-02DDD1, 2

DATE DRILLED: 6/15/78

ALTITUDE: 1955
(FT, NGVD)

DEPTH: 855
(FT)

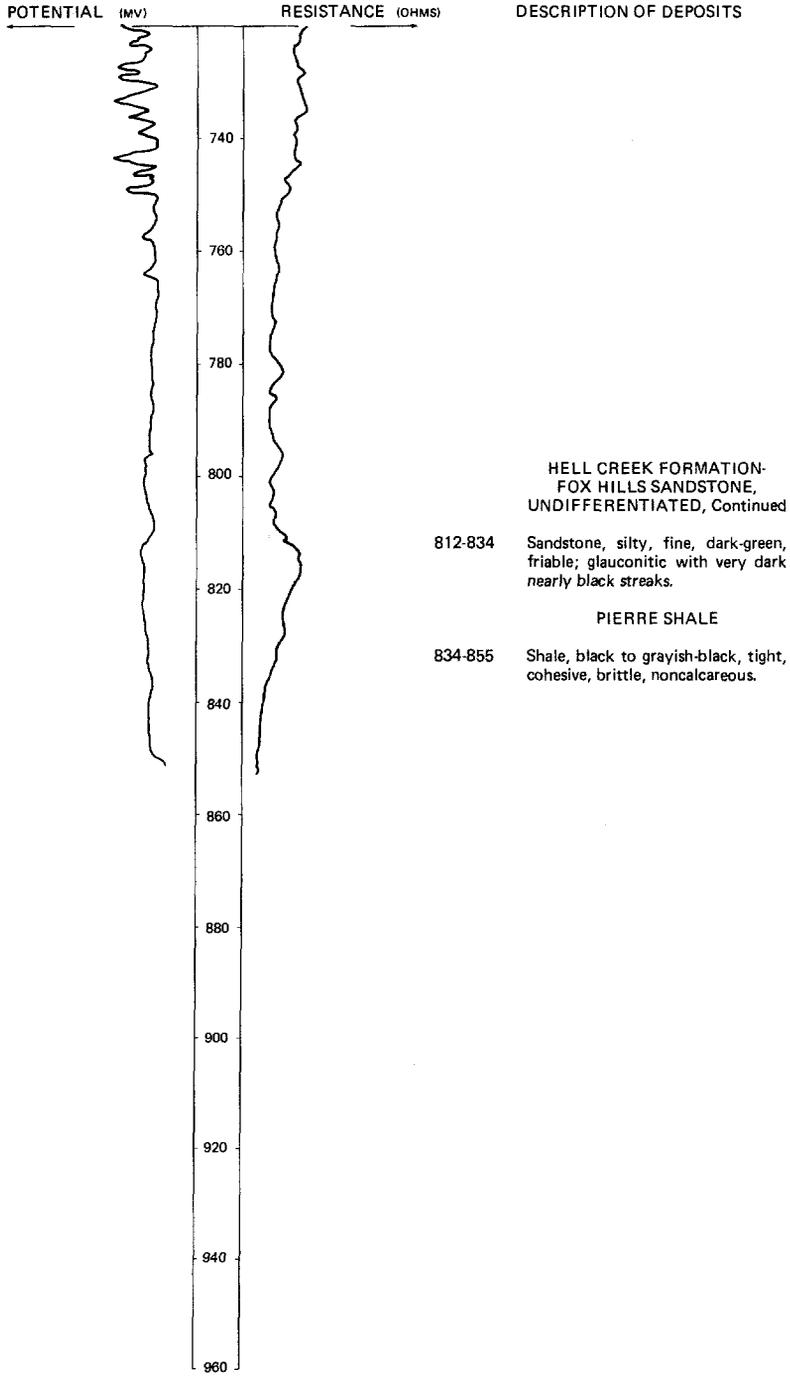


LOCATION: 148-077-02DDD1, 2

DATE DRILLED: 6/15/78

ALTITUDE: 1955
(FT, NGVD)

DEPTH: 855
(FT)



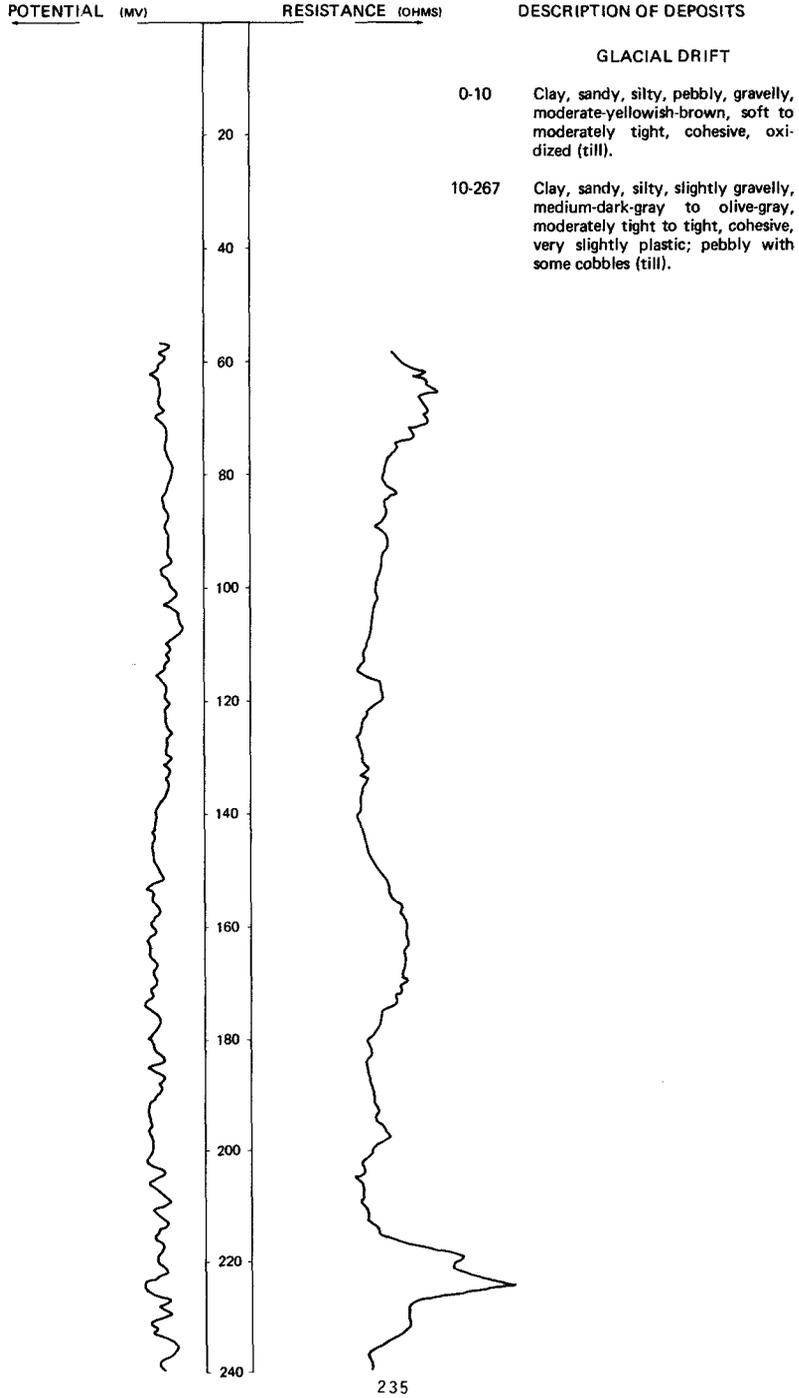
NDSWC 5272

LOCATION: 148-077-13AAA

DATE DRILLED: 11/14/77

ALTITUDE: 1850
(FT, NGVD)

DEPTH: 582
(FT)

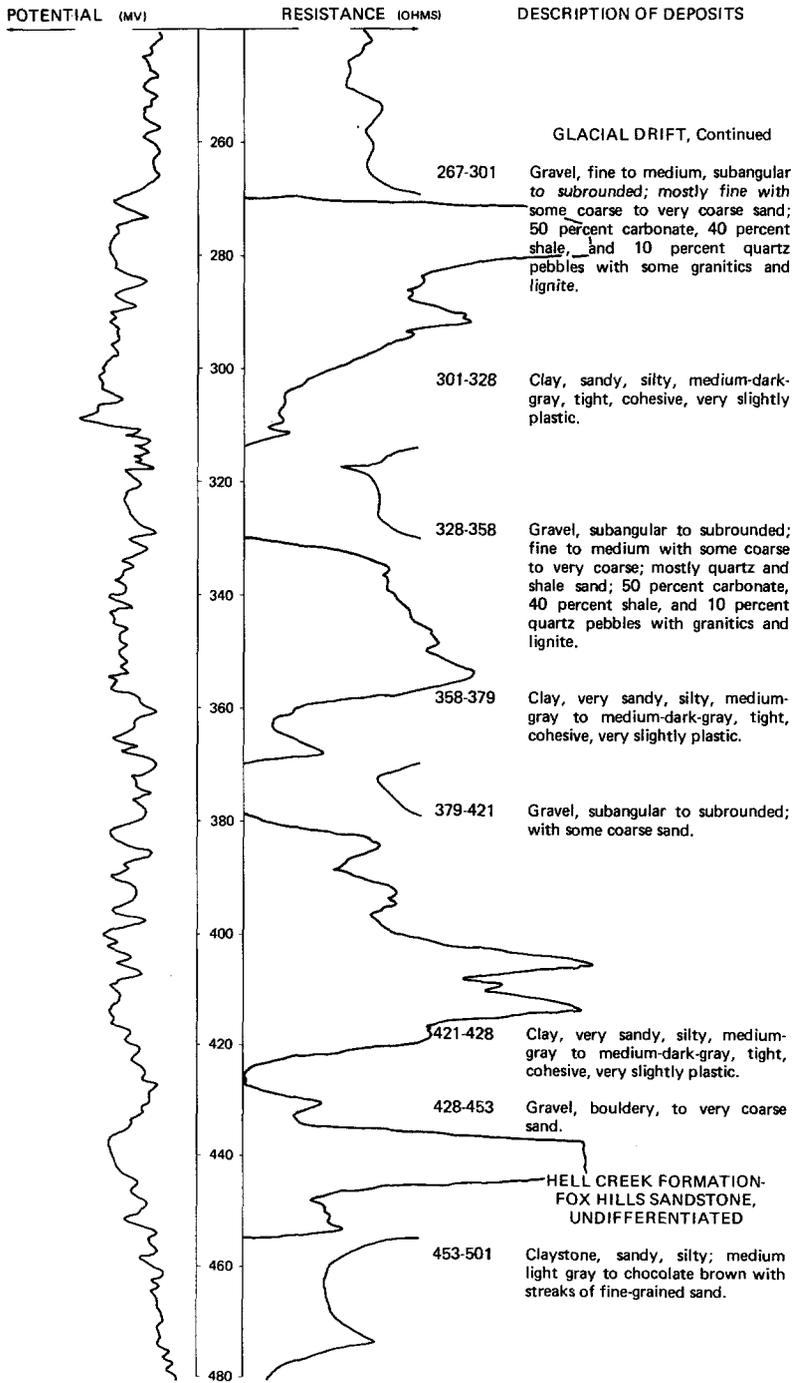


LOCATION: 148-077-13AAA

DATE DRILLED: 11/14/77

ALTITUDE: 1850
(FT, NGVD)

DEPTH: 582
(FT)

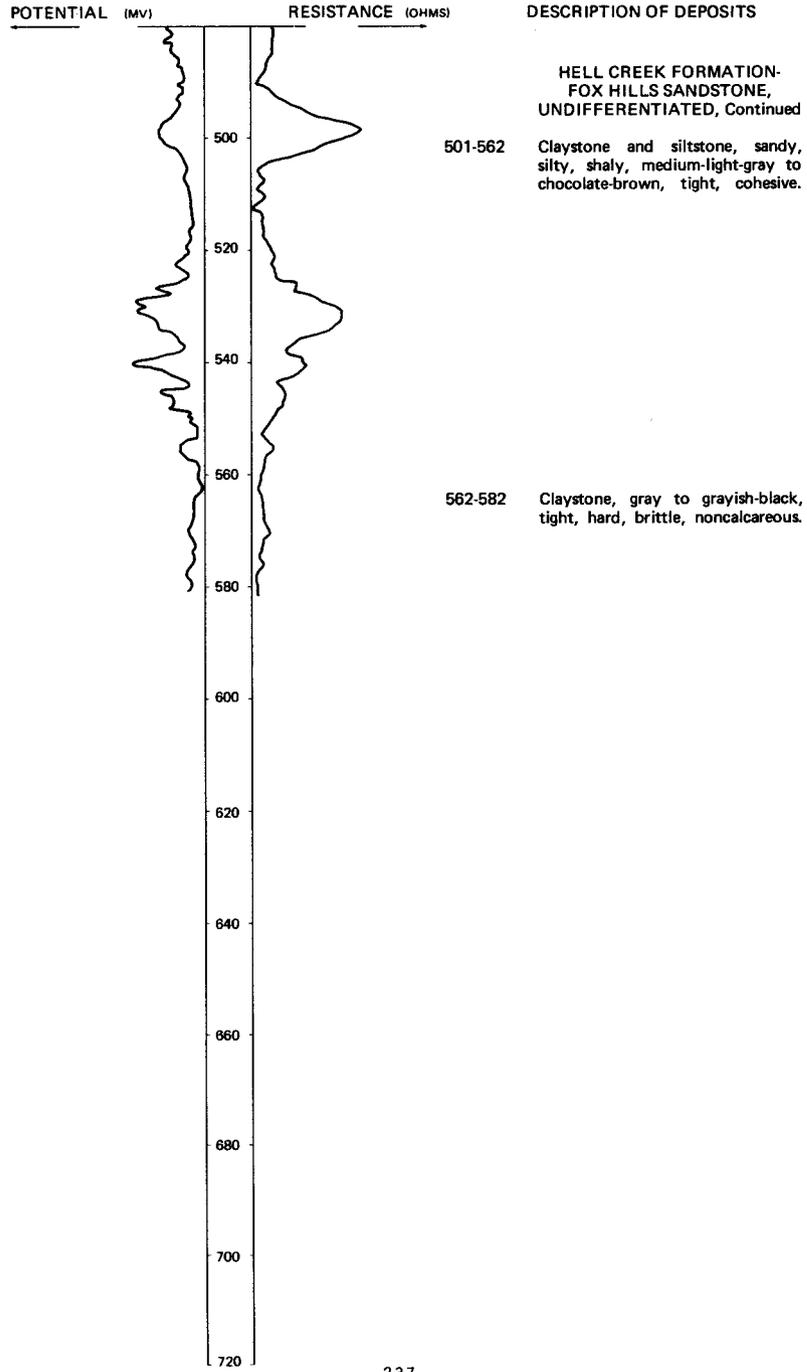


LOCATION: 148-077-13AAA

DATE DRILLED: 11/14/77

ALTITUDE: 1850
(FT, NGVD)

DEPTH: 582
(FT)



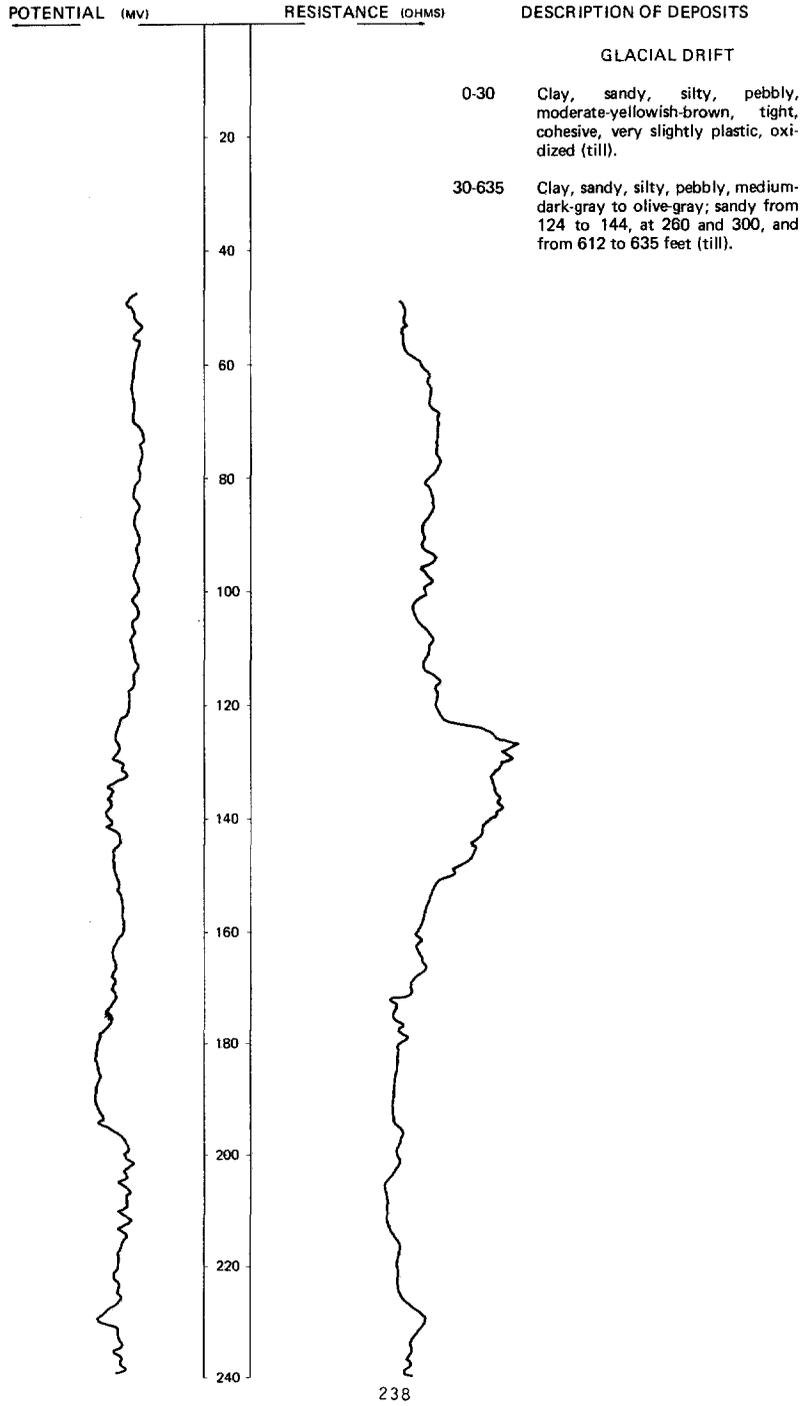
NDSWC 5334

LOCATION: 148-077-36CCC

DATE DRILLED: 6/21/78

ALTITUDE: 1838
(FT, NGVD)

DEPTH: 775
(FT)



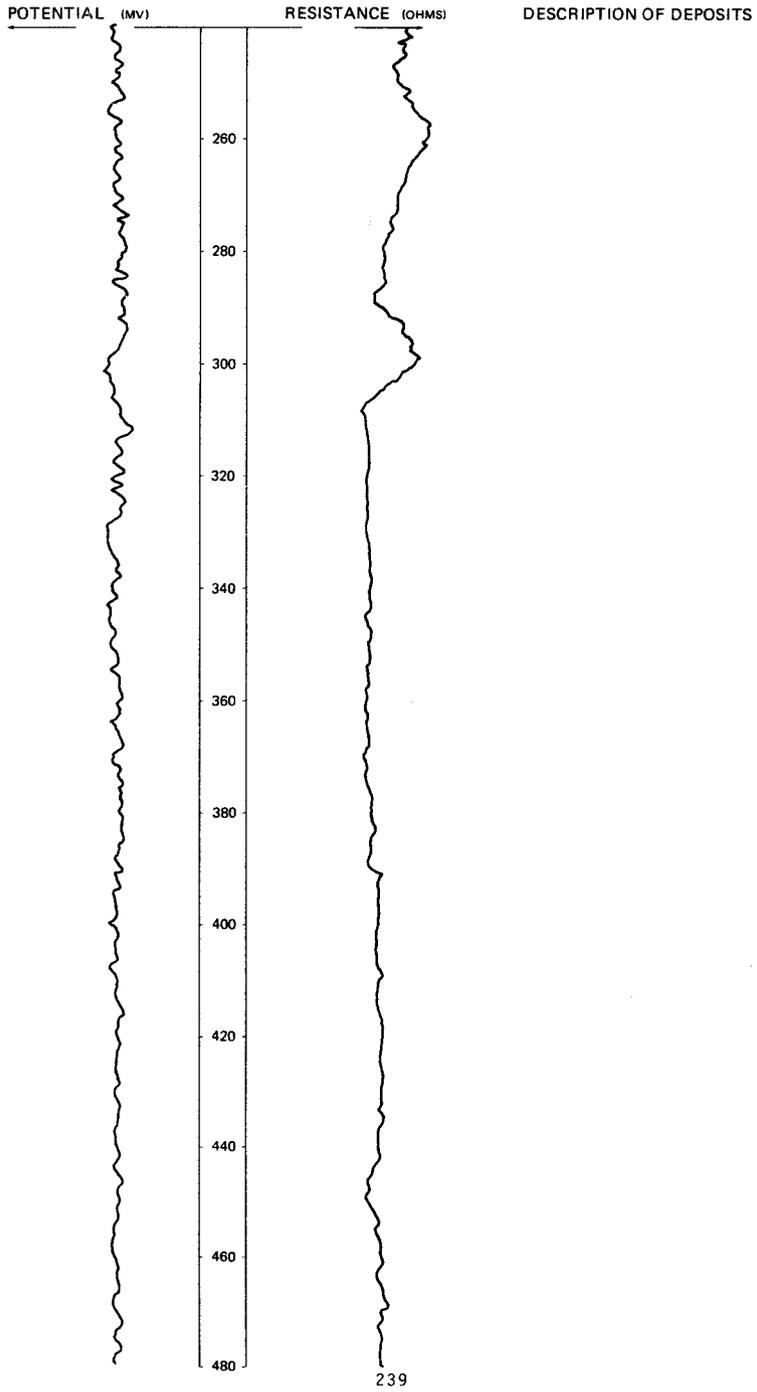
NDSWC 5334, Continued

LOCATION: 148-077-36CCC

DATE DRILLED: 6/21/78

ALTITUDE: 1838
(FT, NGVD)

DEPTH: 775
(FT)



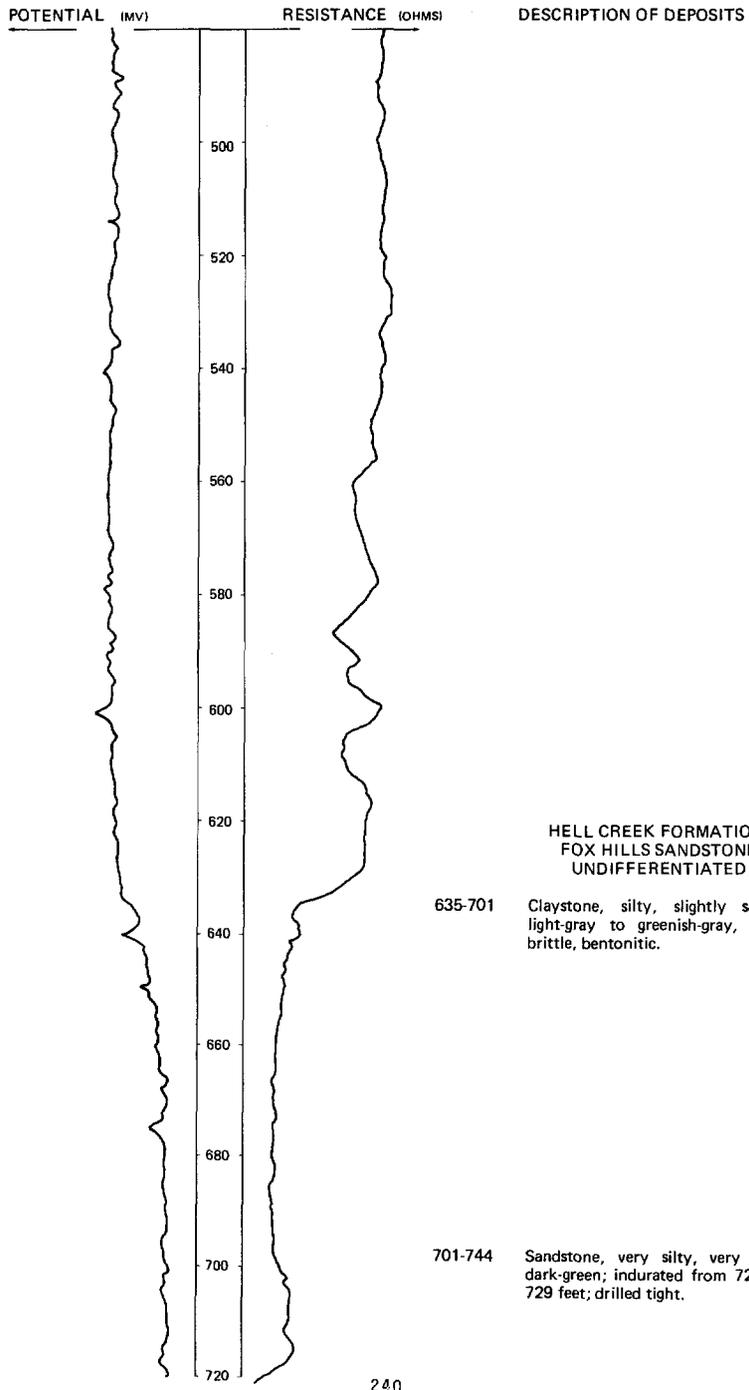
NDSWC 5334, Continued

LOCATION: 148-077-36CCC

DATE DRILLED: 6/21/78

ALTITUDE: 1838
(FT, NGVD)

