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Information Pamphlet No. 38

SAND AND GRAVEL RESOURCES IN  
BROOKINGS COUNTY, SOUTH DAKOTA

by

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## CONTENTS

	Page
<b>INTRODUCTION</b> .....	1
<b>GEOLOGIC OVERVIEW</b> .....	1
Glacial till .....	1
Glacial outwash .....	2
Alluvium .....	2
Terrace deposits .....	2
<b>EXPLANATION OF TABLES</b> .....	2
<b>EXPLANATION OF MAP</b> .....	3
Sand and gravel .....	3
<b>ECONOMIC CONSIDERATIONS</b> .....	5

## TABLES

1. List of test holes in Brookings County, South Dakota, which contain sand or gravel within 25 feet of the land surface ..... 6
2. List of sand and gravel pits in Brookings County, South Dakota, which are on file at the Department of Transportation, Division of Highways, Pierre, South Dakota ..... 133

## ILLUSTRATION

- Map showing test holes, sand and gravel pits, and sand and gravel deposits in Brookings County ..... Following 140

## INTRODUCTION

This pamphlet is one of a series of reports describing the geology and water resources of Brookings County. It is designed to be an uncomplicated, nontechnical aid in the search for sand and gravel deposits.

Other reports in the series include:

- a. *Major aquifers in Brookings County, South Dakota*: South Dakota Geological Survey Information Pamphlet 40, Hamilton, Louis, U.S. Geological Survey, (in preparation).
- b. *Water resources of Kingsbury and Brookings Counties, South Dakota*: U.S. Geological Survey Water Resources Investigations Report, Hamilton, Louis, (in preparation).
- c. *Geology of Kingsbury and Brookings Counties, South Dakota*: South Dakota Geological Survey Bulletin, Jarrett, Martin J., Johnson, Gary D., and Lehr, J. D. (in preparation).

Report (a.) describes the availability, quality, and location of major aquifers (water-bearing deposits) in a short, easy to read, pamphlet. Report (b.) is a more technical and somewhat more exhaustive investigation of the water resources of the Counties. Report (c.) is a scientific investigation of the geology of Kingsbury and Brookings Counties.

## GEOLOGIC OVERVIEW

Most of the sand and gravel deposits found in Brookings County were deposited by glacial ice or meltwater that covered the region thousands of years ago. Some sand and gravel has been deposited by streams since the retreat of the glaciers. A short description of geologic terms used in this text follows.

### Glacial Till

The glaciers were large masses of ice that thousands of years ago, originated from snow accumulations to the north. These glaciers flowed southward to the area that is now Brookings County, picking up earth debris as they went. Some of this debris, a mixture of clay, silt, sand, gravel, and boulders was deposited directly from the ice. Till, the term used to describe this mixture, is also often called "blue clay" or "boulder clay." In the Brookings County area, the till is made up primarily of clay and is not considered a source of sand and gravel. However, small isolated sand and gravel hills or lenses may occur.

### Glacial Outwash

Glacial outwash is the term used to describe any deposit of glacial debris which has been washed and sorted by water flowing from melting glacier ice. The grain size of these deposits depends upon the velocity of the water which deposited them and upon the type of material. Deposits left by slow flowing streams are made up primarily of silts and clays. Very fast flowing streams may have left streambeds composed entirely of boulders. Most glacial outwash, however, is made up of an assortment of sand and gravel, with minor amounts of finer and coarser materials. Deposits of glacial outwash are a major source of sand and gravel in Brookings County.

### Alluvium

Alluvium is the term used to describe the material deposited by streams since the retreat of the glaciers. Grain size of the alluvial deposits is determined by the same factors as glacial outwash. Alluvium is found in the valleys of present-day streams and can often be a good source of sand and gravel.

### Terrace Deposits

Terrace deposits are flat-topped alluvial or outwash deposits that are remnants of former flood plains. The streams which made them have since cut their channels deeper and developed new flood plains at lower levels. Some of the sand and gravel found in Brookings County occurs in this type of deposit.