DEPTH: 775
(FT)

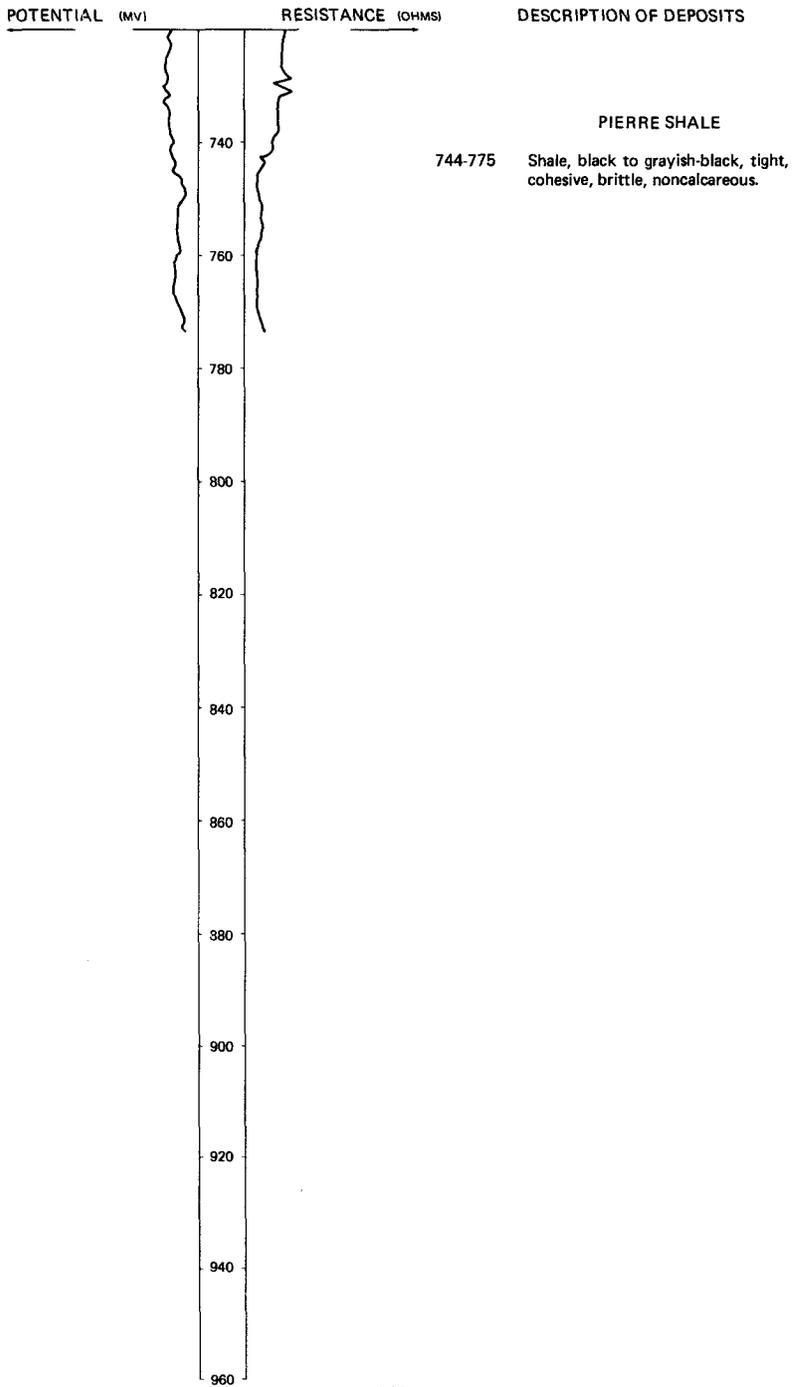


LOCATION: 148-077-36CCC

DATE DRILLED: 6/21/78

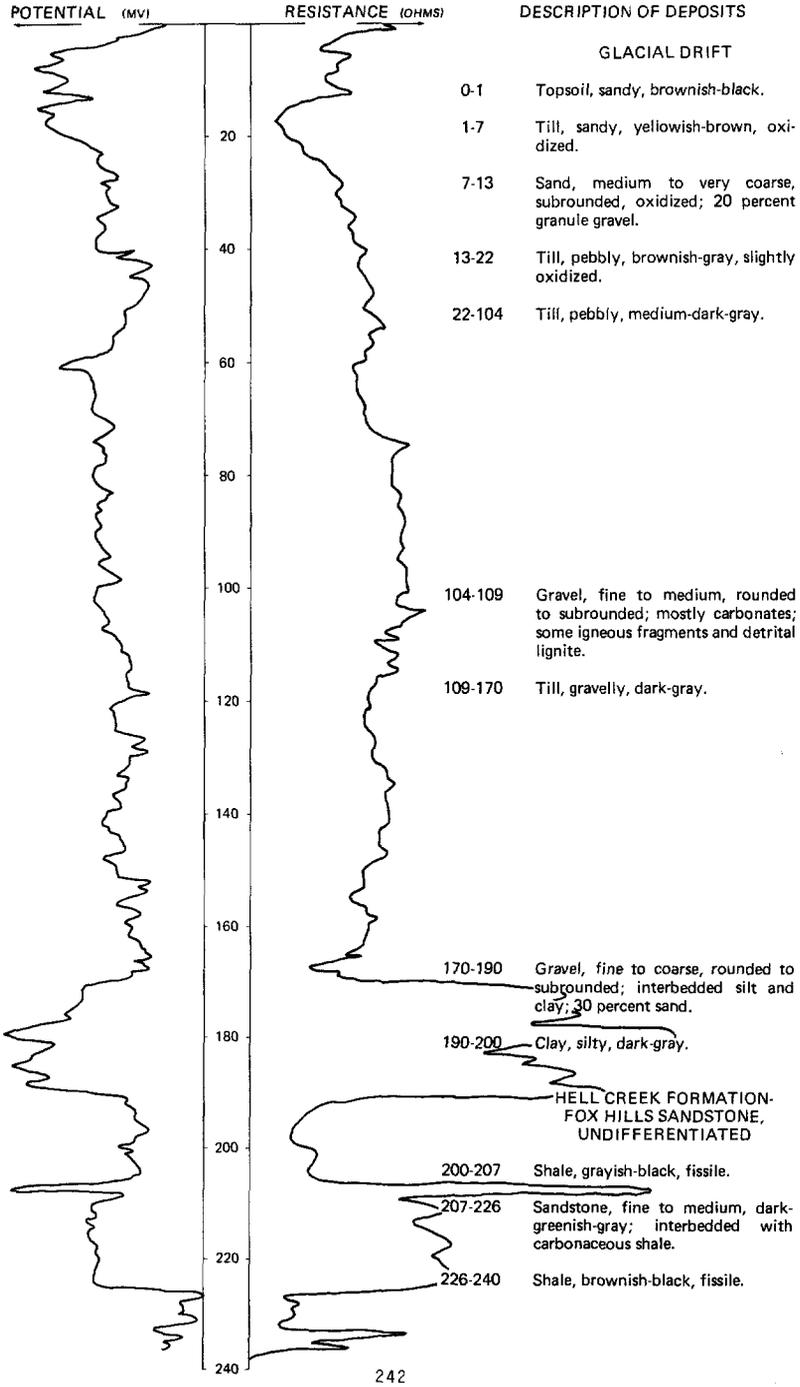
ALTITUDE: 1838
(FT, NGVD)

DEPTH: 775
(FT)



LOCATION: 148-078-10BBB
 ALTITUDE: 1920
 (FT, NGVD)

DATE DRILLED: 9/06/78
 DEPTH: 240
 (FT)

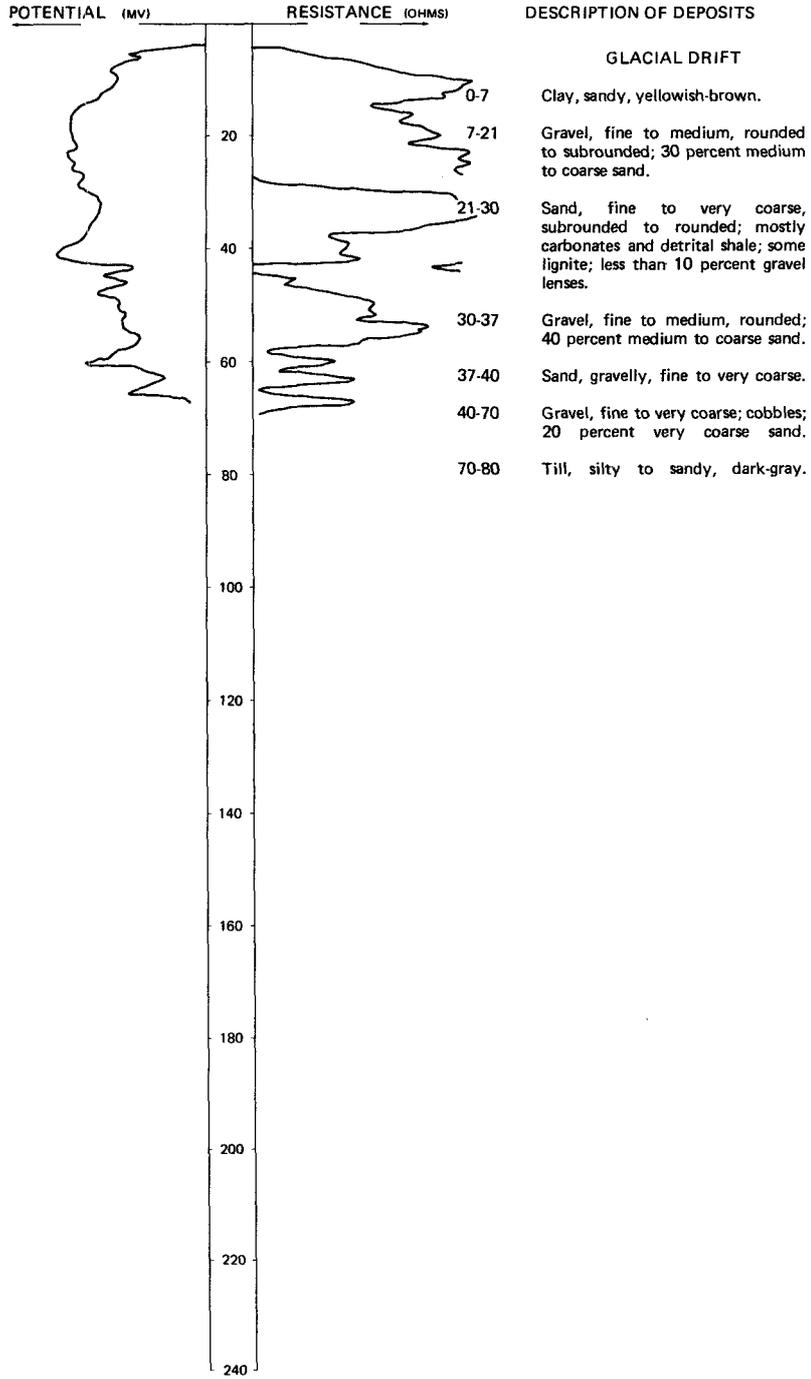


LOCATION: 148-078-10CBC

DATE DRILLED: 9/06/78

ALTITUDE: 1910
(FT, NGVD)

DEPTH: 80
(FT)



148-078-20BBA
NDSWC 10251

Altitude:	1910 feet	Date drilled:	9/06/78
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
Glacial drift:			
	Topsoil, sandy, brownish-black-----	1	1
	Clay, silty, pale-yellowish-brown-----	4	5
	Gravel, fine to coarse, subangular, oxidized-----	13	18
	Sand, fine to very coarse, subrounded; mostly shale and granitics; 30 percent gravel-----	10	28
	Gravel, fine to coarse, rounded to subrounded; 30 percent medium to coarse sand-----	20	48
	Silt, sandy, medium-gray-----	8	56
	Sand, gravelly, fine to coarse-----	8	64
	Till, sandy, medium-dark-gray-----	32	96
	Silt, sandy, dark-brownish-gray; detrital lignite-----	12	108
	Sand, silty, fine to medium-----	10	118
	Clay, silty, medium-dark-gray-----	8	126
Fort Union Formation:			
	Shale, light-gray, tight, fissile-----	14	140

148-078-32CBC
NDSWC 10250

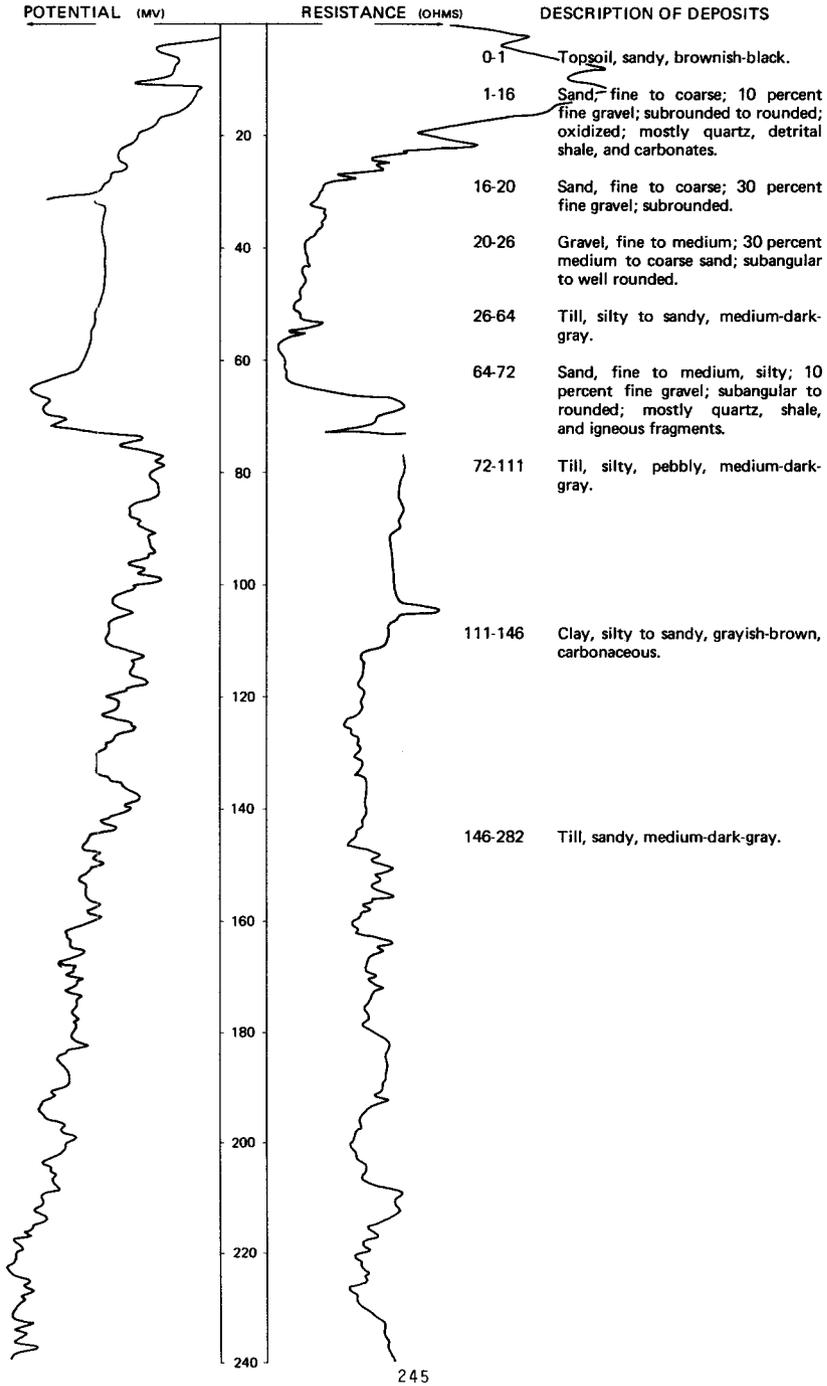
Altitude:	1900 feet	Date drilled:	9/05/78
Glacial drift:			
	Topsoil, sandy to rocky, brown-----	1	1
	Till, sandy, yellowish-brown, oxidized-----	1	2
	Gravel, fine to coarse, subrounded, highly oxidized-----	5	7
	Till, sandy, medium-dark-brown-----	5	12
	Gravel, fine to coarse, subrounded; 40 percent medium to coarse sand-----	20	32
	Till, sandy, medium-dark-gray-----	2	34
	Sand, medium to coarse; lenses of clay-----	2	36
	Till, silty, medium-dark-gray-----	86	122
Fort Union Formation:			
	Shale, light-gray, tight, fissile-----	18	140

LOCATION: 149-074-03ADA

DATE DRILLED: 8/14/79

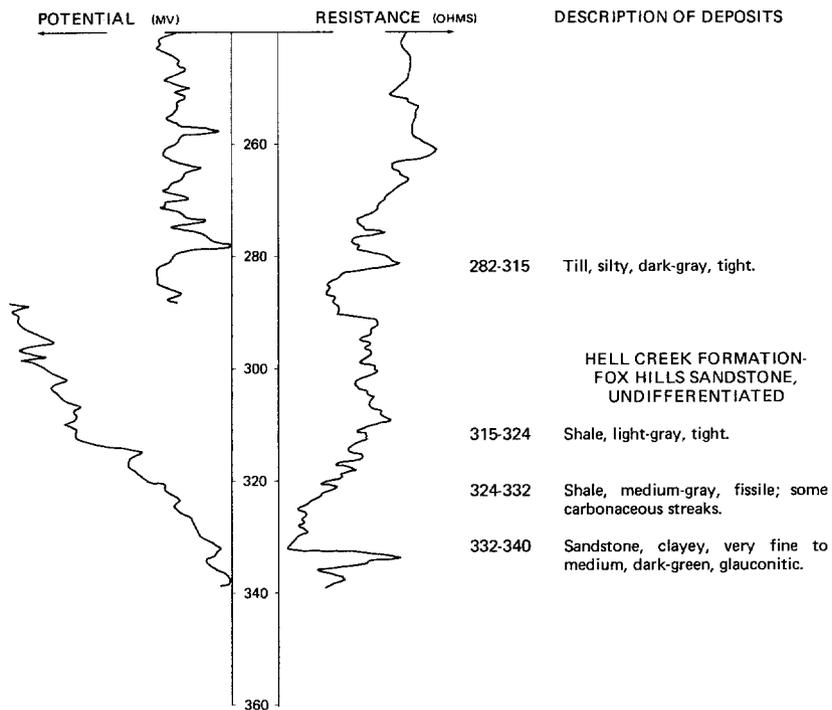
ALTITUDE: 1615
(FT, NGVD)

DEPTH: 340
(FT)



LOCATION: 149-074-03ADA
 ALTITUDE: 1615
 (FT, NGVD)

DATE DRILLED: 8/14/79
 DEPTH: 340
 (FT)



149-074-09DCD
 (Log from Russell Drilling Co.)

Altitude: 1660 feet

Date drilled: 8/23/76

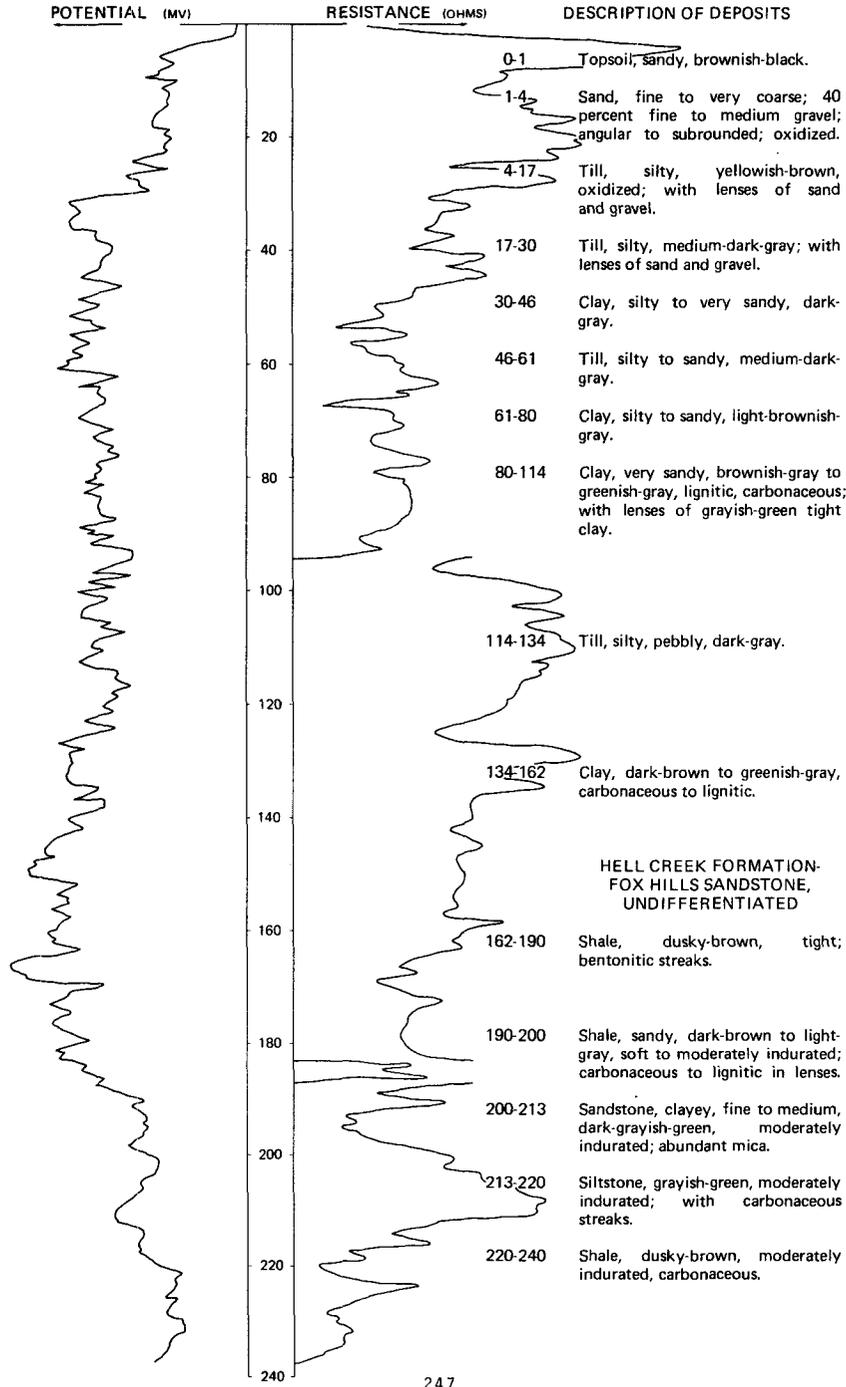
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1	1
	Till; yellow clay-----	32	33
	Till, gray-----	8	41
	Sand and gravel-----	15	56
	Till, gray-----	14	70
	Gray clay; bedrock-----	35	105
	Sand-----	15	120
	Gray clay-----	40	160
	Sand-----	50	210
	Gray clay-----	30	240

LOCATION: 149-074-10AAA

DATE DRILLED: 8/15/79

ALTITUDE: 1670
(FT, NGVD)

DEPTH: 240
(FT)



149-074-19ADD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1655 feet	Date drilled:	6/25/70
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, sandy, brown-----	6	6
	Clay (glacial till), sandy, brown-----	11	17
	Sand, brown-----	1	18
	Clay (till), sandy, brown to gray-----	30	48
	Clay shale; thin layers of lignite, gray-----	17	65

149-074-21CCC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1664 feet	Date drilled:	7/15/70
Glacial drift:			
	Topsoil, black-----	1	1
	Clay (glacial till), sandy, brown to gray-----	27	28
	Boulder-----	1	29
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Clay shale, gray-----	36	65

149-074-25BBB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1656 feet	Date drilled:	7/16/70
Glacial drift:			
	Topsoil, black-----	1	1
	Clay (glacial till), sandy, brown-----	14	15
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Sandy shale, gray-----	25	40
	Lignite-----	2	42
	Sandy shale, tan to light-gray-----	23	65

149-074-30DBD
NDSWC 10234

Altitude:	1610 feet	Date drilled:	8/24/78
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
Glacial drift:	Topsoil, sandy, brownish-black-----	1	1
	Clay, silty, yellowish-brown, cohesive, oxidized-----	15	16
	Sand, fine to coarse, medium-dark-gray; interbedded with intervals of silty clay; abundant detrital lignite-----	15	31
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:	Shale, grayish-brown; carbonaceous streaks-----	4	35
	Shale, grayish-green, fissile-----	5	40

149-074-34DAD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1645 feet	Date drilled:	7/15/70
Glacial drift:	Topsoil, black-----	1	1
	Clay (glacial till), sandy, brown-----	16	17
	Sand, fine, some gravel; brown to gray-----	11	28
	Clay (till); sand; cobbles; gray-----	4	32
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:	Clay shale, light-gray-----	13	45

149-074-36AAA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1647 feet	Date drilled:	7/16/70
Glacial drift:	Topsoil, black-----	1	1
	Clay (glacial till), sandy, brown-----	14	15
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:	Shale, sandy, gray-----	3	18
	Sand, fine, gray-----	6	24
	Shale, dark-gray to light-gray-----	41	65

149-075-04CCC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1830 feet	Date drilled:	6/03/70
	Clay (glacial till), sandy, brown-----	5	5
	Sand, brown-----	7	12
	Clay (till), sandy; layers of gravel; brown-----	28	40
	Gravel-----	2	42
	Clay (till); layers of gravel; boulders throughout; sandy; gray-----	63	105

149-075-05CDA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1648 feet	Date drilled:	8/18/52
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
Glacial drift:			
	Topsoil-----	1	1
	Sand, fine to medium, silty, brown-----	3.5	4.5
	Clay (glacial till); silt; sand; gravel; brown-----	17.5	22
	Sand and gravel, fine to medium, silty, buff to gray-----	2	24
	Clay (till); silt; sand; gravel; gray-----	144	168
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Shale, sandy, brown to gray-----	7	175

149-075-06BCC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1667 feet	Date drilled:	11/12/54
Glacial drift:			
	Sand, organic, very fine, silty, dark-brown-----	1.5	1.5
	Sand, very fine; gravel pebbles up to 1 1/4 inches; buff-----	8.5	10
	Clay (glacial till), sandy, gravelly; large gravel and cobbles; brown-----	17	27
	Sand; trace of silt; some coarse sand and gravel; tan-----	8	35
	Clay (till), gravelly, gray-----	171	206
	Clay, fat, stratified, dark-gray-----	14	220
	Clay (till), sandy, gravelly, gray-----	20.5	240.5
	Clay, fat, dark-gray-----	21.5	262
	Sand and gravel; clay binder-----	8	270
	Clay (till), sandy; few gravels-----	4	274
	Sand, uniform, silty, fine to gravelly, gray-----	9.5	283.5
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Shale, gray-----	6.5	290

149-075-06CAC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1656 feet	Date drilled:	9/23/52
Glacial drift:			
	Topsoil-----	0.9	0.9
	Sand, fine, silty; some clay; brown-----	7.6	8.5
	Clay (glacial till); silt; sand; brown-----	10.5	19
	Sand, fine, silty, brown-----	5	24
	Clay (till), sandy; silt; sand; gray-----	18	42
	Sand, silty, fine, gray-----	2	44
	Clay (till); silt; sand; pebbles and cobbles; boulders; gray-----	134	178
	Clay, silty-----	34	212
	Sand, very fine, silty; clay-----	38	250
	Sand, silty; some gravel-----	39	289
	Sand, silty; gravel; shale particles-----	8	297
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Shale, silty, gray-----	23	320

149-075-06DAC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1590 feet	Date drilled:	12/01/52
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, fine, silty, buff-----	1.5	1.5
	Sand, fine to medium, clean, brown-----	18.2	19.7
	Silt and sand, fine to medium; trace of clay; lignite; silty; gray-----	8.3	28
	Sand, fine, clean, well-graded-----	34.3	62.3
	Silt; trace of clay; light gray-----	7.7	70
	Clay (glacial till); silt; sand; pebbles to cobbles; some lignite and shale; gray-----	60	130
	Sand, medium to coarse, silty; trace of clay; gray-----	5	135
	Clay (till); silt; sand; pebbles to cobbles; some lignite and shale; gray-----	15.8	150.8
	Sand, medium to silty; cobbles and shale; gray-----	8.4	159.2
	Sand and gravel, medium, silty, clayey; firm shale; gray-----	35.4	194.6
	Clay (till); silt; sand; pebbles to cobbles; some lignite and shale; gray-----	6.6	201.2
	Sand, fine, silty; fine gravel; shale; gray-----	4.2	205.4
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Shale, silty, gray-----	4.6	210
	Shale and sandstone; sandy shales; shaly sandstone; gray-----	24.3	234.3
	Shale, very sandy, gray-----	3.7	238

149-075-07AAD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1653 feet	Date drilled:	6/03/54
	Clay (glacial till), gravelly, brown-----	10.4	10.4
	Sand and gravel, medium-----	4.8	15.2
	Clay (till); gravel to cobbles; silty gravel below; brown-----	139.8	155
	Sand, very fine; excess clay and silt; gray; glacial till from 181 to 182 feet-----	46	201
	Clay (till), gravelly, gray-----	49	250
	Silty sand-----	1	251
	Gravel, medium, clayey-----	5.2	256.2
	Clay (till), gravelly, gray-----	10.8	267
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Shale, silty, clay; gray-----	8	275

149-075-08ACD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1691 feet	Date drilled:	7/09/62
	Clay (glacial till), silty, sandy; 5 percent gravel; occasional cobbles and boulders; calcareous; brown-----	10.5	10.5
	Silt and sand; very fine sand; 50 percent silt; 50 percent fine sand; calcareous; glaciofluvial; brown-----	12.5	23
	Clay (till), silty, sandy; some cobbles and boulders; lignite; calcareous; gray-----	52	75
	Clay (till), silty, sandy; 5 percent gravel; some cobbles and boulders; calcareous; lignite and shale fragments; gray-----	116	191

149-075-08BDB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1622 feet	Date drilled:	3/11/69
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil; silty sand; organic; dark gray-----	1	1
	Silty sand; 60 percent coarse to fine sand; trace of clay; calcareous; fine gravel to 3 inches in diameter; alluvium, gray-----	9	10
	Silty sand; 70 percent coarse to fine sand; 10 percent gravel to 3 inches in diameter; clay zones; calcareous; glaciofluvial; gray-----	6	16
	Silty sand; 70 percent fine sand; organic matter; some fine gravel; calcareous; glaciofluvial; light brown-----	14	30
	Poorly graded sand; 85 percent fine to medium sand; some fine to coarse gravel; clayey zones; lignite and shale particles; calcareous; glaciofluvial; brown to gray-----	25	55
	Silty sand; 50 percent fine sand; organic matter; calcareous; glaciofluvial; gray-----	10	65
	Poorly graded sand; 95 percent coarse to fine sand; some fine gravel; clayey zones; glaciofluvial; gray-----	4	69
	Clay (glacial till), sandy, silty; lignite fragments; fine gravel; slight HCL reaction; some gravel with cobbles; dark gray-----	119	188
	Coarse sand; few fine gravels; clay lenses; glaciofluvial; gray-----	56.5	244.5
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:	Tuffaceous siltstone; organic inclusions; low specific gravity; scratches easily; light gray-----	5.5	250

149-075-08BDD
(Log modified from U.S. Bureau of Reclamation)

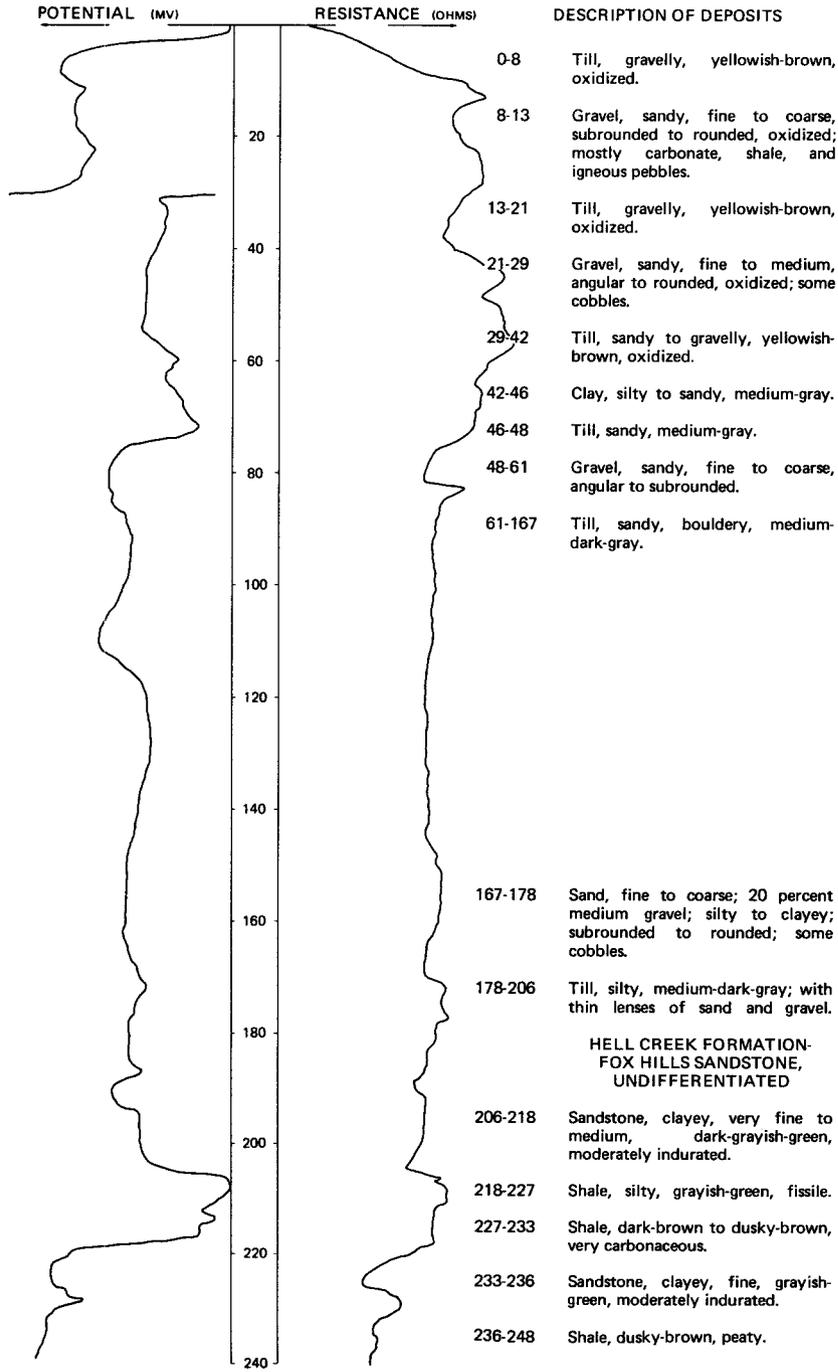
Altitude:	1633 feet	Date drilled:	4/04/69
	Topsoil, organic, sandy, silty, clayey-----	0.5	0.5
	Silty sand; 80 percent fine to medium sand; trace of clay; scattered fine gravel; calcareous; glaciofluvial; brown-----	9.5	10
	Silty sand; 50 percent very fine sand; trace of clay; calcareous; glaciofluvial; gray-----	.5	10.5
	Poorly graded sand; 90 percent coarse to fine sand; 5 percent gravels; calcareous; silty; few cobbles; glaciofluvial-----	69.5	80
	Silty sand; 85 percent uniform fine sand; trace of clay and gravel; calcareous; glaciofluvial; gray-----	11	91
	Poorly graded sand; 85 percent coarse to mostly fine sand; 5 percent fine gravels; calcareous; glaciofluvial; gray-----	4	95
	Gravel, sand, and cobbles-----	7	102
	Silty sand, fine, gray-----	2	104
	Clay (glacial till), sandy, silty; scattered gravel; lignite throughout; gray-----	21	125

149-075-15ABB
(Log from Russell Drilling Co.)

Altitude:	1785 feet	Date drilled:	5/02/74
	Topsoil-----	1	1
	Clay, yellow; with boulders-----	27	28
	Clay, blue-----	82	110
	Sand; with lignite streaks-----	6	116
	Clay, blue-----	4	120
	Shale-----	70	190
	Bedrock sand-----	35	225
	Shale-----	15	240

LOCATION: 149-075-18ADD
 ALTITUDE: 1650
 (FT, NGVD)

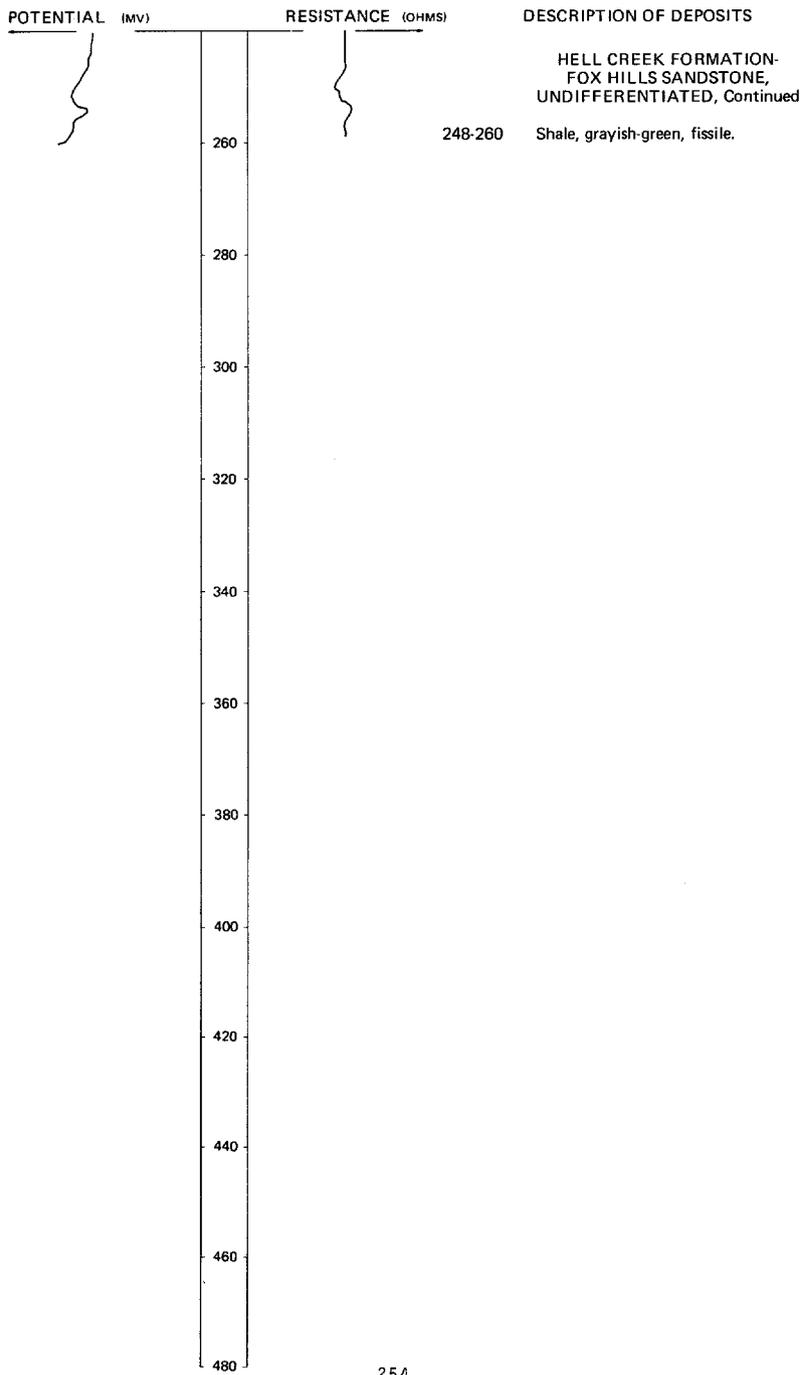
DATE DRILLED: 8/13/79
 DEPTH: 260
 (FT)



NDSWC 11017, Continued

LOCATION: 149-075-18ADD
ALTITUDE: 1650
(FT, NGVD)

DATE DRILLED: 8/13/79
DEPTH: 260
(FT)

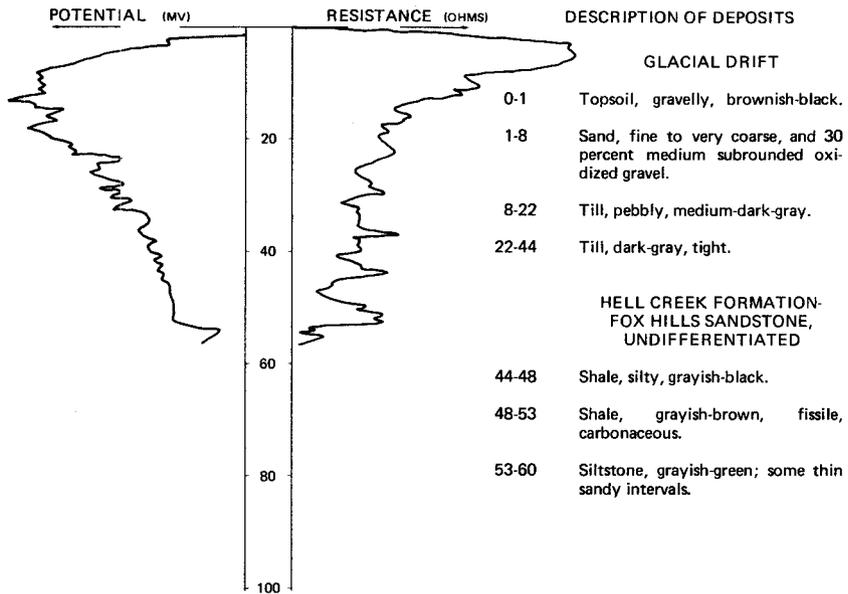


LOCATION: 149-075-22DAA

DATE DRILLED: 8/23/78

ALTITUDE: 1655
(FT. NGVD)

DEPTH: 60
(FT)



149-075-31BAA
(Log from Russell Drilling Co.)

Altitude: 1745 feet

Date drilled: 10/28/75

GEOLOGIC SOURCE

MATERIAL

THICKNESS (FEET) DEPTH (FEET)

Clay, sandy	55	55
Clay, silty	147	202
Clay; with pebbles; till	26	228
Gravel; with clay	12	240
Clay, sandy	10	250
Clay; with gravel and some sand	23	273
Till	27	300
Gravel and sand	24	324
Gravel; with lignite streaks	15	339

149-075-32ABA
(Log from Russell Drilling Co.)

Altitude: 1695 feet

Date drilled: 12/17/76

Gravelly till	45	45
Rocky till	212	257
Gravel and sand	7	264
Till	16	280
Shale, brown	17	297

149-076-01ABD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1663 feet	Date drilled:	12/13/54
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Silt, sandy; trace of clay; brown-----	5	5
	Clay (glacial till), sandy, oxidized-----	11.6	16.6
	Sand, very fine; trace of silt to clean; buff-----	10.4	27
	Clay (till), sandy, oxidized-----	14	41
	Clay (till), gravelly; large gravels and cobbles; gray-----	97	138
	Sand, medium to coarse, clayey-----	6	144
	Clay (till), gravelly, gray-----	158	302
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Sandstone, fine, uniform, clayey, bluish-gray-----	13	315

149-076-01BAB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1651 feet	Date drilled:	10/22/52
	Topsoil-----	0.8	0.8
	Clay, organic, sandy, black-----	2.7	3.5
	Clay (glacial); fine sand and silt; pebbly; buff-----	17.5	21
	Sand, fine, clayey, silty, fine gravel; sand and gravel from 35 to 36 feet; brown to gray-----	15	36
	Clay (till); silt; sand; some boulders; gray-----	88	124
	Clay and gravel; silt; coarse gravels; pebbles; gray-----	11	135
	Clay (till), silty; fine gravel and pebbles; gray-----	83	218
	Gravel, medium, silty; clay seams; gray-----	6.5	224.5
	Clay, sandy; coarse gravel and boulders; dark brown-----	18	242.5
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Shale, sandy, gray-----	3.5	246

149-076-11AAB
(Log from Russell Drilling Co.)

Altitude:	1680 feet	Date drilled:	3/14/67
	Yellow till-----	27	27
	Fine gray sand-----	6	33
	Till-----	67	100
	Fine blue sand; with clay streaks-----	15	115
	Till-----	165	280
	Till; with gravel streaks-----	20	300
	Bedrock clay, soft, gray-----	15	315

149-076-22AAA
(Log from Feickert Drilling Co.)

		Date drilled:	5/12/73
	Topsoil-----	2	2
	Clay-----	8	10
	Sand-----	50	60
	Clay-----	13	73
	Gravel-----	10	83
	Clay-----	27	110
	Sand-----	25	135
	Clay-----	41	176
	Sand-----	10	186

149-076-25ABC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1665 feet	Date drilled:	6/04/62
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, organic, clayey, black-----	1	1
	Clay, sandy, silty; gypsum crystals; calcareous; brown to dark gray-----	3	4
	Silty clay; silty sand; mica flakes; calcareous; light gray-----	5	9
	Clayey sand, medium to coarse; 15 percent clay; 15 percent gravel; some cobbles and boulders; calcareous; yellowish brown-----	6	15
	Clay (glacial till); fine sand; silty; clayey sand; clayey gravel; lignite and shale fragments; cobbles and boulders; dark gray-----	91	106

149-076-25BAD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1644 feet	Date drilled:	9/28/72
	Topsoil, organic, black-----	3	3
	Silty sand; 85 percent medium to fine sand; calcareous; alluvium; brown-----	1	4
	Sandy clay; 35 percent coarse to fine sand; calcareous; alluvium; gray-----	2	6
	Clayey sand; 70 percent well-graded sand; 10 percent gravel; calcareous; alluvium; gray-----	3	9
	Silty sand; 90 percent coarse to fine sand; calcareous; alluvium; gray-----	8	17
	Silty gravel; 45 percent coarse to fine gravel; 45 percent coarse to fine sand; calcareous; glaciofluvial; gray-----	6	23
	Clay (glacial till); 30 percent coarse to fine sand; 5 percent gravel; clayey gravel; calcareous; gray-----	27	50

149-076-25DCD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1802 feet	Date drilled:	4/22/55
	Sandy topsoil-----	2	2
	Silt and sand; fine sand and silt; brown-----	2	4
	Clay (glacial till), silty; with pebbles and cobbles; brown to gray-----	2	6
	Silt and sand; fine sand and silt; silty clay; brown to buff-----	42.5	48.5
	Clay (till), silty and sandy; with pebbles; gypsum; brown to gray-----	2.5	51

149-076-26AAA
(Log from Russell Drilling Co.)