### **EXPLANATION OF TABLES**

Table 1 is a list of only those test holes in which sand or gravel was encountered within 25 feet of the land surface. This table gives the location of the test hole, and the depth and description of the sand and gravel deposits. The complete logs of all the test holes drilled in Brookings County are on file at the South Dakota Geological Survey in Vermillion, South Dakota.

Table 2 is a list of sand and gravel pits on file with the South Dakota Department of Transportation, Division of Highways in Pierre, South Dakota. Where possible, this table gives the landowner and location of the pit, the thickness of overburden, the thickness of sand and gravel being mined, and the type of aggregate deposit. The actual thickness of a deposit may be greater than that which is listed in the table as being mined.

## EXPLANATION OF MAP

The map shows the location of the test holes and sand and gravel pits. It also shows the towns, major highways, and major lakes, rivers, and creeks.

Test-hole data are shown on the map using four types of map symbols. A dot (●) represents a test hole in which sand or gravel was found within 25 feet of the land surface, with 0 to 5 feet of overburden. A square (■) indicates that sand or gravel was found within 25 feet of the land surface but greater than 5 feet of overburden was encountered. A large dot (●) represents an area where there are multiple test holes in which sand or gravel was encountered within 25 feet of the land surface. These three types of symbols are numbered and the pertinent test-hole information is listed in table 1. The fourth symbol is an open circle (o), which indicates that no sand or gravel was found within 25 feet of the land surface. Logs of these test holes are available at the South Dakota Geological Survey in Vermillion, South Dakota. Locations of the sand and gravel pits are indicated by a crossed pick and shovel (⌘). The pits which are numbered are listed in table 2, and additional information is on file at the Department of Transportation, Division of Highways, in Pierre, South Dakota. No attempt was made to distinguish the inactive pits from the actively mined pits.

To aid in the delineation of the most promising areas of finding sand and gravel, the map has been divided into three area types, "good," "fair," and "poor." These three types of areas were differentiated using test-hole data, sand and gravel pit locations, soil-survey information, topographic map and aerial photo interpretation, and field observations. Areas with a "good" or "fair" probability of finding sand and gravel have been assigned a letter on the map and are discussed further in the following section.

Sand and gravel deposits found in the "good" areas are generally thick, have very little overburden, and cover a broad area. In these areas, much mining for sand and gravel has already occurred and is occurring at the present time. Sand and gravel deposits found in the "fair" areas are generally thinner, have more overburden, or are laterally discontinuous. There are sand and gravel deposits in the "poor" areas, but a very expensive and exhaustive exploration program would be needed to locate all of these deposits.

### Sand and Gravel

Area "A," designated as "good," is a deposit of sands and gravels occupying a topographic low, associated with a small unnamed creek. The deposit thickens from south to north, attaining a thickness in excess of 30 feet along the County line.

Overburden thickness is predominantly 5 feet or less over the entire area.

Area "B," designated as "good," is a large body of outwash encompassing about 100 square miles within the Big Sioux River valley and three small valleys which extend west of the Big Sioux valley. Sand and gravel thicknesses in excess of 30 feet are very common over the entire area. The thickness of overburden is quite variable over the area, but seldom exceeds 5 feet.

Area "C," contains outwash deposits of sand and gravel within the Oakwood Lakes drainage area. The portion of Area "C" that has been designated as "good" has sand and gravel thicknesses of up to 79 feet, with very little overburden. The portions that are designated as "fair" have deposits which are thin and discontinuous.

Area "D," designated as "good," contains outwash deposits within the North Deer Creek valley. The deposit has an average thickness of about 12 feet for all the test holes drilled. The thickness of overburden seldom exceeded 5 feet, averaging just over 3 feet for all test holes drilled.

Area "E," designated as "good," contains about 35 square miles of outwash sand and gravel, within the valleys of two creeks, an unnamed creek to the north and Six Mile Creek to the south. A large terrace deposit connects the two valley deposits. The thickness of sand and gravel over the area is quite variable. Several test holes drilled in the downstream portions of the valley deposits, encountered in excess of 50 feet of sand and gravel. Overburden thickness averages just under 5 feet for all test holes drilled.