		Date drilled:	8/30/72
	Topsoil-----	1	1
	Clay, sandy-----	29	30
	Clay, blue-----	10	40
	Clay; with pebbles-----	125	165
	Sand, fine-----	13	178

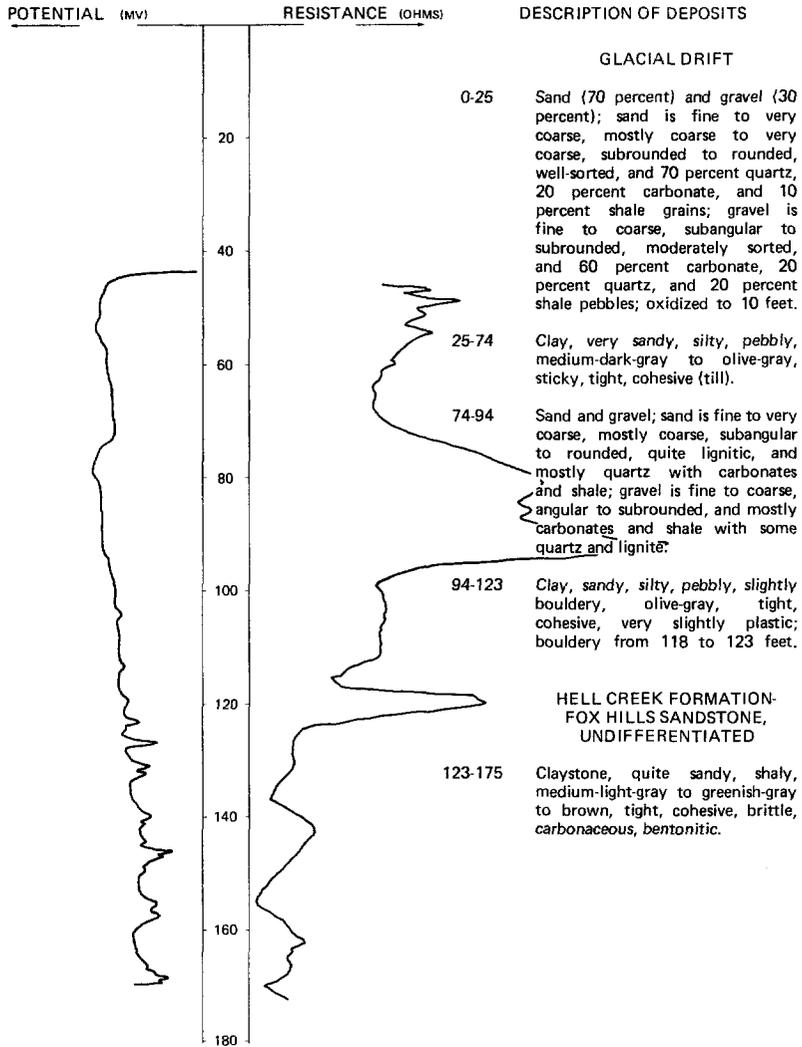
NDSWC 5330

LOCATION: 149-076-29BBB

DATE DRILLED: 6/14/78

ALTITUDE: 1710
(FT, NGVD)

DEPTH: 175
(FT)



149-076-36ABA
(Log modified from U.S. Bureau of Reclamation)

Altitude: 1799 feet

Date drilled: 3/29/68

GEOLOGIC SOURCE MATERIAL

THICKNESS DEPTH
(FEET) (FEET)

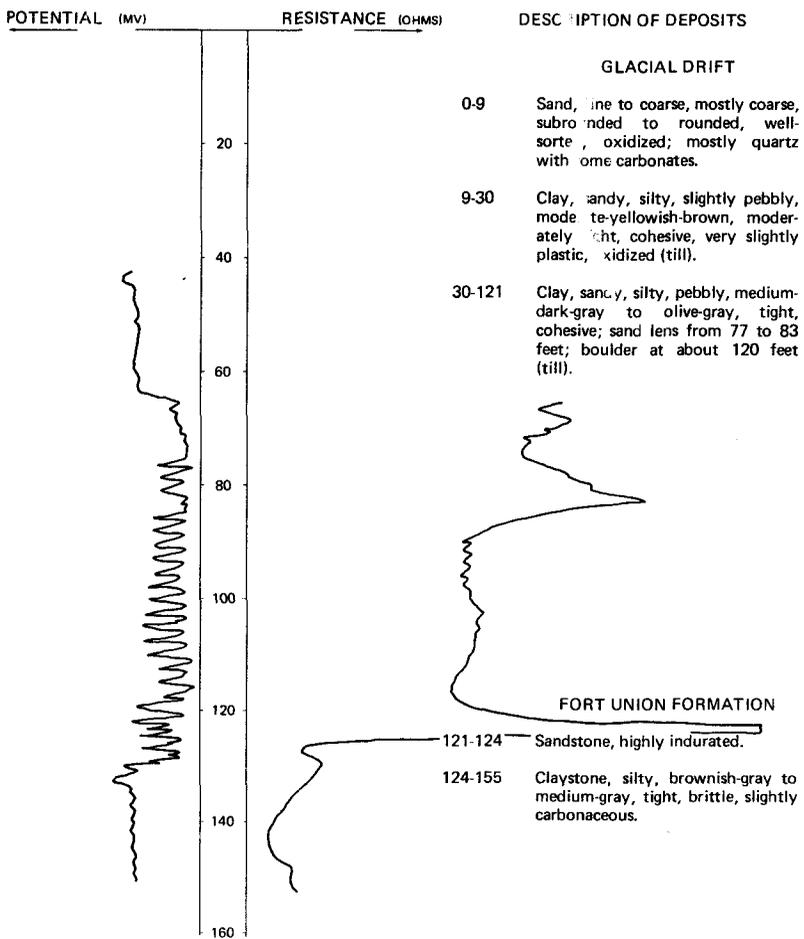
Topsoil, black	1	1
Silty sand, brown	49	50

149-076-36CCC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1800 feet	Date drilled:	4/21/55
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1.4	1.4
	Clay (glacial till), silty, sandy; some pebbles; gravels; brown-----	18.7	20.1
	Sand, silty, fine, brown-----	4.7	24.8
	Silt and sand; very fine with mostly silt; some gravel; silty clay; gray-----	25.2	50

NDSWC 5327

LOCATION: 149-077-02AAA DATE DRILLED: 6/09/78
 ALTITUDE: 1686 DEPTH: 155
 (FT, NGVD) (FT)



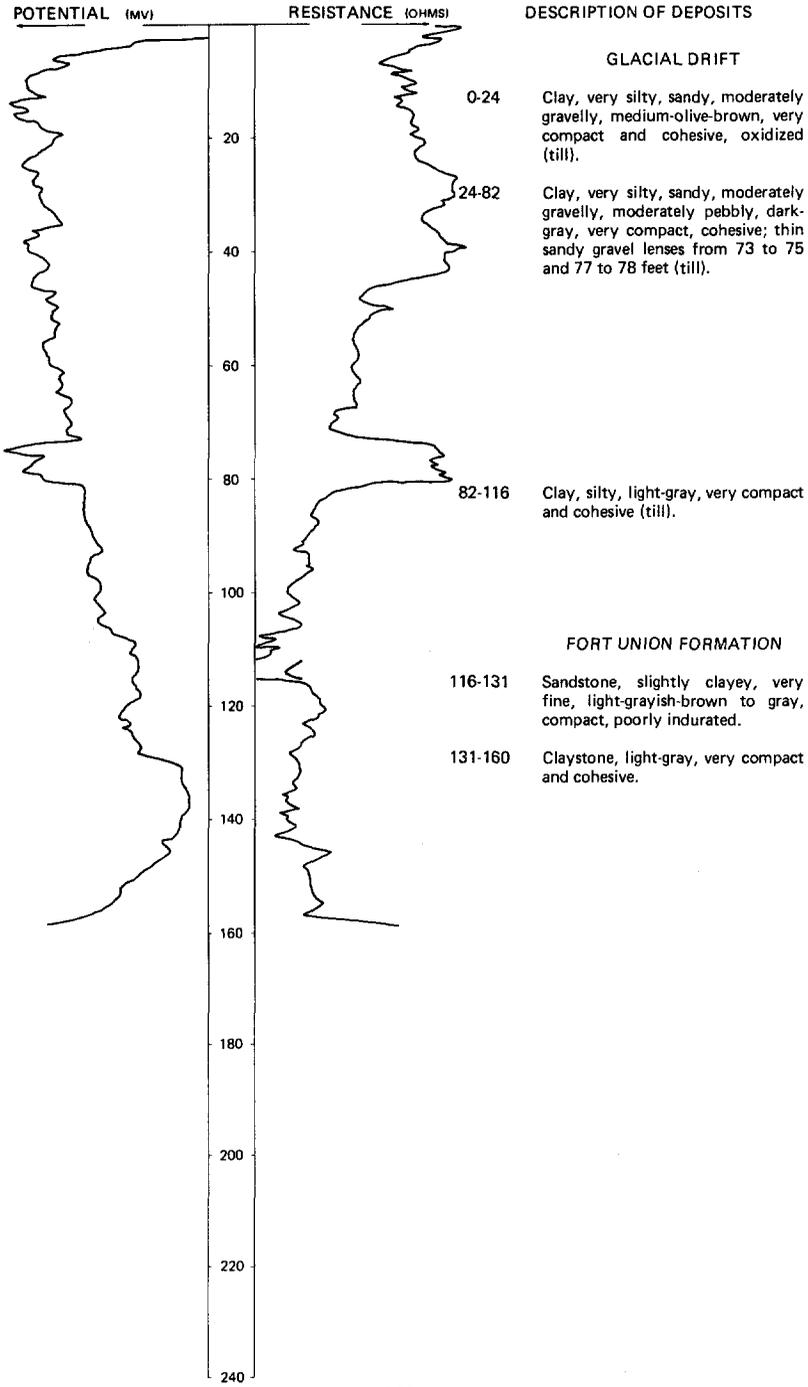
NDSWC 10219

LOCATION: 149-077-10BBB

DATE DRILLED: 8/17/78

ALTITUDE: 1884
(FT, NGVD)

DEPTH: 160
(FT)

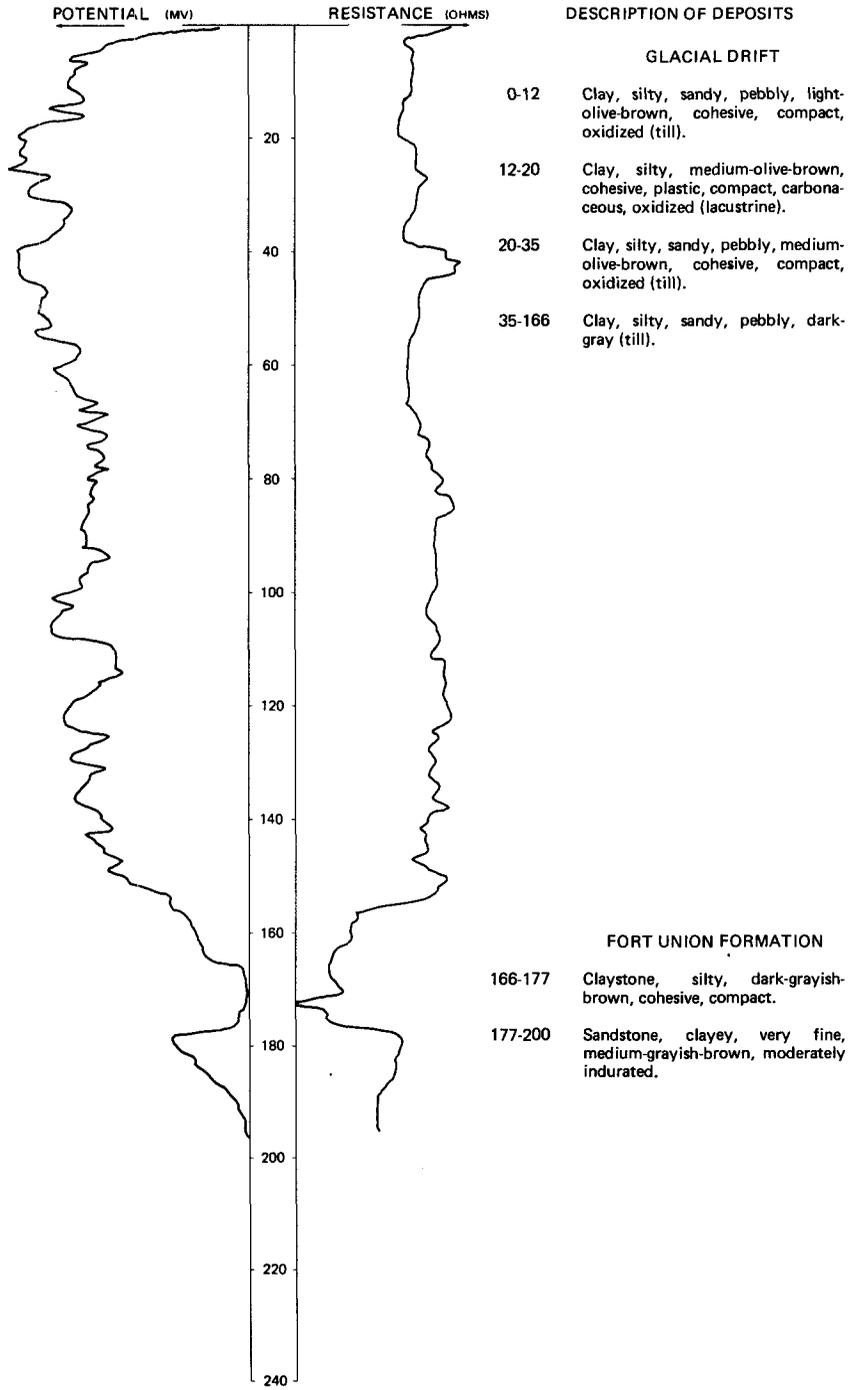


LOCATION: 149-077-10CCC

DATE DRILLED: 8/17/78

ALTITUDE: 1985
(FT, NGVD)

DEPTH: 200
(FT)

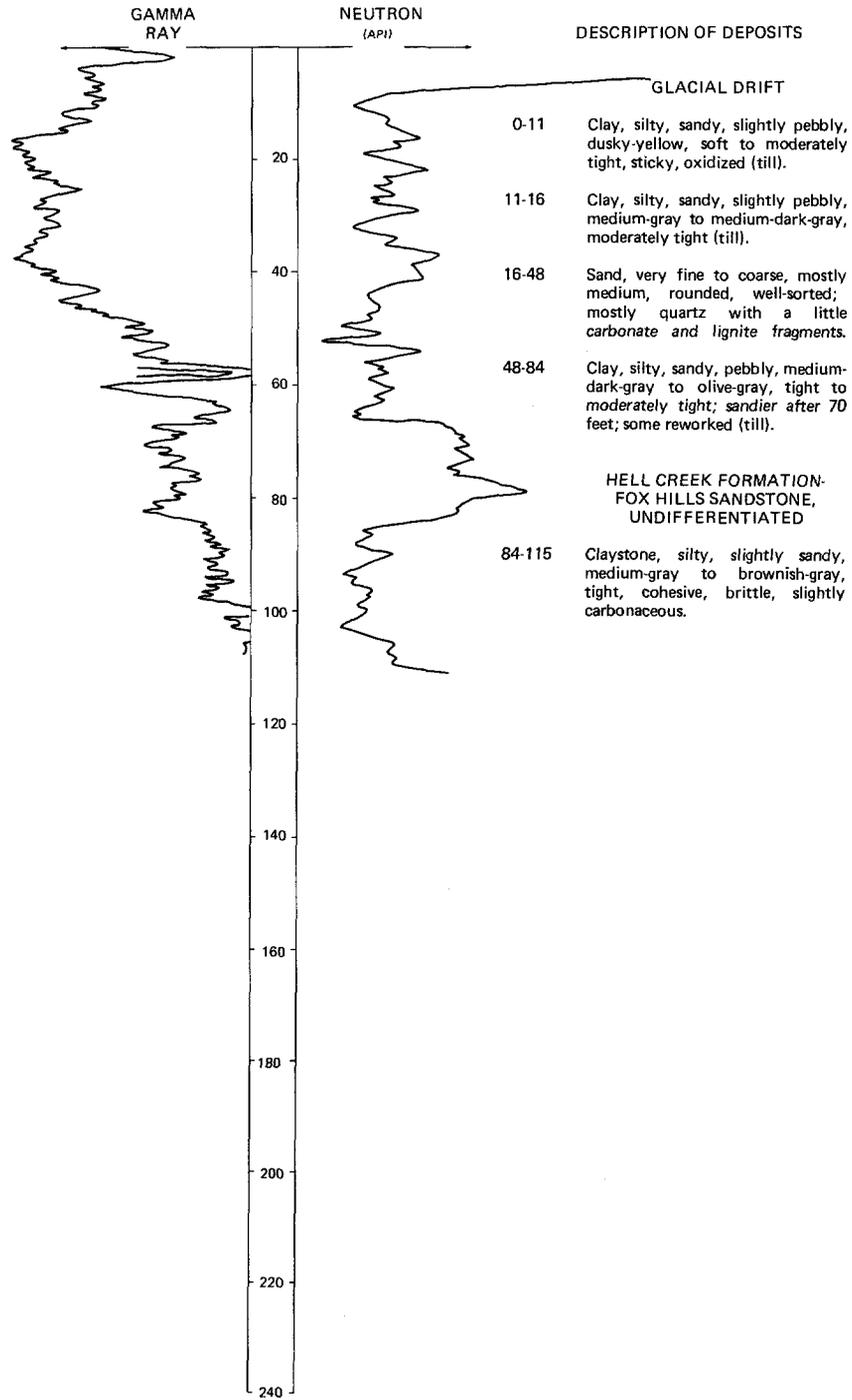


LOCATION: 149-077-11AAA

DATE DRILLED: 6/09/78

ALTITUDE: 1680
(FT, NGVD)

DEPTH: 115
(FT)

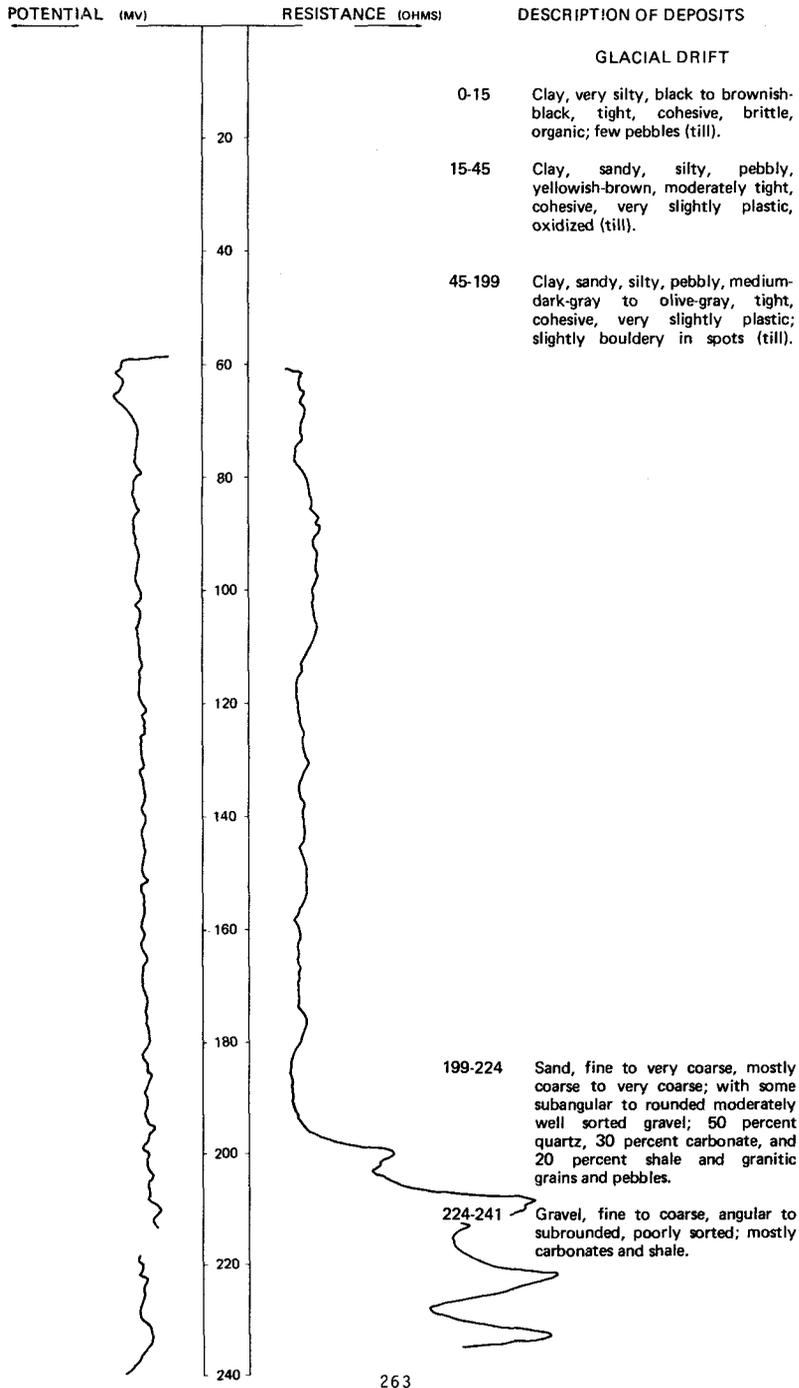


LOCATION: 149-077-15CCC1, 2, 3

DATE DRILLED: 6/09/78

ALTITUDE: 2013
(FT. NGVD)

DEPTH: 975
(FT)

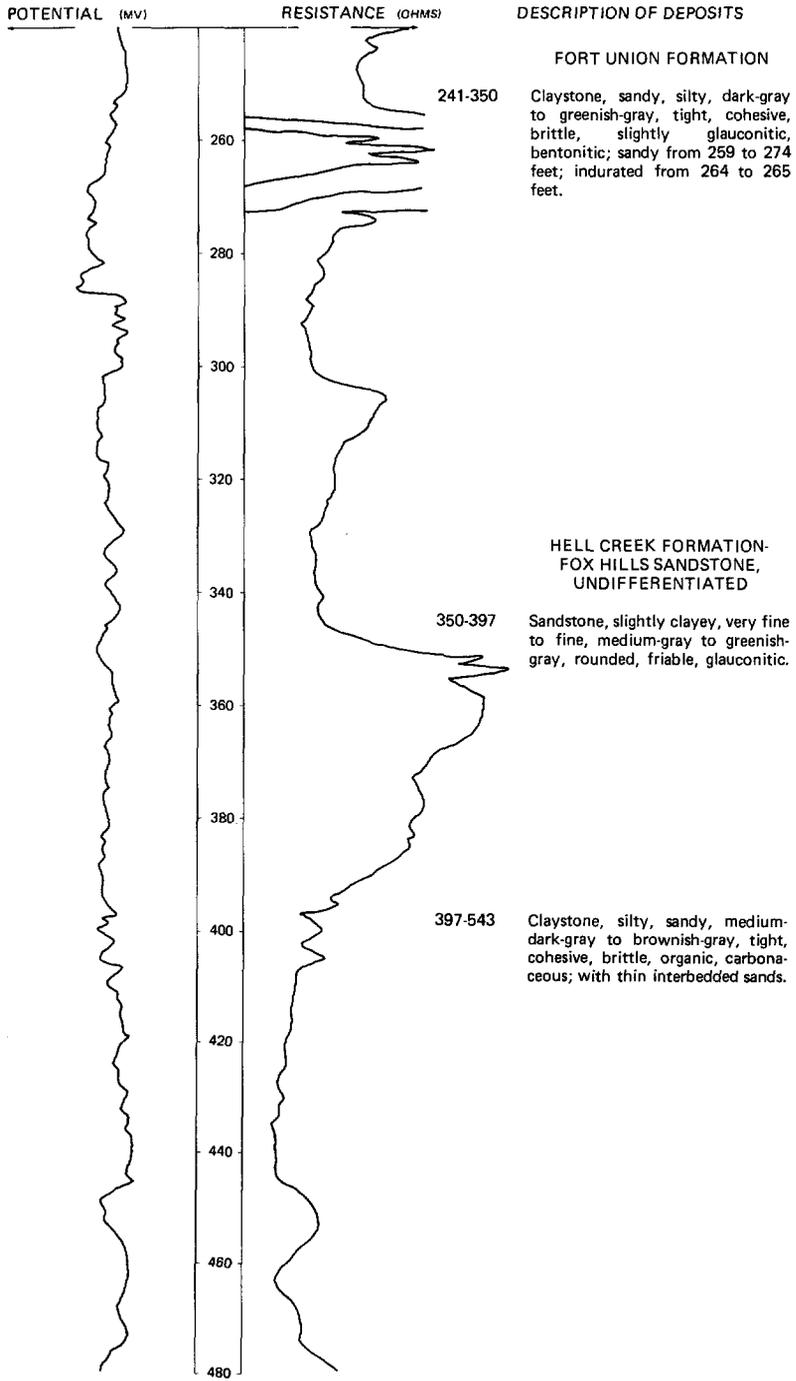


LOCATION: 149-077-15CCC1, 2, 3

DATE DRILLED: 6/09/78

ALTITUDE: 2013
(FT, NGVD)

DEPTH: 975
(FT)

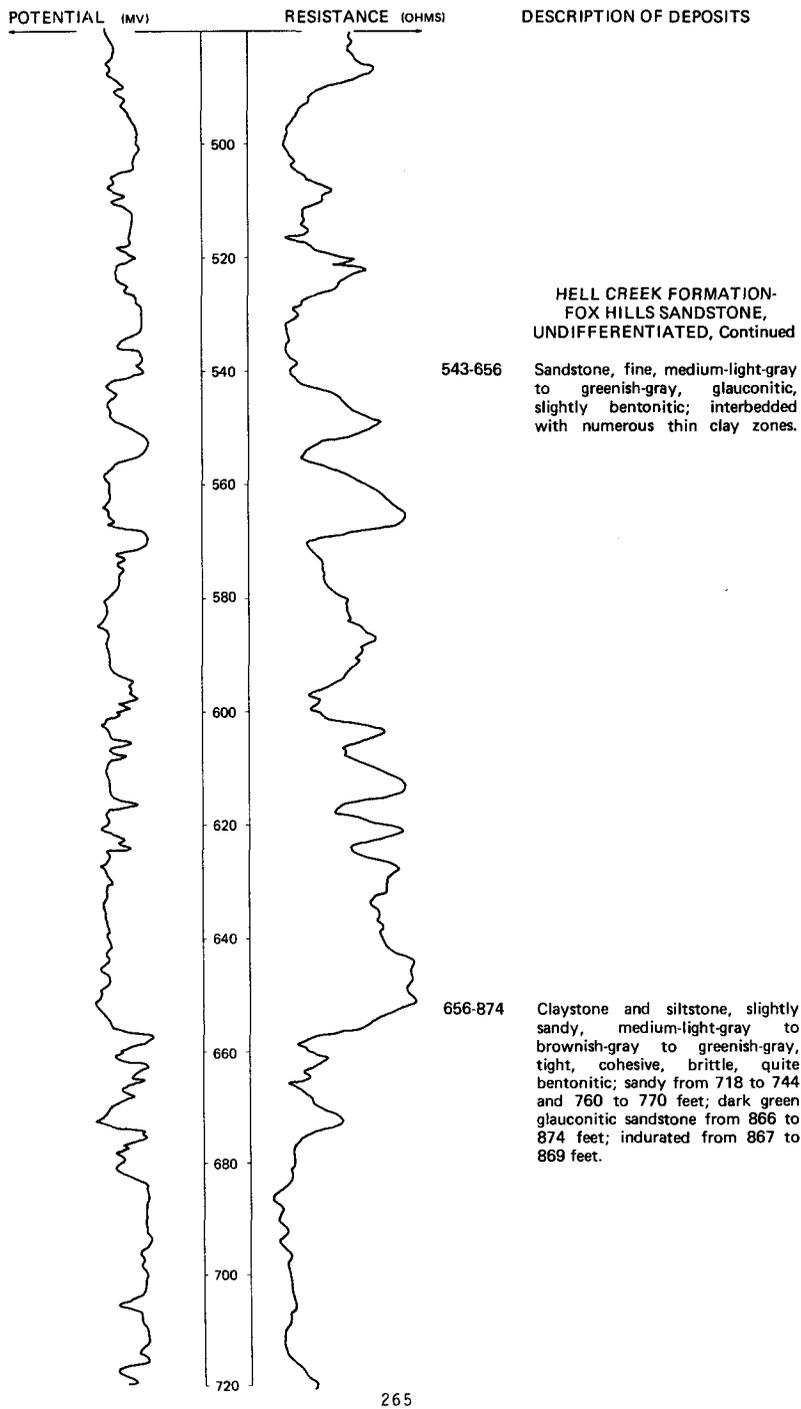


LOCATION: 149-077-15CCC1, 2, 3

DATE DRILLED: 6/09/78

ALTITUDE: 2013
(FT, NGVD)

DEPTH: 975
(FT)

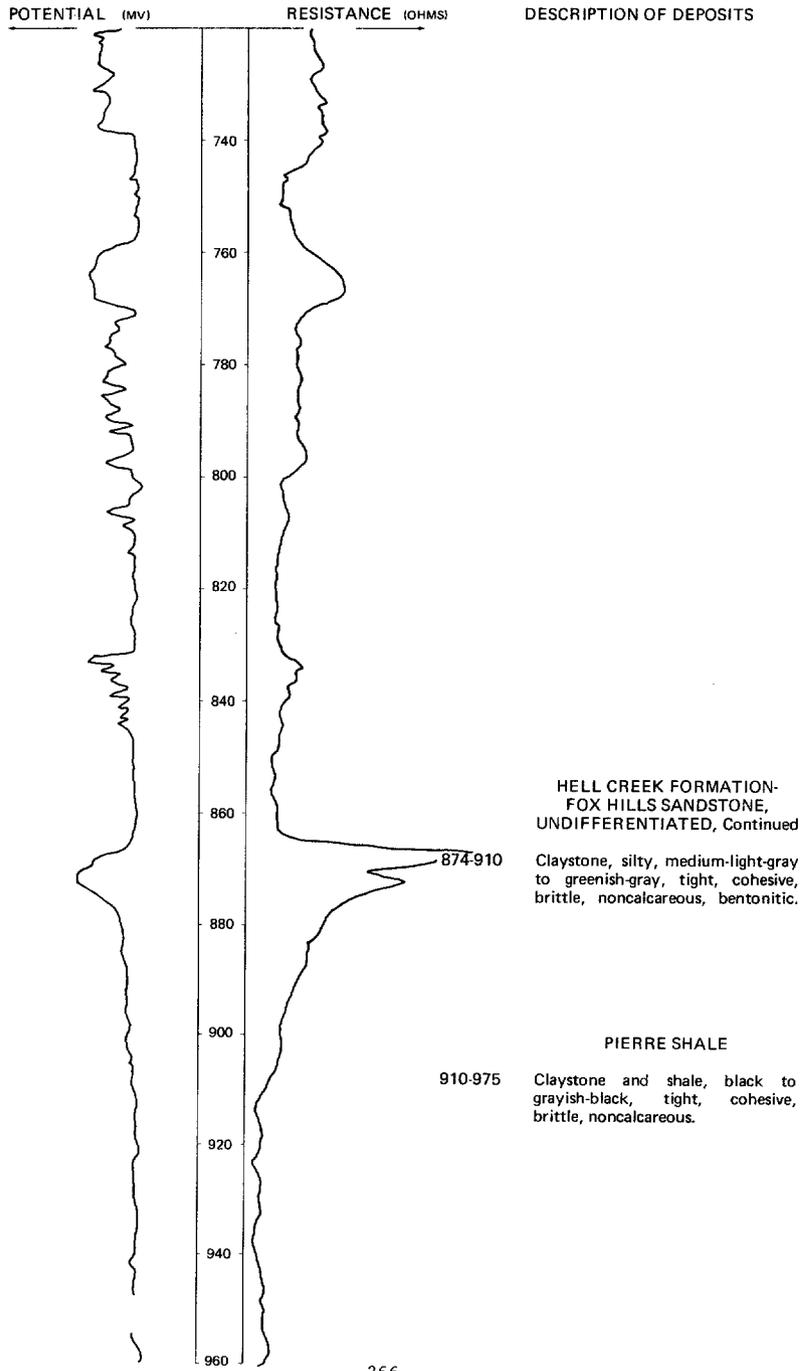


LOCATION: 149-077-15CCC1, 2, 3

DATE DRILLED: 6/09/78

ALTITUDE: 2013
(FT, NGVD)

DEPTH: 975
(FT)



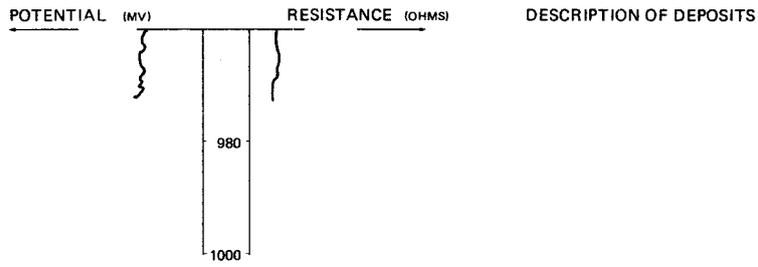
NDSWC 5329, 5329A, 5329B, Continued

LOCATION: 149-077-15CCC1, 2, 3

DATE DRILLED: 6/09/78

ALTITUDE: 2013
(FT, NGVD)

DEPTH: 975
(FT)



150-074-08CDB
(Log from Russell Drilling Co.)

Altitude: 1680 feet

Date drilled: 3/08/74

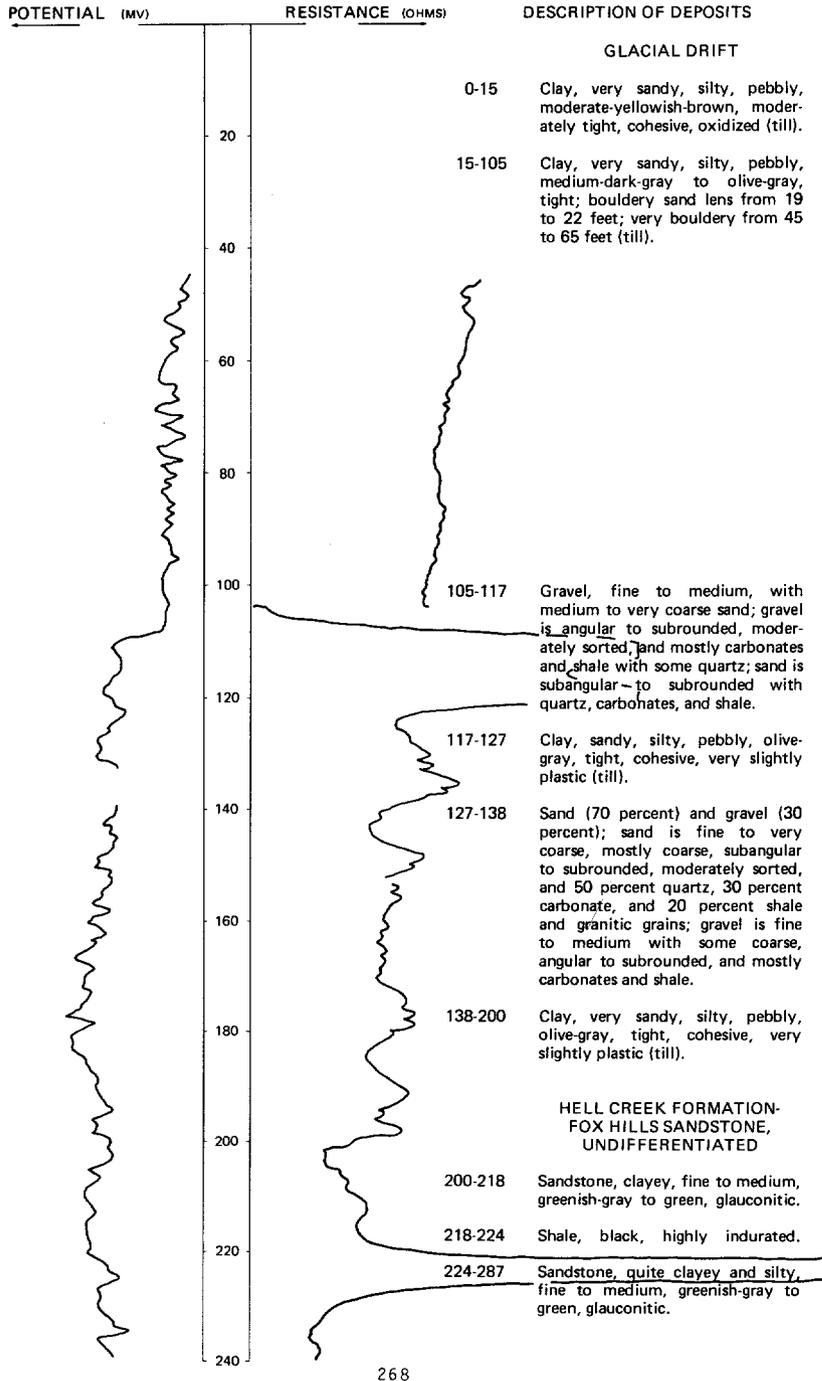
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1	1
	Sand and gravel-----	29	30
	Clay, blue-----	92	122
	Gravel and sand-----	8	130
	Clay, blue-----	110	240
	Bedrock sand-----	40	280

LOCATION: 150-074-14BBB

DATE DRILLED: 6/06/78

ALTITUDE: 1625
(FT, NGVD)

DEPTH: 415
(FT)

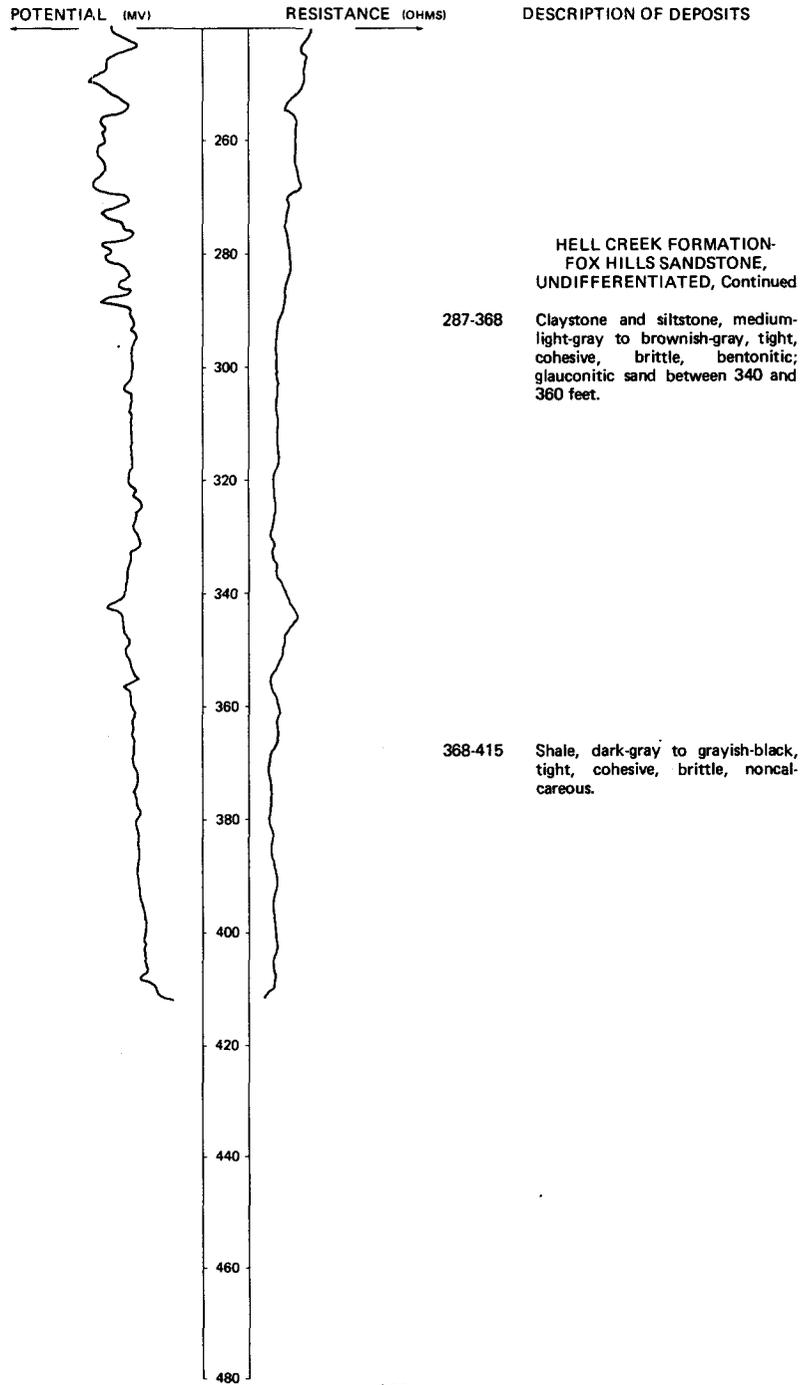


LOCATION: 150-074-148BB

DATE DRILLED: 6/06/78

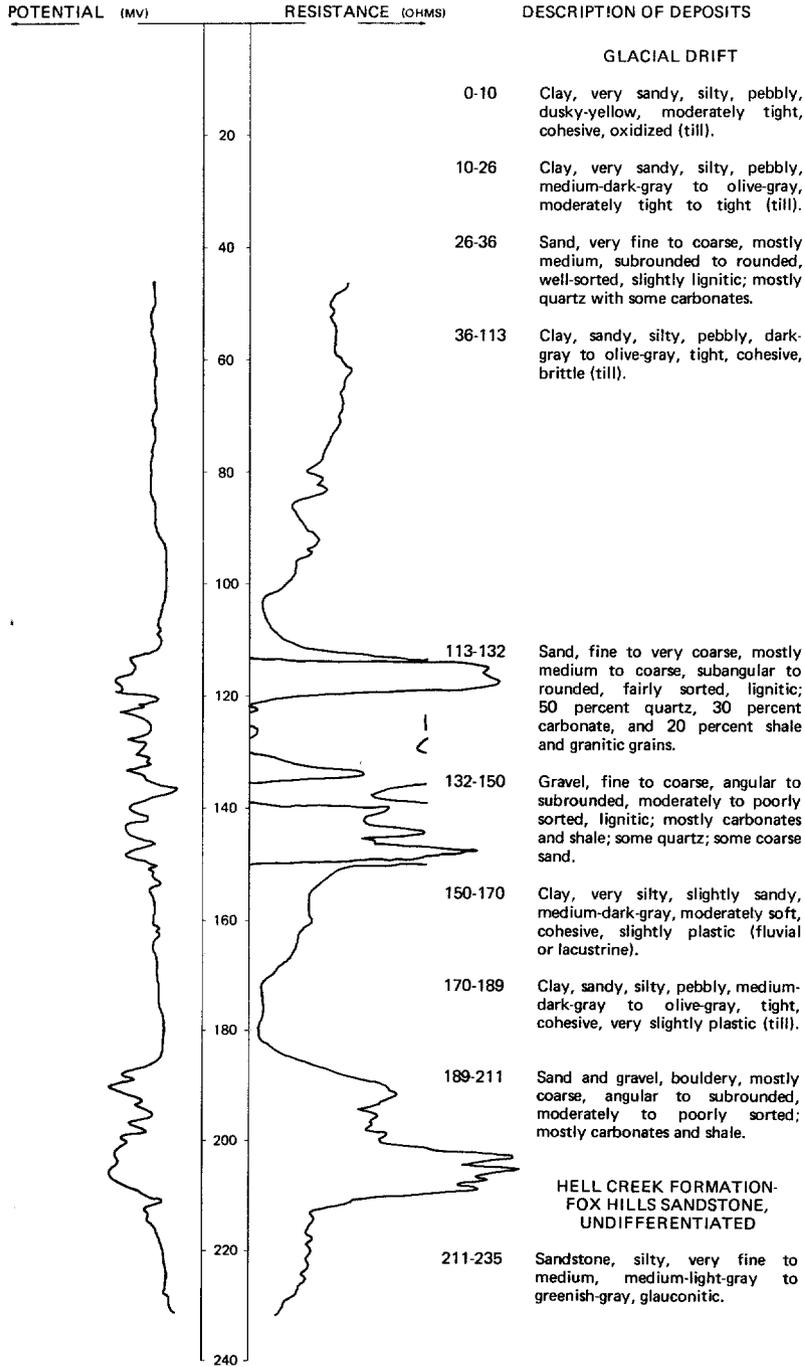
ALTITUDE: 1625
(FT. NGVD)

DEPTH: 415
(FT)



LOCATION: 150-074-14CCC
 ALTITUDE: 1630
 (FT, NGVD)

DATE DRILLED: 6/07/78
 DEPTH: 235
 (FT)



150-074-21CCA
(Log from Russell Drilling Co.)

Altitude: 1615 feet

Date drilled: 1/01/76

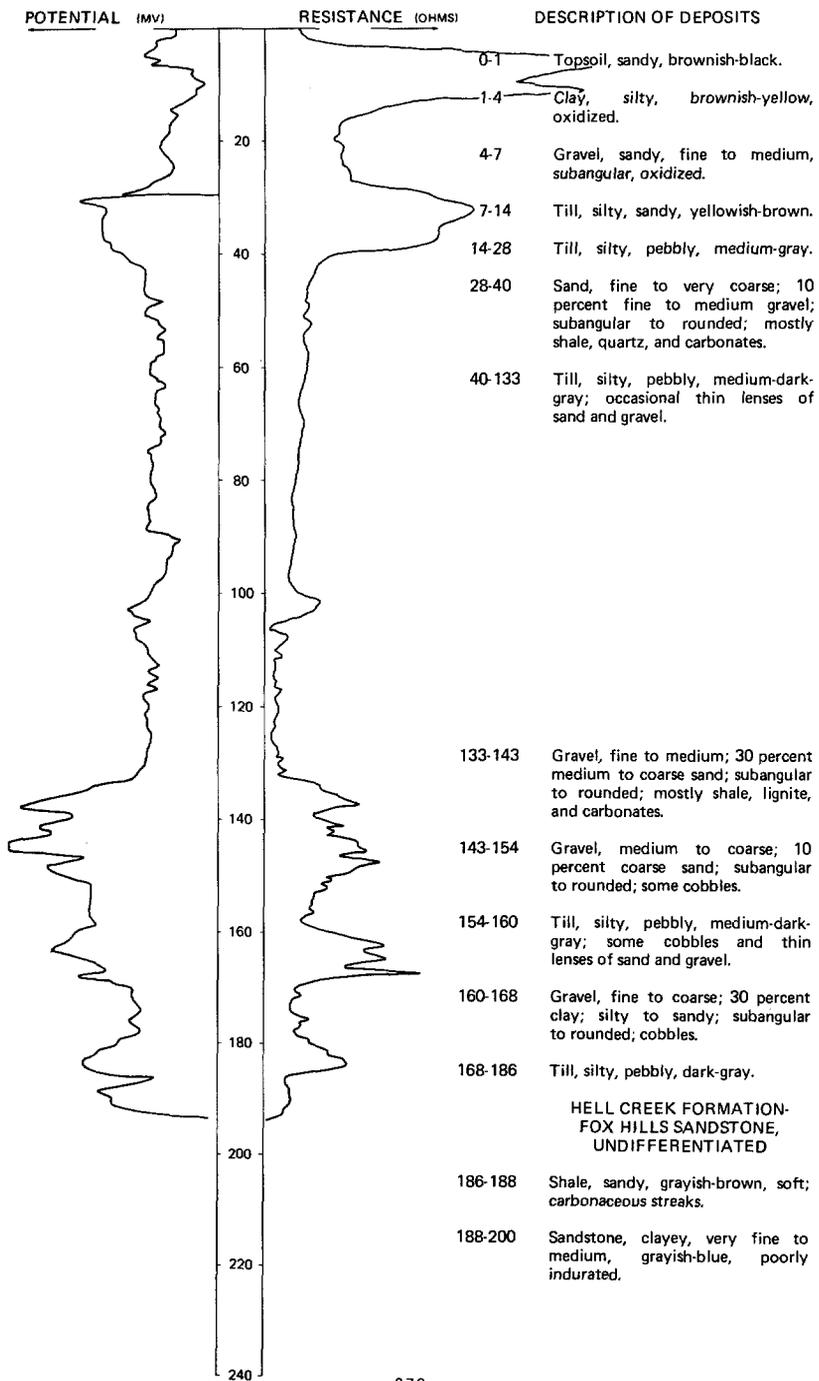
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1	1
	Till, yellow-----	22	23
	Till, gray-----	41	64
	Gravel and sand-----	3	67
	Till, gray-----	31	98
	Sand and lignite-----	17	115
	Gravel-----	25	140
	Till, gray-----	60	200
	Bedrock sand-----	70	270

LOCATION: 150-074-23CCC

DATE DRILLED: 8/14/79

ALTITUDE: 1635
(FT, NGVD)

DEPTH: 200
(FT)

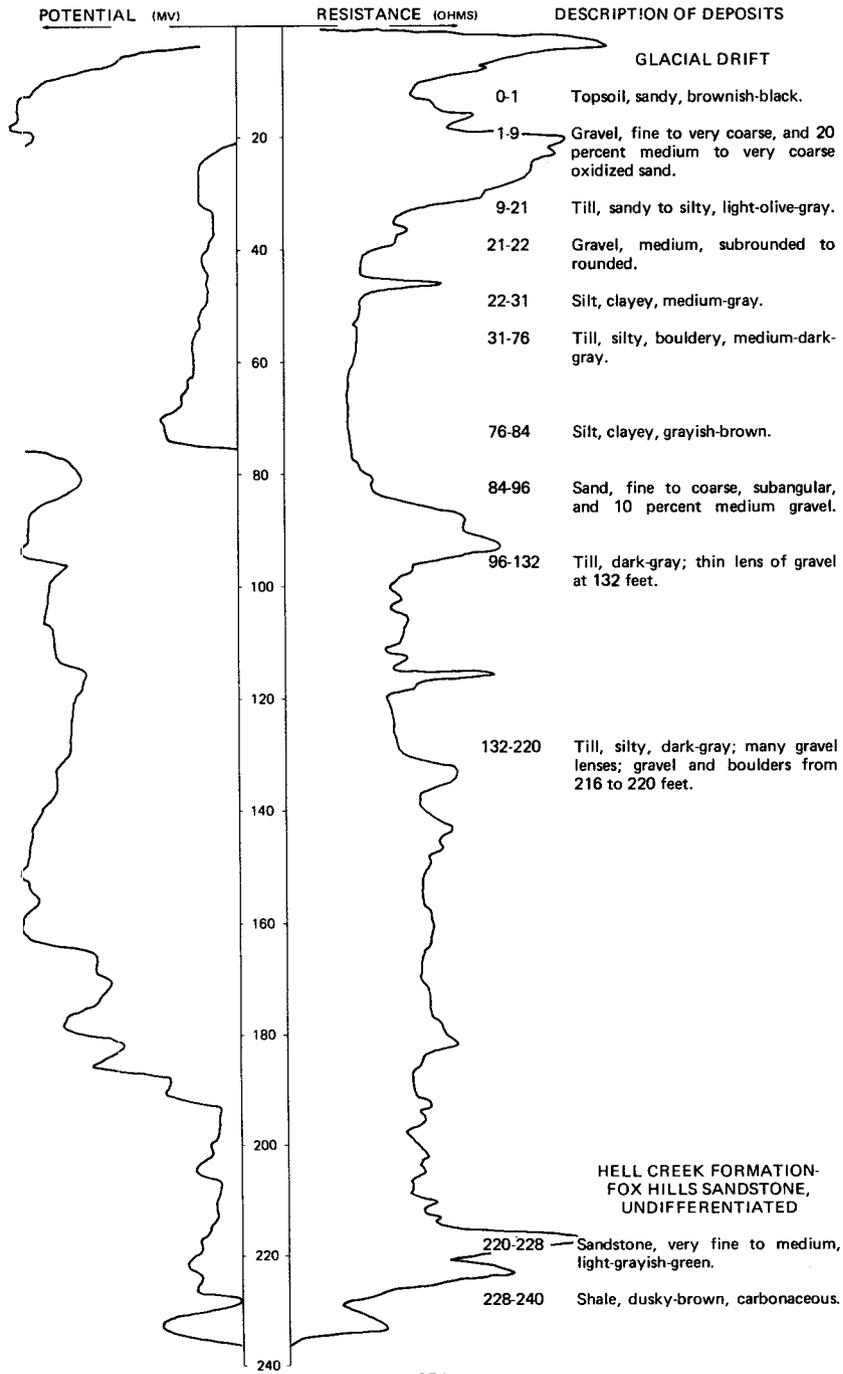


LOCATION: 150-074-34AAA

DATE DRILLED: 8/22/78

ALTITUDE: 1620
(FT, NGVD)

DEPTH: 240
(FT)



150-075-01BBB
(Log from Driver Well Drilling, Inc.)