Area "F," designated as "fair," contains thin and discontinuous terrace remnants along the walls of the Six Mile Creek valley.

Area "G," designated as "fair," consists of several narrow melt water channels. Sand and gravel deposits are found in isolated patches along the channel floors.

Area "H," designated as "fair," contains thin and discontinuous outwash deposits within a small valley just north of Brookings.

Area "I," designated as "good," consists of outwash deposits encompassing about 85 square miles within the Deer Creek and Medary Creek valleys. The two valley deposits merge downstream to form a large outwash plain. The sand and gravel deposits found in Area "I" are very thick, and continuous over the entire area. Very coarse gravels were encountered in the upstream portion of the Deer Creek valley.

Area "J," designated as "good," is a large terrace deposit. The deposit thickens from north to south, attaining a maximum thickness of 55 feet in test hole 305.

Area "K," designated as "fair," contains thin and discontinuous deposits of sand and gravel within the valley of an unnamed creek, tributary to Medary Creek.

Area "L," designated as "fair," contains thin and discontinuous terrace remnants along the valley walls of an unnamed creek. Test hole 105 however, encountered 20 feet of sand and gravel.

Area "M," designated as "good," is a segment of a much larger outwash deposit extending into Lake and Moody Counties. Sand and gravel deposits are found in the low areas around the perimeter of Lake Campbell.

#### **ECONOMIC CONSIDERATIONS**

It should be emphasized that this study is quite general and should be used only as a guide to further exploration and development of the sand and gravel resources. The development of a specific site will depend upon material specifications for the desired use, development costs, transportation costs, and future markets.

TABLE 1. LIST OF TEST HOLES IN BROOKINGS COUNTY, SOUTH DAKOTA, WHICH CONTAIN SAND OR GRAVEL WITHIN 25 FEET OF THE LAND SURFACE.

LITHOLOGIC DESCRIPTIONS, AS LISTED, HAVE BEEN CONDENSED FROM DATA CONTAINED IN LOGS ON FILE AT THE SOUTH DAKOTA GEOLOGICAL SURVEY OFFICE, VERMILLION, SOUTH DAKOTA, AND CONTAIN ONLY INFORMATION WHICH HAS BEEN DEEMED MOST USEFUL FOR THIS STUDY. NUMERICAL VALUES INDICATE DEPTH IN FEET BELOW LAND SURFACE.

TEST HOLE NUMBER: 1  
LOCATION: 109N-47W-04AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 04, T. 109 N., R. 47 W.

1.0 - 5.0 GRAVEL, BROWN, MEDIUM, SANDY; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 2  
LOCATION: 109N-47W-04BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 04, T. 109 N., R. 47 W.

4.0 - 37.0 SAND, BROWN, MEDIUM TO COARSE; DRY,  
OXIDIZED, SOME GRAVEL, SATURATED AT 10  
FEET

\* \* \* \*

TEST HOLE NUMBER: 3  
LOCATION: 109N-47W-05AAAB  
LEGAL LOCATION: NW NE NE NE SEC. 05, T. 109 N., R. 47 W.

1.0 - 6.0 SAND, BROWN, MEDIUM, GRAVELLY, POORLY  
SORTED; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 4  
LOCATION: 109N-47W-05CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 05, T. 109 N., R. 47 W.

1.0 - 21.0 SAND, BROWN, MEDIUM, SILTY; MOIST,  
OXIDIZED, SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 5  
LOCATION: 109N-47W-07DDDA  
LEGAL LOCATION: NE SE SE SE SEC. 07, T. 109 N., R. 47 W.

5.0 - 16.0 GRAVEL, LIGHT-BROWN, COARSE, POORLY  
SORTED; DRY, OXIDIZED



\* \* \* \*

TEST HOLE NUMBER: 6  
LOCATION: 109N-47W-08DCDD  
LEGAL LOCATION: SE SE SW SE SEC. 08, T. 109 N., R. 47 W.

5.0 - 14.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 7  
LOCATION: 109N-47W-08DDAD  
LEGAL LOCATION: SE NE SE SE SEC. 08, T. 109 N., R. 47 W.