Altitude: 1680 feet

Date drilled: 5/19/72

GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil.....	2	2
	Clay, brown.....	20	22
	Clay, blue.....	20	42
	Rock.....	1	43
	Clay and gravel.....	6	49
	Rock.....	1	50
	Clay, blue.....	45	95
	Clay, blue, and gravel bedrock.....	6	101
	Clay, blue.....	61	162
	Water-bearing sand.....	8	170

150-075-04AAD
(Log from Driver Well Drilling, Inc.)

Altitude: 1800 feet

Date drilled: 5/18/72

	Topsoil.....	2	2
	Sand, fine.....	10	12
	Clay, brown.....	16	28
	Clay, blue.....	10	38
	Rock.....	4	42
	Clay.....	2	44
	Clay, sandy.....	14	58
	Rock.....	2	60
	Clay.....	22	82
	Clay, brown.....	1	83
	Clay, blue.....	3	86
	Gravel streaks.....	1	87
	Clay.....	3	90
	Gravel and rock.....	8	98

150-075-10DCD
NDSWC 10225

Altitude: 1620 feet		Date drilled: 8/22/78	
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
Glacial drift:			
	Topsoil, sandy, brownish-black-----	1	1
	Clay, leached; yellowish brown with gray streaks-----	5	6
	Till, silty to sandy, yellowish-brown, oxidized-----	14	20
	Gravel, fine to coarse, mostly medium, subrounded, mostly igneous, oxidized; 25 percent sand-----	21	41
	Clay, silty, medium-dark-gray-----	1	42
	Gravel, fine to medium, subrounded to rounded, igneous; 30 percent coarse sand; detrital lignite and shale; carbonates-----	14	56
	Sand, medium to very coarse; mostly coarse with lenses of gravel and clay-----	20	76
	Till, silty, sandy, medium-dark-gray; lenses of silt and gravel-----	23	99
	Till, dark-gray, tight-----	21	120
	Gravel, fine to coarse; some cobbles and boulders; 20 percent sand-----	5	125
	Till, dark-gray, tight-----	7	132
	Silt, dark-brownish-gray; carbonaceous streaks; sandy intervals-----	8	140
	Till, pebbly, dark-gray; occasional thin lens of gravel and boulders-----	5	145
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Sandstone, clayey, very fine to medium, grayish-green, semiconsolidated-----	7	152
	Shale, light-greenish-gray-----	2	154
	Sandstone, grayish-green, very fine to fine, soft to semiconsolidated; interbedded with lenses of shale-----	6	160

150-075-18CCD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1623 feet	Date drilled:	6/09/52
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Sand and gravel, silty, fine to medium, buff-----	5	5
	Sand, fine to medium, clean, poorly graded, buff-----	36	41
	Sand, silty; clay binder; lignite; grayish brown-----	4	45
	Sand, fine to medium, silty to clean, poorly graded, brown to gray-----	25	70
	Sand, fine to very fine; silt and clay; clayey; gray-----	40	110
	Silt, laminated, light-gray-----	12	122
	Boulder at 122 feet-----	---	122

150-075-19BBA
(Log modified from U.S. Bureau of Reclamation)

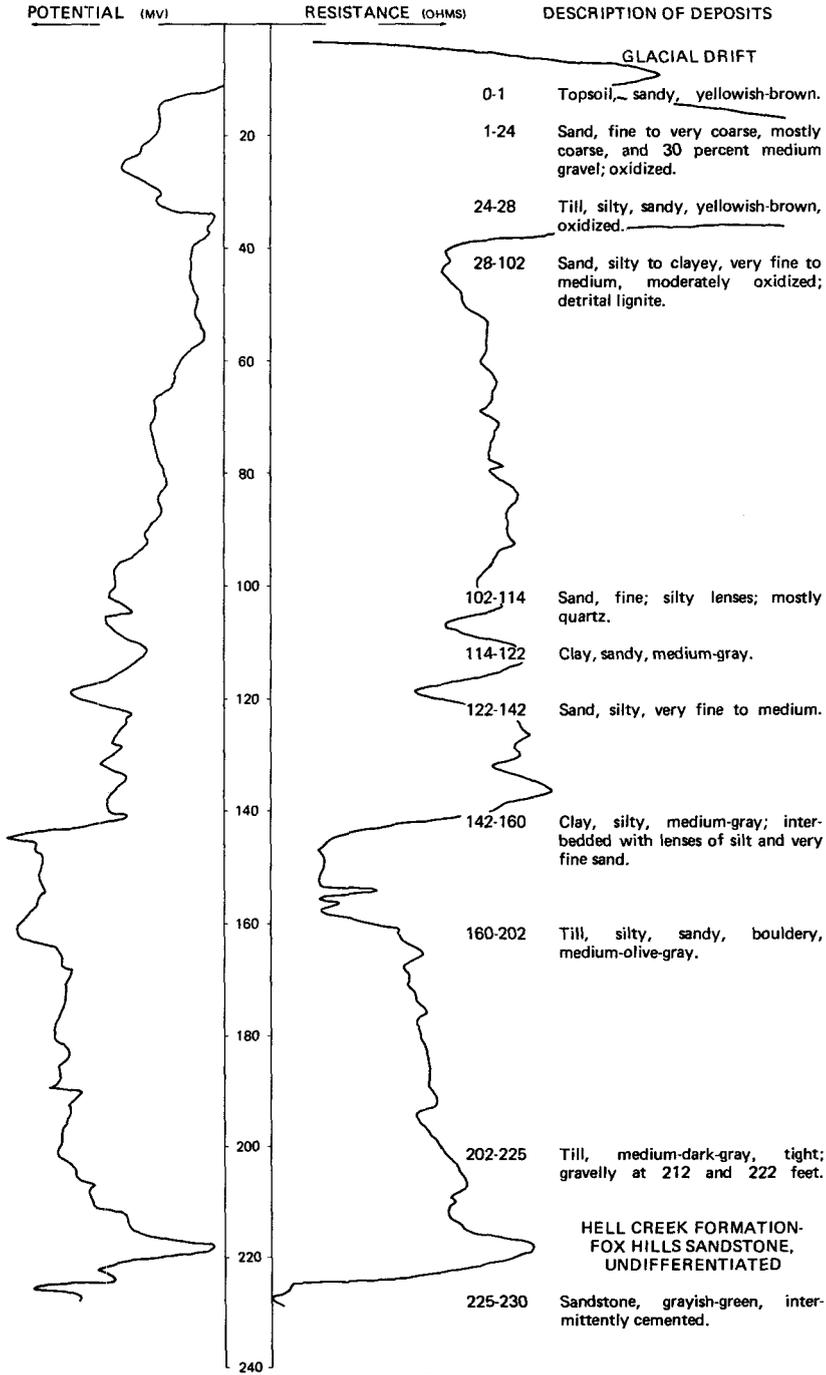
Altitude:	1645 feet	Date drilled:	4/08/54
	Clay (glacial till), silty, sandy; pebbles; cobbles; buff to gray-----	40	40
	Gravel, coarse, abundant cobbles; clayey; brown-----	5	45
	Silt, sandy, buff-----	5	50
	Sand, silty; some clay; buff-----	6	56
	Silt, sandy, laminated, buff to gray-----	26	82
	Clay (till), silty, sandy; pebbles; cobbles; gray-----	26.1	108.1
	Sand and gravel, silty, clayey, poorly graded, gray-----	7.7	115.8
	Sand, medium, silty, gravelly-----	3.1	118.9
	Silt and sand; mostly silt with fine sand; trace of clay; gray-----	50.1	169
	Clay (till), silty, sandy; pebbles; cobbles; gray-----	69.5	238.5
	Sand, fine to medium; some gravel; silty; trace of clay; gray-----	27.5	266
	Clay (till), silty, sandy; pebbles; cobbles; gray-----	12.5	278.5
	Sand and gravel, silty, coarse, gray-----	5.5	284
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:	Shale, silty; clay shale; gray to brown-----	6	290

LOCATION: 150-075-19BCB

DATE DRILLED: 8/21/78

ALTITUDE: 1620
(FT, NGVD)

DEPTH: 230
(FT)

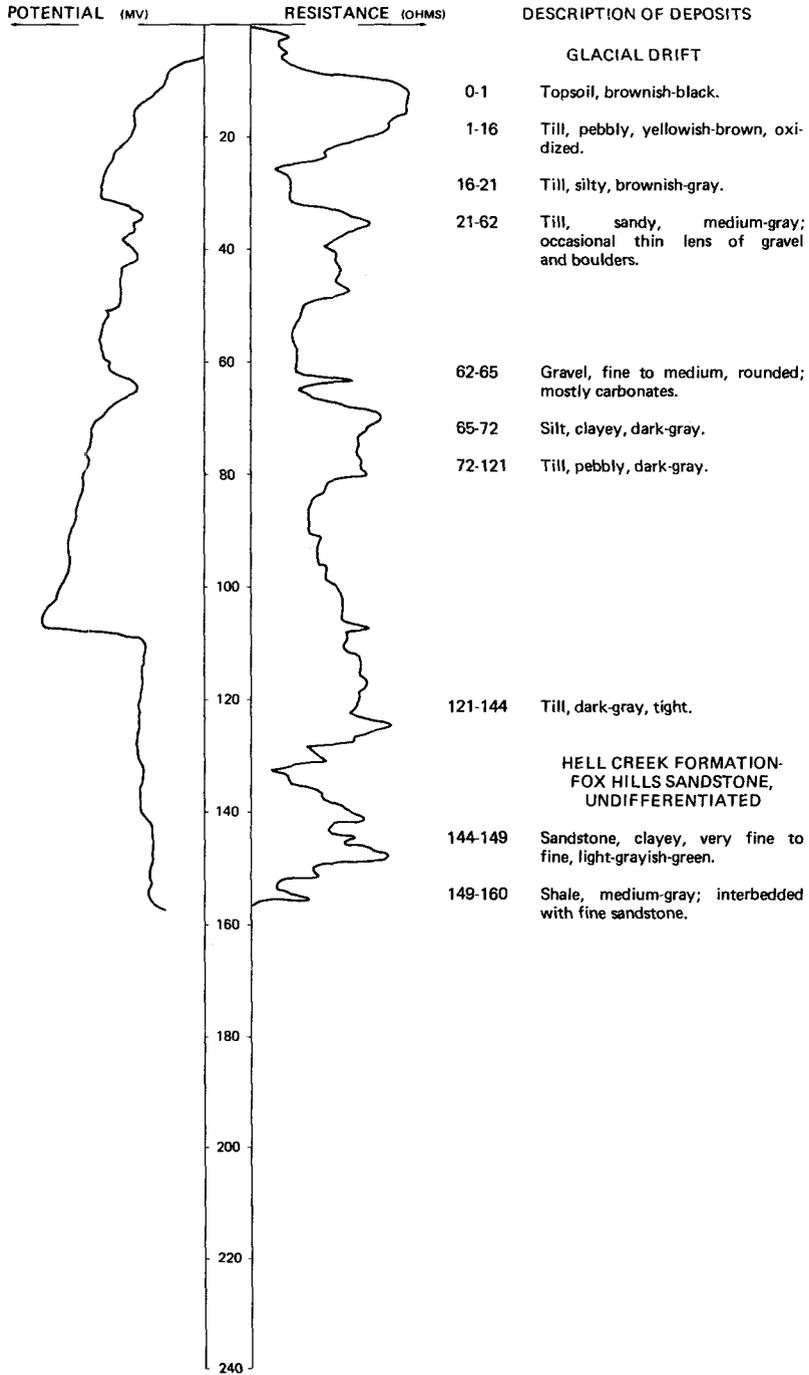


150-075-21CCC
NDSWC 5323

Altitude:	1670 feet	Date drilled:	6/07/78
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
Glacial drift:	Clay, very sandy, silty, pebbly, moderate-yellowish-brown, moderately tight to soft, oxidized (till)-----	8	8
	Sand, gravel, and abundant boulders; sand is mostly coarse to very coarse and mostly quartz with some carbonate and shale; gravel is fine to medium with coarse boulders and mostly carbonates with shale; angular to subrounded; poor sorting; mixed eight bags of mud but caving continued; abandoned after 2 hours-----	22	30

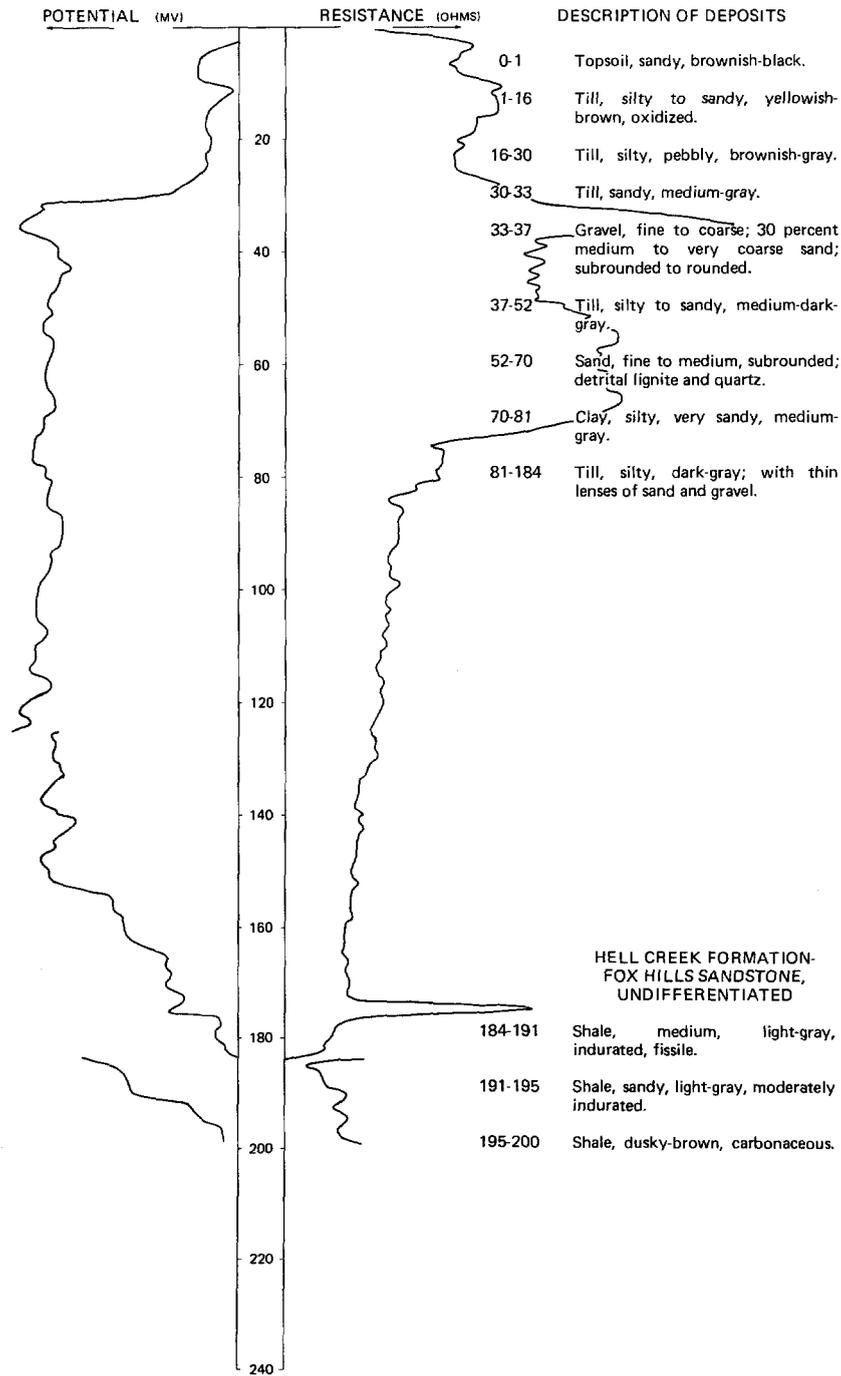
LOCATION: 150-075-26ABB
 ALTITUDE: 1665
 (FT, NGVD)

DATE DRILLED: 8/22/78
 DEPTH: 160
 (FT)



LOCATION: 150-075-26CCC
 ALTITUDE: 1685
 (IFT, NGVD)

DATE DRILLED: 8/13/79
 DEPTH: 200
 (FT)



150-075-30AAA1, 2
 NDSWC 5324, 5324A

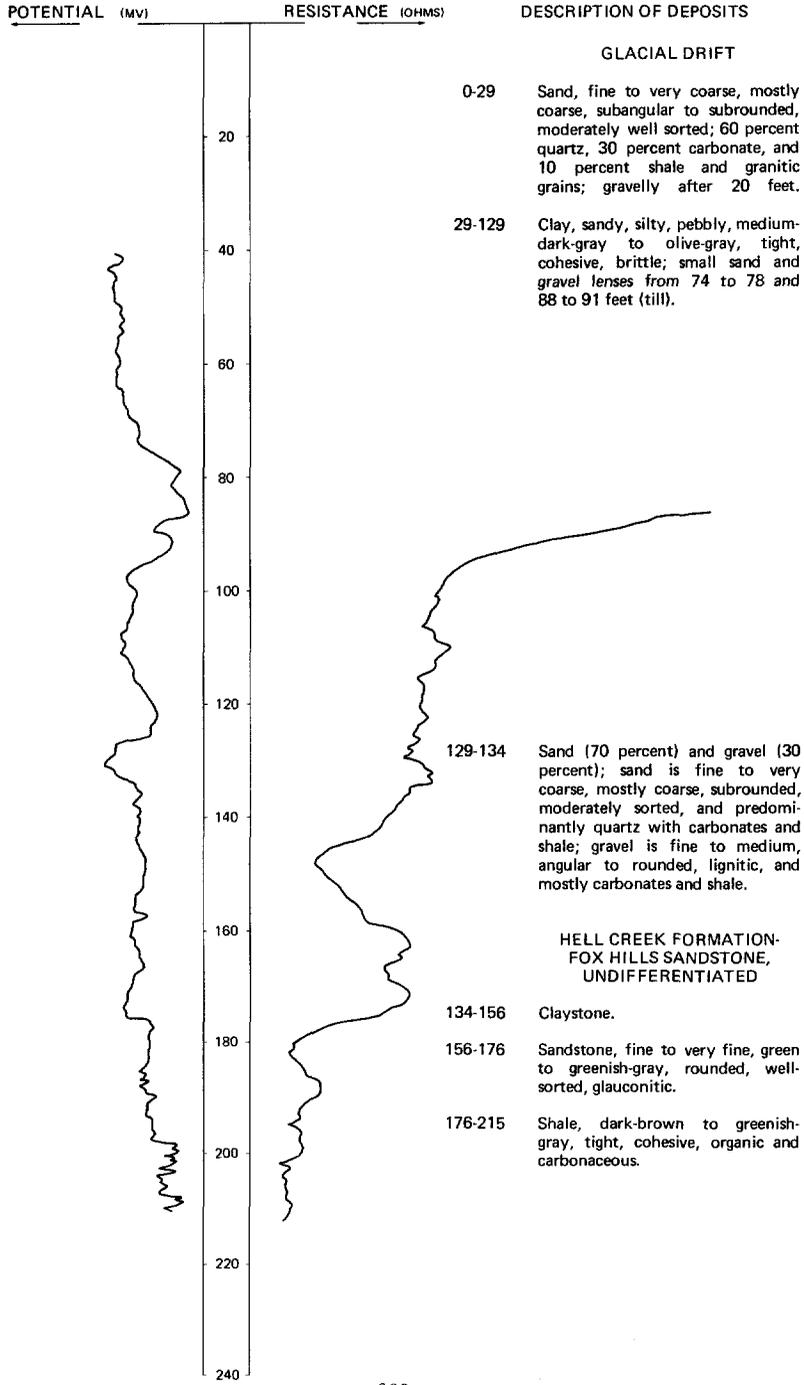
Altitude: 1600 feet		Date drilled: 6/08/78	
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
Glacial drift:			
	Sand, medium to very coarse, mostly coarse, subangular to rounded, well-sorted; 50 percent quartz, 30 percent carbonate; and 20 percent granitic grains; abundant snail shells-----	20	20
	Gravel, fine to coarse, subangular to subrounded; with some coarse to very coarse sand; mostly carbonates and shale with some quartz; taking water-----	15	35
	Clay, sandy, silty, pebbly, bouldery, medium-dark-gray to olive-gray, tight, cohesive, very slightly plastic; upper gravel caving heavily (till)-----	120	155
	Gravel and sand; gravel is fine to coarse, angular to subrounded, poorly sorted, and lignitic; mostly carbonates with shale, granitics, and quartz; abundant rocks; more than 2-inch diameter rocks coming up hole-----	35	190
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Claystone, silty, light-brown to moderate-brown, tight, organic, carbonaceous-----	5	195
	Abandoned drilling due to severe caving-----	---	195

LOCATION: 150-075-31DDD

DATE DRILLED: 6/08/78

ALTITUDE: 1616
(FT, NGVD)

DEPTH: 215
(FT)



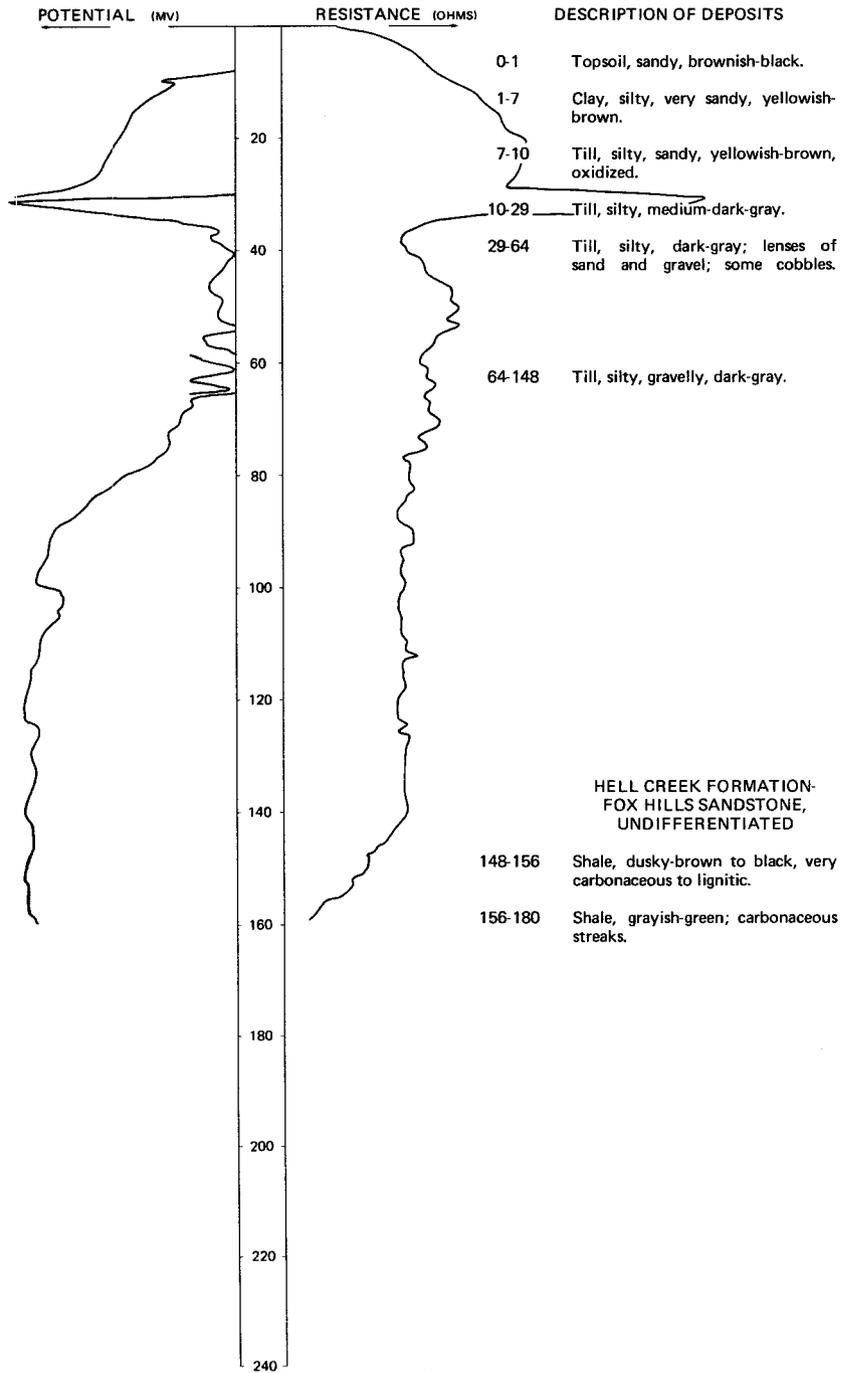
NDSWC 11018

LOCATION: 150-075-34DDC

DATE DRILLED: 8/13/79

ALTITUDE: 1690
(FT, NGVD)

DEPTH: 180
(FT)



150-075-35BBD
(Log from Russell Drilling Co.)

Altitude:	1645 feet	Date drilled:	1/16/73
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1	1
	Clay, yellow-----	29	30
	Clay, blue-----	160	190
	Shale-----	20	210
	Sand, fine, blue-----	77	287

150-076-02CAD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1609	Date drilled:	11/03/69
	Topsoil, dark-brown-----	2	2
	Clay (glacial till); sandy, silty; lignite; fine gravel; calcareous; brown-----	23	25
	Clay (till); sandy, silty; scattered gravel and lignite; calcareous; gray-----	25	50

150-076-03ACA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1619 feet	Date drilled:	11/05/69
	Topsoil-----	1	1
	Clay (glacial till); silt and clay; lignite throughout; some fine gravel; calcareous; brown to gray-----	19	20
Fort Union Formation:	Clay shale; silty with sand pockets; gray-----	30	50

150-076-11ABA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1606 feet	Date drilled:	10/31/69
	Topsoil; fine sand; silty; slight HCL reaction; organic; dark brown-----	2	2
	Clay (glacial till); limey streaks; sandy; silty; some fine gravel and lignite; calcareous; tan to dark brown-----	8	10
	Silty sand; 80 percent mostly fine to coarse sand; 5 percent gravel; calcareous; glaciofluvial; brown-----	9	19
	Sandy clay (till); silty; scattered fine gravel and lignite; calcareous; brown-----	6	25
	Sandy clay; silty with scattered lignite and some fine gravel; calcareous; gray-----	25	50

150-076-12BCB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1615 feet	Date drilled:	10/30/69
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil-----	1	1
	Silty sand; 60 percent fine sand; calcareous; glaciofluvial; brown-----	4	5
	Sandy clay (glacial till); sand; silt; scattered lignite and fine gravel; brown-----	5	10
	Silty sand; 45 percent fine to coarse sand; 40 percent gravel; calcareous; glaciofluvial; brown-----	5	15
	Silty clay (till), sandy, calcareous, light-brown-----	1.5	16.5
	Silty sand; 80 percent fine sand; clay; some gravel; calcareous; glaciofluvial; brown-----	33.5	50

150-076-12CAB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1638 feet	Date drilled:	10/29/69
	Topsoil-----	0.5	0.5
	Silty sand; 60 percent mostly fine sand; 20 percent fine to 2-inch gravel; some clay; calcareous; glaciofluvial; brown to light gray-----	49.5	50

150-076-12DBB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1591 feet	Date drilled:	1/12/53
Glacial drift:	Topsoil-----	1.5	1.5
	Sand, fine, clean; trace of silt; some gravel; poorly graded; brown-----	14.5	16
	Sand, fine; trace of clay; buff to gray-----	9	25
	Sand, fine to very fine; trace of silt; clayey; gray-----	46	71
	Silt; mostly very fine sand; trace of clay; some small lignite; gray-----	9	80
	Sand, very fine, silty, clayey, gray-----	30	110
	Sand, very fine to fine; some silt; lignite fragments; gray-----	64.5	174.5
	Clay, silty; some gravel-----	2.5	177
Hall Creek Formation-Fox Hills Sandstone, undifferentiated:	Shale (clay shale), silty, sandy; sandy shale to shaly sand; greenish gray-----	17	194
	Shale (clay shale), organic, silty, brown-----	5	199

150-076-13BAD
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1617 feet	Date drilled:	10/24/69
	Topsoil; silty sand-----	1	1
	Silty sand, gravelly, calcareous, brown-----	4	5
	Silty gravel, sandy, calcareous, glaciofluvial, light-brown to tan-----	5	10
	Clayey silt, sandy, silty, pebbly, calcareous, light-tan-----	10	20
	Silty sand; gravelly with some cobbles and boulders; trace of clay; calcareous; gray-----	2.5	22.5
	Clay (glacial till), sandy, silty; gravel throughout; some cobbles and boulders; trace of clay; pebbles; bluish gray-----	27.5	50

150-076-13CAC
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1607 feet	Date drilled:	1/03/53
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Sand, fine to medium; some silt; trace of fine gravel; brown-----	12.1	12.1
	Sand, fine, silty; clay streaks; gray-----	8.4	20.5
	Sand, fine to medium; trace of fine gravel; brown-----	2.9	23.4
	Clay (glacial till); silt and sand; some shale and lignite; pebbles; cobbles and boulders; gray-----	5.7	29.1
	Sand, fine, silty, gray-----	3.9	33
	Clay (till); silt and sand; some shale and lignite; pebbles; cobbles and boulders; gray-----	83	116
	Sand, fine to medium, silty, gray-----	8.2	124.2
	Clay (till); silt and sand; some shale and lignite; pebbles; cobbles and boulders; gray-----	30.8	155
	Silt; mostly fine sand; gray-----	30	185
	Sand, fine to medium, silty, poorly graded, gray-----	20	205
	Clay (reworked shale), silty; hard shale; lignite; brown-----	7.4	212.4
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Shale, silty; shale is organic and looks waxy when cut; brown to black-----	18.6	231

150-076-14DDD
(Log modified from U.S. Bureau of Reclamation)

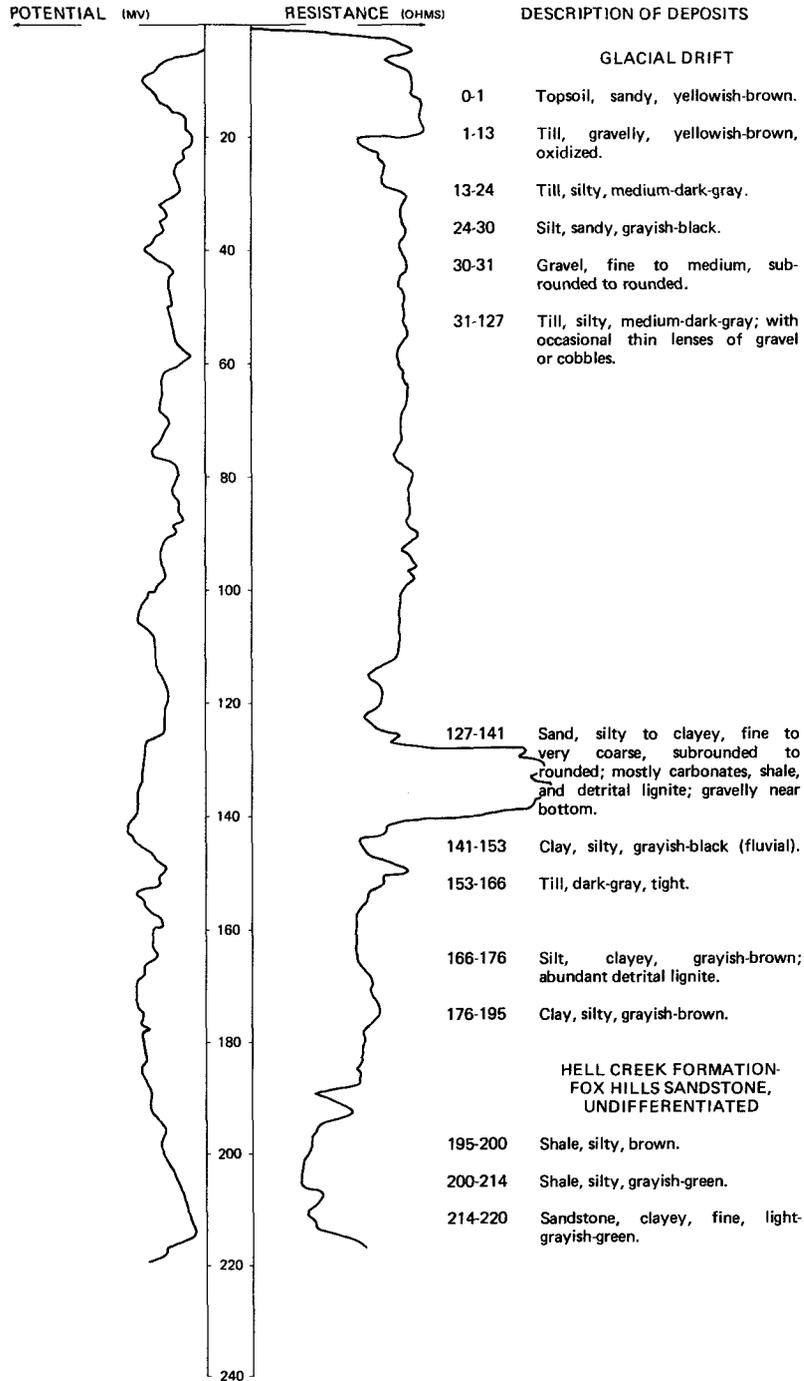
Altitude:	1619 feet	Date drilled:	9/11/69
	Topsoil (glacial till), dark-brown-----	1	1
	Clay (glacial till), sandy, silty; scattered gravel and lignite; spotty HCL reaction; brown-----	19	20
	Silty sand; 70 percent fine to medium sand; spotty HCL reaction; brown-----	15	35
	Sandy clay (glacial till), silty; scattered gravel and lignite; calcareous; gray-----	15	50

LOCATION: 150-076-15CDD

DATE DRILLED: 8/21/78

ALTITUDE: 1638
(FT, NGVD)

DEPTH: 220
(FT)

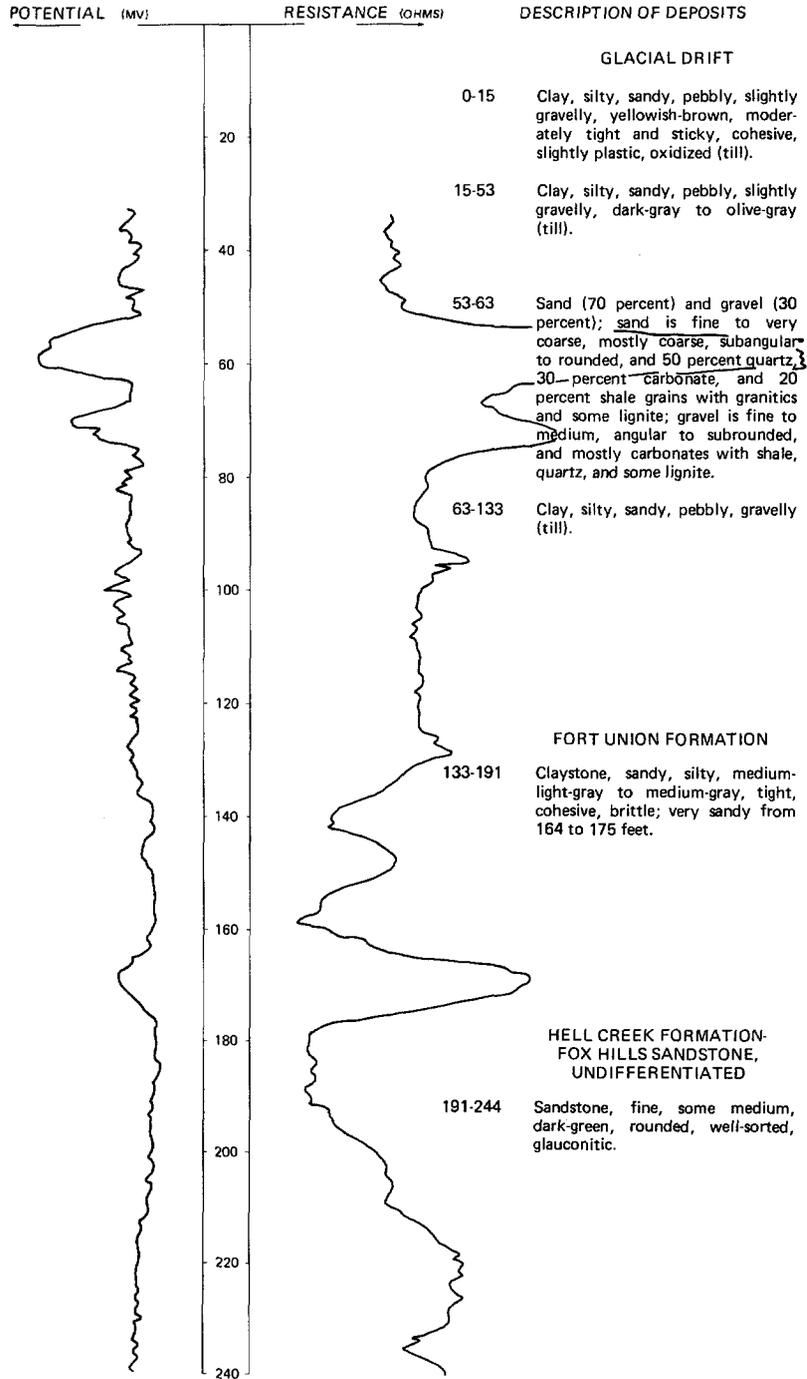


LOCATION: 150-076-21BBB

DATE DRILLED: 11/15/77

ALTITUDE: 1676
(FT, NGVD)

DEPTH: 602
(FT)

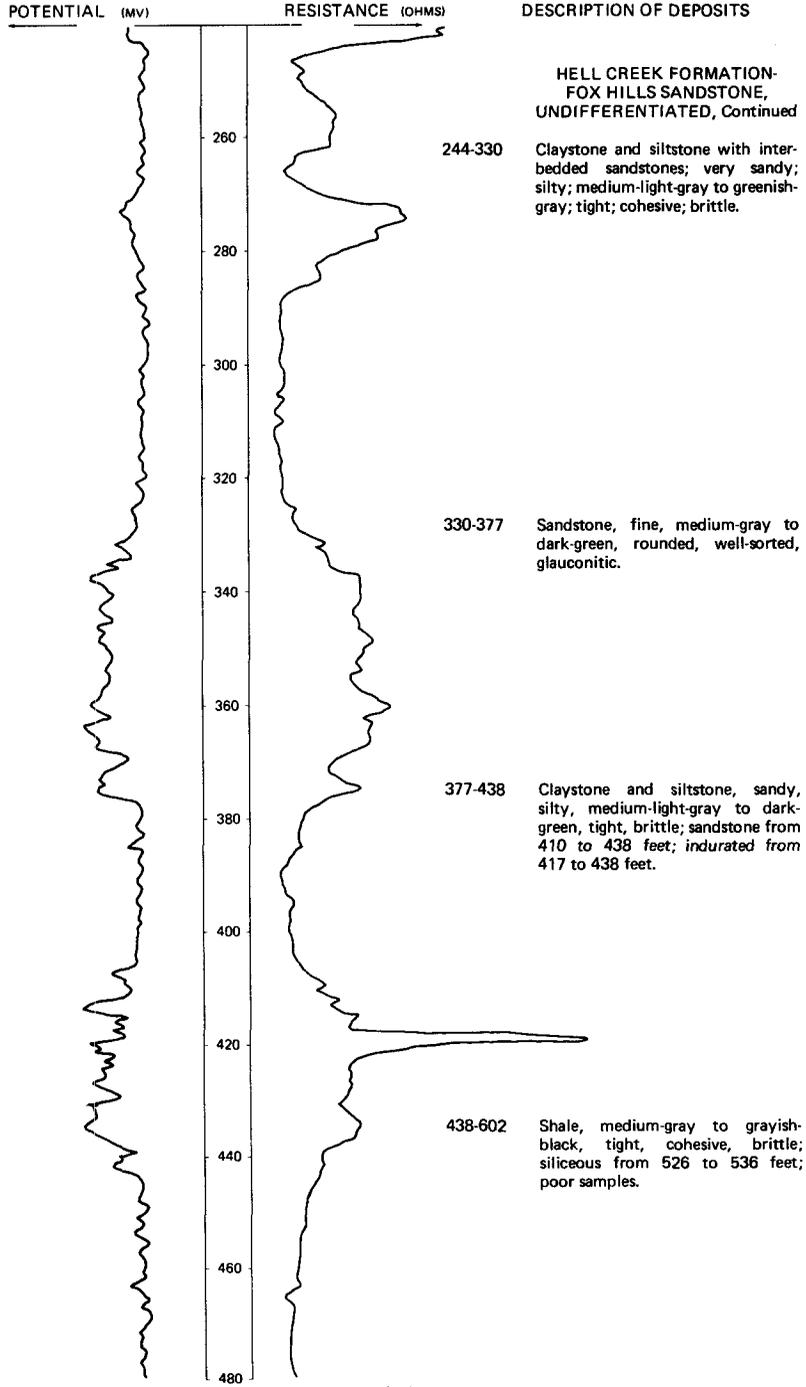


LOCATION: 150-076-21BBB

DATE DRILLED: 11/15/77

ALTITUDE: 1676
(FT, NGVD)

DEPTH: 802
(FT)



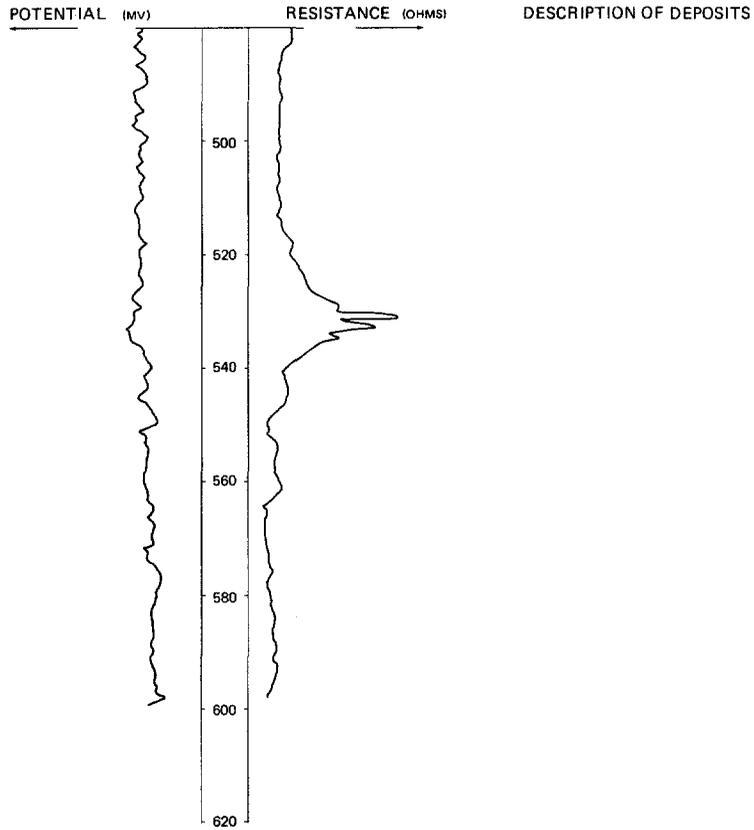
NDSWC 5273, Continued

LOCATION: 150-076-21BBB

DATE DRILLED: 11/15/77

ALTITUDE: 1676
(FT, NGVD)

DEPTH: 602
(FT)



150-076-24BCC

(Log modified from U.S. Bureau of Reclamation)

Altitude: 1608 feet

Date drilled: 6/27/55

GEOLOGIC SOURCE MATERIAL

THICKNESS (FEET) DEPTH (FEET)

Topsoil	1	1
Sand, fine; with 10 percent fine to coarse gravel; silty; tan	9	10
Clay (glacial till), silty; sandy clay; gray	30	40

150-076-24CAB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1621 feet	Date drilled:	9/10/69
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
	Topsoil, sandy, dark-brown-----	1	1
	Silty sand; 70 percent fine sand; 5 percent gravel; calcareous; glaciofluvial; brown-----	13.5	14.5
	Clay (glacial till), sandy, silty; scattered gravel and lignite; brown-----	35.5	50

150-076-24DCA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1616 feet	Date drilled:	9/09/69
	Topsoil, sandy-----	1	1
	Sandy clay; 20 percent very fine sand; calcareous; glaciofluvial; brown-----	4	5
	Silty sand; 70 percent coarse to fine poorly graded sand; 10 percent fine gravel; calcareous; glaciofluvial; brown-----	7.5	12.5
	Clay (glacial till), sandy, silty; scattered gravel and lignite; spotty HCL reaction; brown to gray-----	23.5	36
	Silty sand; 80 to 90 percent fine sand; trace of clay; calcareous; glaciofluvial; gray-----	14	50

150-076-25AAB
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1618 feet	Date drilled:	6/24/55
	Topsoil-----	0.2	0.2
	Sand; 25 percent fine gravel; trace of clay and silt; buff-----	27.2	27.4
	Clay (glacial till), silty, sandy, gravelly, buff to gray-----	11.6	39

150-076-25DDA
(Log modified from U.S. Bureau of Reclamation)