6.0 - 15.0 GRAVEL, BROWN, FINE TO MEDIUM; SOME  
COARSE SAND

\* \* \* \*

TEST HOLE NUMBER: 8  
LOCATION: 109N-47W-08DDBD  
LEGAL LOCATION: SE NW SE SE SEC. 08, T. 109 N., R. 47 W.

4.0 - 7.0 SAND, BROWN, MEDIUM, GRAVELLY  
7.0 - 14.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY

\* \* \* \*

TEST HOLE NUMBER: 9  
LOCATION: 109N-47W-08DDDB  
LEGAL LOCATION: NW SE SE SE SEC. 08, T. 109 N., R. 47 W.

3.0 - 7.0 SAND, BROWN, FINE, SILTY  
7.0 - 15.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;  
SOME COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 10  
LOCATION: 109N-47W-08DDDC  
LEGAL LOCATION: SW SE SE SE SEC. 08, T. 109 N., R. 47 W.

5.0 - 21.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 11  
LOCATION: 109N-47W-08DDDD 1  
LEGAL LOCATION: SE SE SE SE SEC. 08, T. 109 N., R. 47 W.

3.0 - 5.0 SAND, BROWN, MEDIUM; SATURATED, OXIDIZED,  
SOME GRAVEL

8.0 - 23.0 GRAVEL, GRAY, MEDIUM; SATURATED, CLEAN,  
UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 12  
LOCATION: 109N-47W-09AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 09, T. 109 N., R. 47 W.

1.0 - 10.0 GRAVEL, MEDIUM  
10.0 - 14.0 GRAVEL; WITH CLAY  
14.0 - 29.0 GRAVEL, MEDIUM TO COARSE; SOME CLAY

\* \* \* \*

TEST HOLE NUMBER: 13  
LOCATION: 109N-47W-09BAA  
LEGAL LOCATION: NE NE NW SEC. 09, T. 109 N., R. 47 W.

4.0 - 17.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 14  
LOCATION: 109N-47W-10ABAB  
LEGAL LOCATION: NW NE NW NE SEC. 10, T. 109 N., R. 47 W.

1.0 - 17.0 GRAVEL, BROWN, COARSE, VERY SANDY; DRY,  
OXIDIZED, SATURATED AT 8 FEET

\* \* \* \*

TEST HOLE NUMBER: 15  
LOCATION: 109N-47W-10CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 10, T. 109 N., R. 47 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

1.0 - 25.0 SAND AND GRAVEL, MEDIUM SAND TO COARSE  
PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 16  
LOCATION: 109N-47W-16BBAB  
LEGAL LOCATION: NW NE NW NW SEC. 16, T. 109 N., R. 47 W.

5.0 - 14.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 17  
LOCATION: 109N-47W-16BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 16, T. 109 N., R. 47 W.

1.0 - 19.0 SAND AND GRAVEL, BROWN; GRADES FROM A  
FINE SAND TO A MEDIUM GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 18  
LOCATION: 109N-47W-16BBBB 2  
LEGAL LOCATION: NW NW NW NW SEC. 16, T. 109 N., R. 47 W.

4.0 - 9.0 SAND, BLACKISH-BROWN, FINE TO MEDIUM,  
SILTY  
9.0 - 16.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 19  
LOCATION: 109N-47W-16BBCB  
LEGAL LOCATION: NW SW NW NW SEC. 16, T. 109 N., R. 47 W.

1.0 - 14.0 SAND AND GRAVEL, BROWN; GRADES FROM A  
MEDIUM SAND TO A COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 20  
LOCATION: 109N-47W-16BBCC  
LEGAL LOCATION: SW SW NW NW SEC. 16, T. 109 N., R. 47 W.

2.0 - 9.0 GRAVEL, BROWN, MEDIUM TO COARSE; OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 21  
LOCATION: 109N-47W-16BBDB  
LEGAL LOCATION: NW SE NW NW SEC. 16, T. 109 N., R. 47 W.