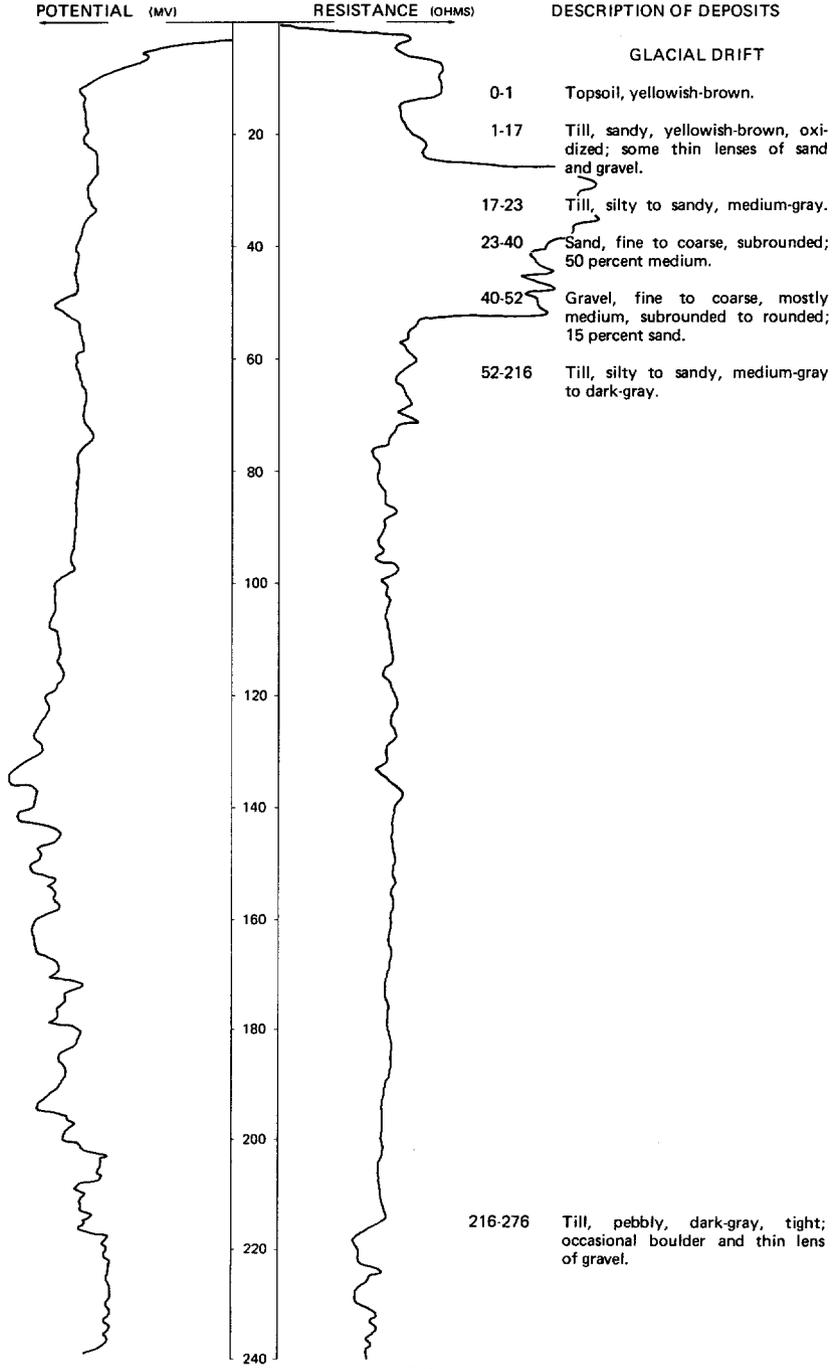
Altitude:	1620 feet	Date drilled:	8/05/69
	Topsoil, dark, organic-----	1.5	1.5
	Silty sand; 65 percent fine sand; glaciofluvial; dark brown-----	3.5	5
	Clayey sand; 75 percent fine to medium sand; calcareous; glaciofluvial; brown-----	4	9
	Silty sand; 70 percent fine to coarse sand; 5 percent fine gravel; slight HCL reaction; glaciofluvial; brown-----	9	18
	Clay (glacial till), sandy, silty; scattered fine gravel and lignite fragments; slight HCL reaction; gray-----	32	50

LOCATION: 150-076-34ADD

DATE DRILLED: 8/18/78

ALTITUDE: 1650
(FT. NGVD)

DEPTH: 300
(FT)



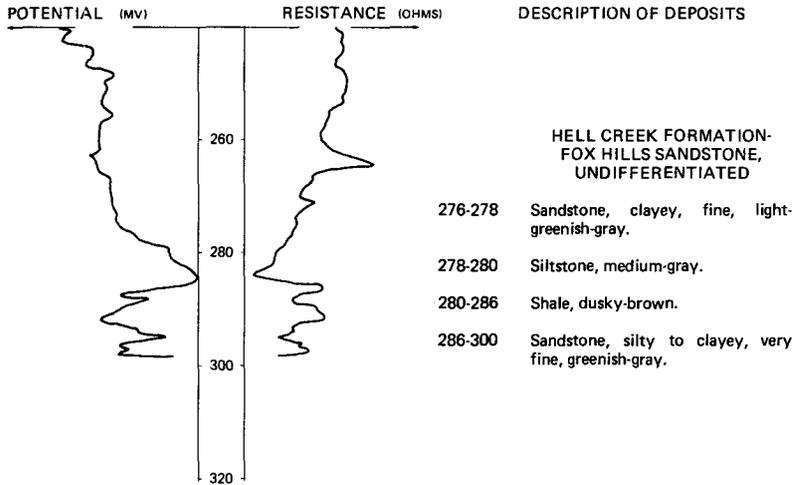
NDSWC 10222, Continued

LOCATION: 150-076-34ADD

DATE DRILLED: 8/18/78

ALTITUDE: 1650
(FT, NGVD)

DEPTH: 300
(FT)



150-076-36ABB
(Log modified from U.S. Bureau of Reclamation)

GEOLOGIC SOURCE MATERIAL		THICKNESS (FEET)	DEPTH (FEET)
Topsoil, black		3	3
Sandy clay; 40 percent mostly fine sand; subsoil; grayish yellowish brown		3	6
Silty sand; 75 percent medium to fine sand; some coarse sand; slight HCL reaction; alluvial; yellowish brown		7	13
Sandy clay (glacial till); 40 percent fine sand; trace of gravel; very slight HCL reaction; yellowish brown		5.5	18.5
Silty sand; 80 percent fine sand with some medium; glaciofluvial; yellowish brown		5.5	24
Sandy clay (till); 35 percent poorly graded sand; calcareous; some gravel; bluish gray		26	50

150-076-36BDD
(Log modified from U.S. Bureau of Reclamation)

GEOLOGIC SOURCE MATERIAL		THICKNESS (FEET)	DEPTH (FEET)
Topsoil (glacial till), black to dark gray		1	1
Clay (glacial till), sandy, silty; scattered lignite with some fine gravel; slight HCL reaction; dark gray		4.4	5.4
Silty sand; 75 percent mostly fine sand; glaciofluvial; tannish brown		10.6	16
Inorganic silt; till fingers; trace of clay; calcareous; glaciofluvial; gray		14	30
Intermixed fine sand, silt, and clay; laminations in silt; calcareous; glaciofluvial; gray		17.5	47.5
Clay (glacial till), sandy, silty; gravel and lignite scattered throughout; calcareous; gray		2.5	50

150-076-36CCA
(Log modified from U.S. Bureau of Reclamation)

Altitude:	1650 feet	Date drilled:	10/22/52
GEOLOGIC SOURCE	MATERIAL	THICKNESS (FEET)	DEPTH (FEET)
Glacial drift:			
	Topsoil-----	2	2
	Clay (glacial till), sandy; pebbles; buff-----	13.7	15.7
	Sand, fine, silty, brown-----	6.5	22.2
	Clay (glacial till), fine, silty, brown-----	7.8	30
	Sand, fine, silty, buff-----	4.7	34.7
	Clay (till); silt; sand; gravel; silt and sand zones; gray lignite slack with more gravel below 200 feet-----	224.3	252
Hell Creek Formation-Fox Hills Sandstone, undifferentiated:			
	Sandstone, fine; shaly inclusions; biotite; loose from 252 to 259 feet; bluish gray-----	33	285

150-077-03CDC
(Log from J. N. Pitcher Company)

Altitude:	1680 feet	Date drilled:	7/27/61
Glacial drift:			
	Clay, silty; sandy to trace of sand; trace of gravel and lignite-----	39	39
	Silt and fine sand; trace of gravel-----	15	54
Fort Union Formation:			
	Shale, fine sand, and silt-----	46	100

150-077-05DDD
(Log from Russell Drilling Co.)

Altitude:	1673 feet	Date drilled:	11/06/74
	Topsoil-----	1	1
	Clay, yellow-----	24	25
	Till-----	4	29
	Gravel-----	1	30
	Till-----	5	35
	Sand-----	5	40
	Shale-----	200	240
	Sand, fine, gray-----	20	260
	Shale-----	40	300

150-077-20BAB
NDSWC 10258

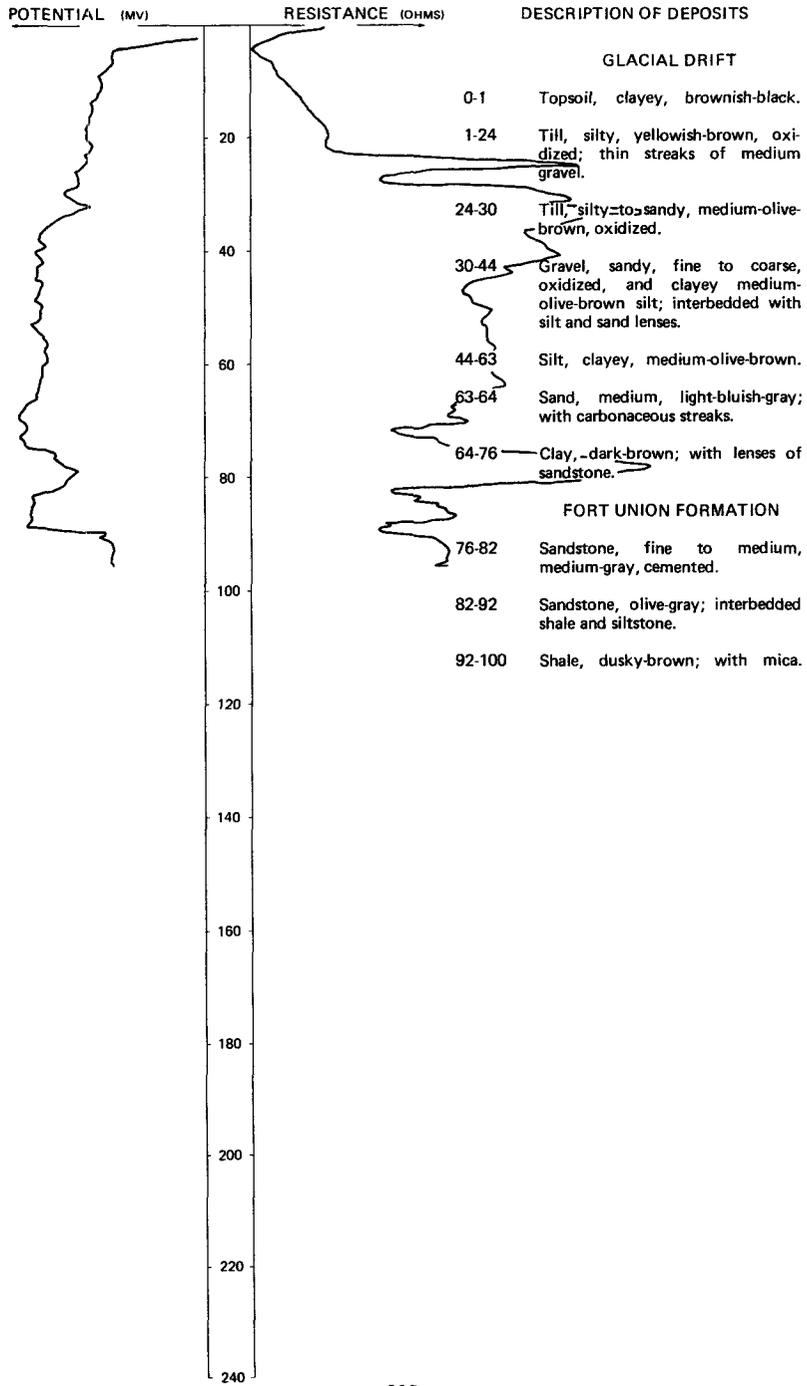
Altitude:	1700 feet	Date drilled:	9/07/78
Glacial drift:			
	Topsoil, sandy, brownish-black-----	1	1
	Sand, gravelly, fine to coarse, rounded, oxidized-----	5	6
	Clay, light-yellowish-brown, cohesive, oxidized-----	5	11
	Clay, medium-dark-gray, cohesive, pliable-----	11	22
	Till, sandy, medium-dark-gray-----	26	48
	Gravel, very fine to medium; 40 percent medium to coarse sand; mostly granitics-----	14	62
	Sand, fine to coarse, subrounded to rounded, lignitic; mostly quartz and shale; silty intervals-----	59	121
	Sand, fine to medium, cemented; medium dark green with limestone, granite, and white clay in cuttings; abandoned hole in this boulder section due to caving (135-140)-----	19	140

LOCATION: 150-077-25BBB

DATE DRILLED: 8/18/78

ALTITUDE: 1700
(FT. NGVD)

DEPTH: 100
(FT)

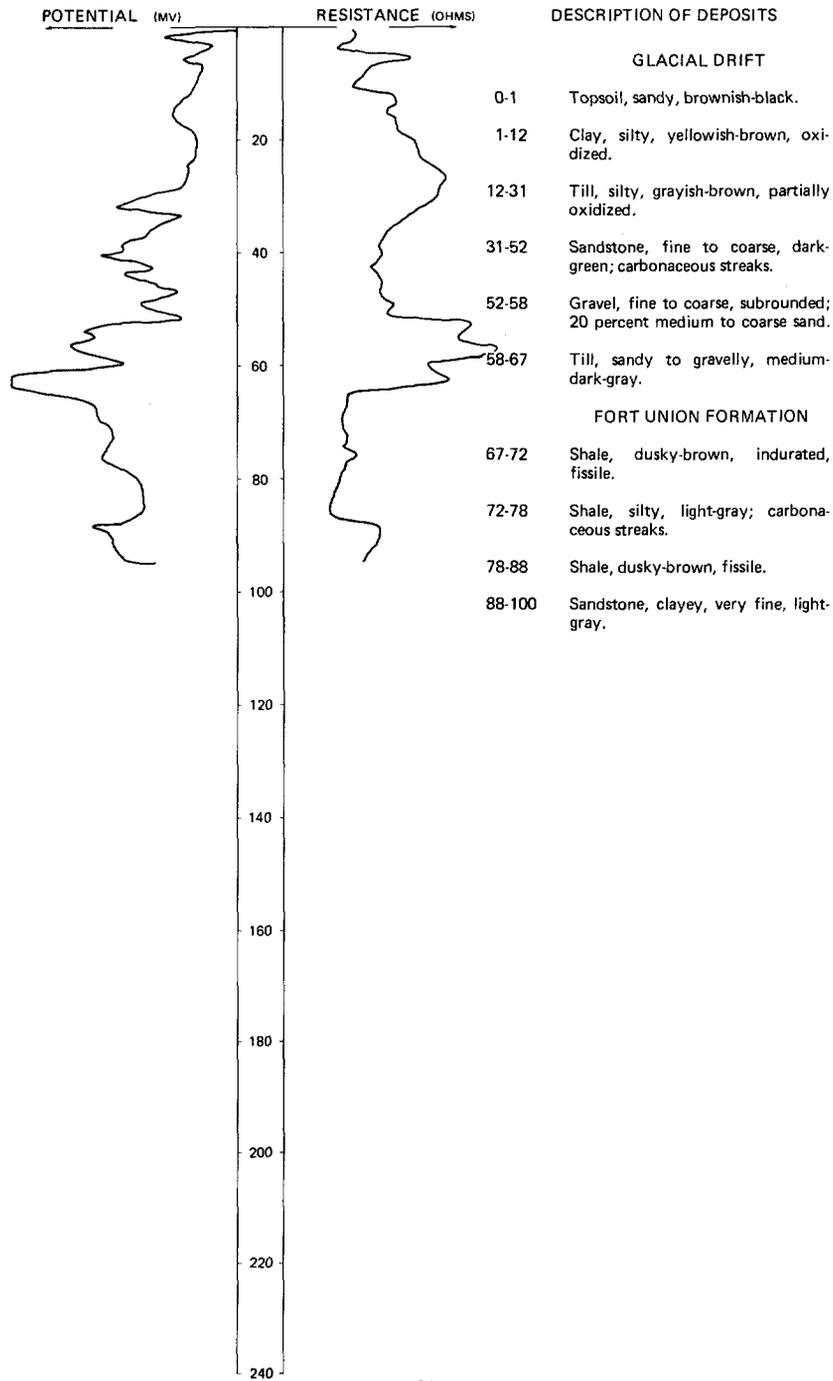


LOCATION: 150-077-26BCC

DATE DRILLED: 9/07/78

ALTITUDE: 1695
(FT, NGVD)

DEPTH: 100
(FT)

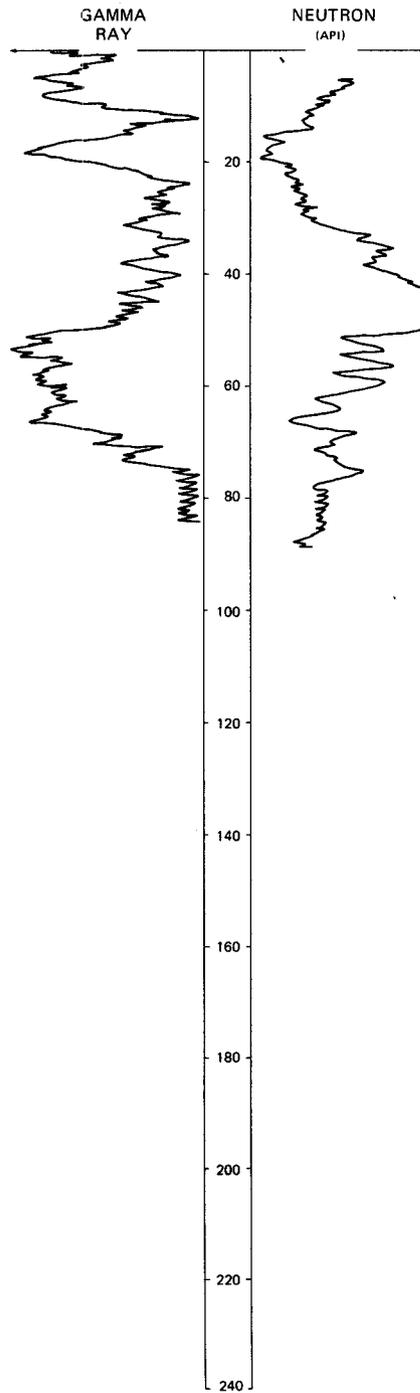


LOCATION: 150-077-26DDD

DATE DRILLED: 6/09/78

ALTITUDE: 1680
(FT, NGVD)

DEPTH: 95
(FT)



DESCRIPTION OF DEPOSITS

GLACIAL DRIFT

- 0-17 Clay, very silty, and silty sand; yellowish-brown to moderate-brown; smooth; soft; sticky; oxidized; a little coarse sand at 20 feet (lacustrine).
- 17-32 Clay, very silty, medium-gray to medium-dark-gray, sticky, moderately tight, cohesive, plastic (lacustrine).
- 32-50 Clay, sandy, silty, pebbly, olive-gray, tight, cohesive, plastic (till).
- 50-68 Sand (60 percent) and gravel (40 percent); sand is fine to very coarse, mostly coarse to very coarse, subangular to rounded, and mostly quartz and carbonates; gravel is fine to coarse, angular to subrounded, and mostly carbonates and shale with quartz; moderately well to poorly sorted; taking water.

FORT UNION FORMATION

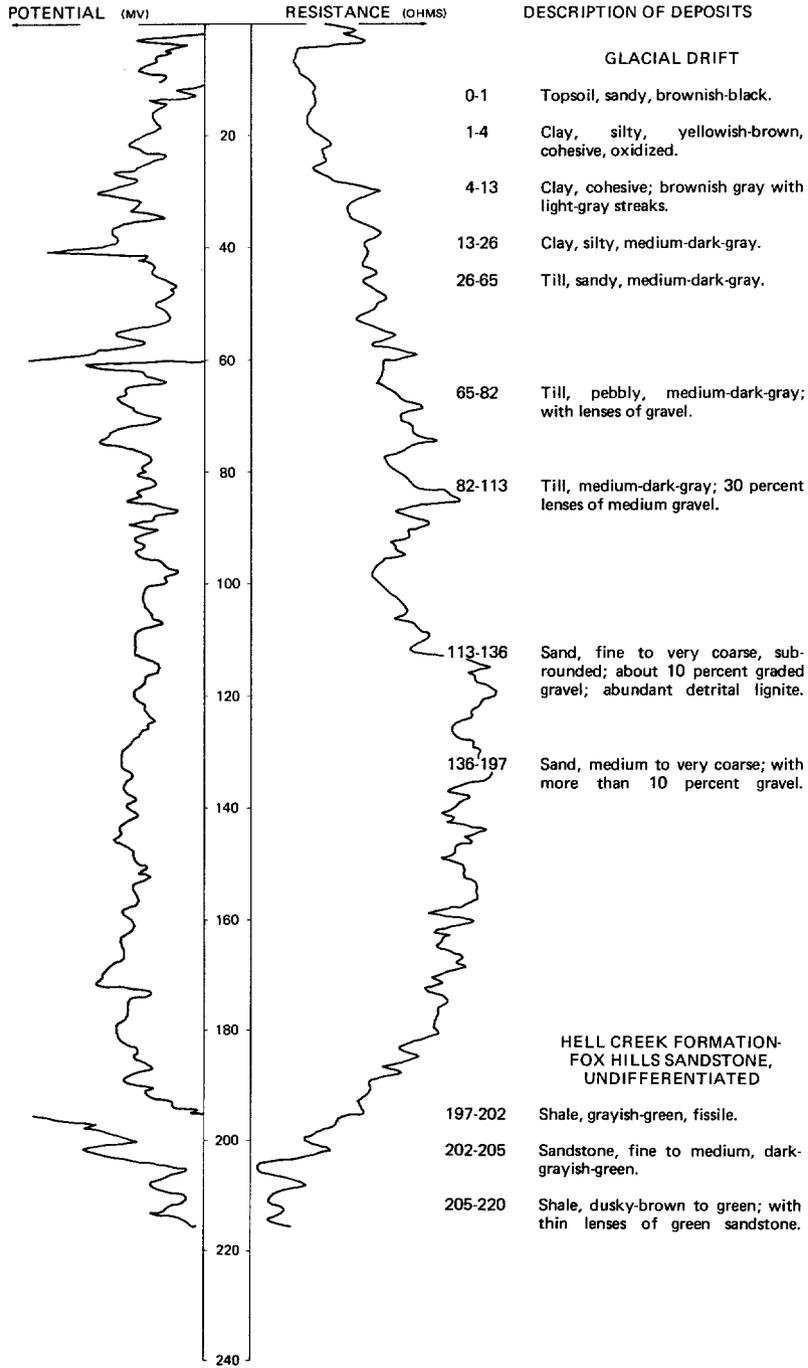
- 68-95 Claystone, very silty, brownish-gray to greenish-gray, tight, cohesive, brittle, slightly carbonaceous.

LOCATION: 150-077-27BCB

DATE DRILLED: 9/07/78

ALTITUDE: 1670
(FT, NGVD)

DEPTH: 220
(FT)

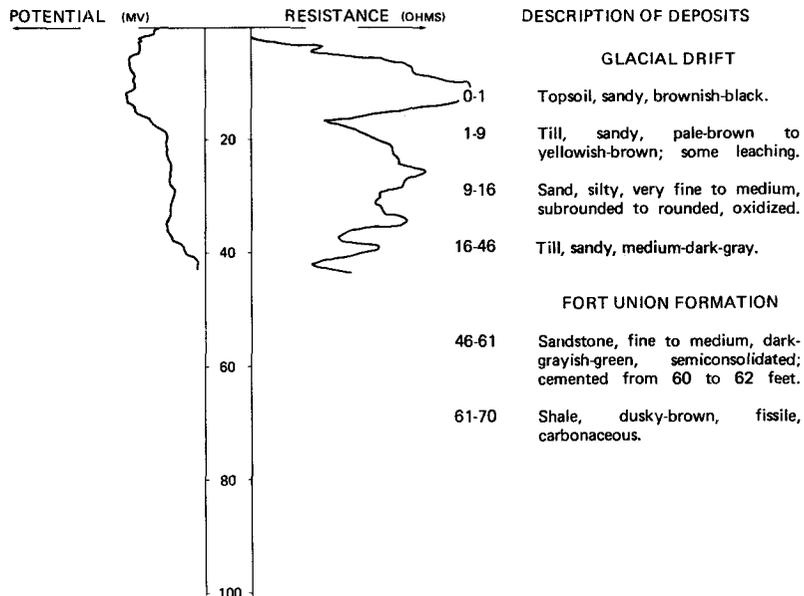


LOCATION: 150-077-27CCC

DATE DRILLED: 9/07/78

ALTITUDE: 1697
(FT. NGVD)

DEPTH: 70
(FT)



150-077-36BCC
NDSWC 10257

Altitude: 1690 feet

Date drilled: 9/07/78

GEOLOGIC SOURCE MATERIAL

THICKNESS (FEET) DEPTH (FEET)

Glacial drift:

Topsoil, sandy, brownish-black	1	1
Till, silty, yellowish-brown, oxidized	12	13
Till, sandy, grayish-brown	10	23
Till, sandy, medium-dark-gray	11	34

Fort Union Formation:

Sandstone, fine to medium, dark-green, semiconsolidated	6	40
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TABLE 4.--Chemical analyses of ground water

[Chemical analyses of ground water for major aquifers are grouped according to aquifer.]

<u>Principal aquifer</u>	<u>Specific conductance</u>
112, Pleistocene	Value shown is the field specific conductance measured at the well at the time of inventory.
211, Upper Cretaceous	
BGFV, buried glaciofluvial deposits	
BUTT, Butte aquifer	
FXHL, Fox Hills aquifer system	
HCFH, Hell Creek-Fox Hills aquifer system	
LKNTL, Lower Lake Nettie aquifer system	
LKNTU, Upper Lake Nettie aquifer system	
MRTN, Martin aquifer system	
NBLG, North Burleigh aquifer	
PWCK, Painted Woods Creek aquifer	