4.0 - 10.0 GRAVEL, BROWN, MEDIUM TO COARSE; OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 22  
LOCATION: 109N-47W-16CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 16, T. 109 N., R. 47 W.

6.0 - 20.0 GRAVEL, RED-BROWN, COARSE, SANDY;  
OXIDIZED, MOIST  
20.0 - 30.0 GRAVEL, RED-BROWN, COARSE, SANDY;  
OXIDIZED, SATURATED

\* \* \* \*

TEST HOLE NUMBER: 23  
LOCATION: 109N-47W-17AAAC

LEGAL LOCATION: SW NE NE NE SEC. 17, T. 109 N., R. 47 W.

4.0 - 9.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;  
SOME COARSE GRAVEL, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 24

LOCATION: 109N-47W-17AAAD

LEGAL LOCATION: SE NE NE NE SEC. 17, T. 109 N., R. 47 W.

4.0 - 12.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 25

LOCATION: 109N-47W-17AAAD 1

LEGAL LOCATION: SE NE NE NE SEC. 17, T. 109 N., R. 47 W.

6.0 - 14.0 GRAVEL, DARK-BROWN, MEDIUM TO COARSE,  
SANDY; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 26

LOCATION: 109N-47W-17AAAD 2

LEGAL LOCATION: SE NE NE NE SEC. 17, T. 109 N., R. 47 W.

5.0 - 16.0 GRAVEL, BLACKISH-GRAY, SILTY, SANDY;  
SATURATED

\* \* \* \*

TEST HOLE NUMBER: 27

LOCATION: 109N-47W-17AADC

LEGAL LOCATION: SW SE NE NE SEC. 17, T. 109 N., R. 47 W.

3.0 - 11.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;  
SOME COARSE GRAVEL, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 28

LOCATION: 109N-47W-17DDB

LEGAL LOCATION: NW SE SE SEC. 17, T. 109 N., R. 47 W.

1.0 - 6.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 29

LOCATION: 109N-47W-20AADC

LEGAL LOCATION: SW SE NE NE SEC. 20, T. 109 N., R. 47 W.

4.0 - 7.0 SAND, LIGHT-BROWN, COARSE, SILTY;  
OXIDIZED, SATURATED

\* \* \* \*

TEST HOLE NUMBER: 30  
LOCATION: 109N-47W-20ADA  
LEGAL LOCATION: NE SE NE SEC. 20, T. 109 N., R. 47 W.

4.0 - 9.0 SAND, MEDIUM  
9.0 - 14.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 31  
LOCATION: 109N-47W-20DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 20, T. 109 N., R. 47 W.

2.0 - 11.0 SAND, LIGHT-BROWN; OXIDIZED, MOIST  
11.0 - 12.0 SAND, LIGHT-BROWN, GRAVELLY; OXIDIZED,  
SATURATED, POORLY SORTED  
12.0 - 36.0 GRAVEL, RED-BROWN, MEDIUM; OXIDIZED,  
SATURATED, WITH COARSE SAND

\* \* \* \*

TEST HOLE NUMBER: 32  
LOCATION: 109N-47W-21ACCC  
LEGAL LOCATION: SW SW SW NE SEC. 21, T. 109 N., R. 47 W.

5.0 - 19.0 SAND, BROWN, COARSE, SILTY, OXIDIZED,  
MOIST  
19.0 - 30.0 GRAVEL, BROWN, COARSE; OXIDIZED,  
SATURATED

\* \* \* \*

TEST HOLE NUMBER: 33  
LOCATION: 109N-47W-21BADB  
LEGAL LOCATION: NW SE NE NW SEC. 21, T. 109 N., R. 47 W.

6.0 - 20.0 GRAVEL, BROWN, MEDIUM, CLAYEY, SANDY,  
PEBBLY; OXIDIZED, MOIST, POORLY SORTED  
20.0 - 31.0 GRAVEL, BROWN, MEDIUM, CLAYEY, SANDY,  
PEBBLY; OXIDIZED, SATURATED

\* \* \* \*

TEST HOLE NUMBER: 34  
LOCATION: 109N-47W-21BBAB  
LEGAL LOCATION: NW NE NW NW SEC. 21, T. 109 N., R. 47 W.

3.0 - 10.0 GRAVEL, RED-BROWN, SANDY, CLAYEY;  
OXIDIZED, MOIST

10.0 - 11.0 SAND, GRAY-WHITE, MEDIUM; OXIDIZED,  
MOIST, VERY CLEAN, WELL SORTED  
11.0 - 26.0 SAND, GRAY-WHITE, MEDIUM; OXIDIZED,  
SATURATED, VERY CLEAN, WELL SORTED

\* \* \* \*

TEST HOLE NUMBER: 35  
LOCATION: 109N-47W-21BBAC  
LEGAL LOCATION: SW NE NW NW SEC. 21, T. 109 N., R. 47 W.

10.0 - 12.0 SAND, BROWN, VERY COARSE, SILTY, CLAYEY;  
OXIDIZED, MOIST  
12.0 - 24.0 SAND, BROWN, VERY COARSE, SILTY, CLAYEY;  
OXIDIZED, SATURATED

\* \* \* \*

TEST HOLE NUMBER: 36  
LOCATION: 109N-47W-21CBCA  
LEGAL LOCATION: NE SW NW SW SEC. 21, T. 109 N., R. 47 W.

5.0 - 15.0 GRAVEL, LIGHT-BROWN, SANDY, CLAYEY;  
OXIDIZED, DRY  
15.0 - 30.0 GRAVEL, LIGHT-BROWN, SANDY, CLAYEY;  
OXIDIZED, SATURATED

\* \* \* \*

TEST HOLE NUMBER: 37  
LOCATION: 109N-47W-22BBB  
LEGAL LOCATION: NW NW NW SEC. 22, T. 109 N., R. 47 W.

4.0 - 13.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 38  
LOCATION: 109N-47W-22CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 22, T. 109 N., R. 47 W.

5.0 - 41.0 GRAVEL, SUBANGULAR; LARGE, WITH BOULDERS

\* \* \* \*

TEST HOLE NUMBER: 39  
LOCATION: 109N-47W-27AAA  
LEGAL LOCATION: NE NE NE SEC. 27, T. 109 N., R. 47 W.

0 - 7.0 SAND, FINE TO COARSE, PEBBLY, COBBLY  
7.0 - 20.0 GRAVEL, COARSE, PEBBLY, COBBLY  
20.0 - 29.0 SAND, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 40  
LOCATION: 109N-47W-27CDC  
LEGAL LOCATION: SW SE SW SEC. 27, T. 109 N., R. 47 W.

4.0 - 5.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 41  
LOCATION: 109N-47W-31DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 31, T. 109 N., R. 47 W.

4.0 - 5.0 GRAVEL, BROWN, COARSE; DRY  
5.0 - 20.0 SAND, BROWN, MEDIUM, PEBBLY; MOIST  
20.0 - 28.0 SAND, BROWN, MEDIUM; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 42  
LOCATION: 109N-47W-31DDDD 1  
LEGAL LOCATION: SE SE SE SE SEC. 31, T. 109 N., R. 47 W.

4.0 - 9.0 SAND, FINE  
9.0 - 29.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 43  
LOCATION: 109N-47W-32ABB  
LEGAL LOCATION: NW NW NE SEC. 32, T. 109 N., R. 47 W.

3.0 - 29.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 44  
LOCATION: 109N-47W-32BBB  
LEGAL LOCATION: NW NW NW SEC. 32, T. 109 N., R. 47 W.

0 - 10.0 GRAVEL, FINE; SOME COARSE SAND  
10.0 - 21.0 SAND, FINE TO COARSE, CLAYEY  
25.0 - 32.0 SAND, FINE, CLAYEY

\* \* \* \*

TEST HOLE NUMBER: 45  
LOCATION: 109N-47W-32DDD  
LEGAL LOCATION: SE SE SE SEC. 32, T. 109 N., R. 47 W.

4.0 - 26.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 46

LOCATION: 109N-47W-33CDDD

LEGAL LOCATION: SE SE SE SW SEC. 33, T. 109 N., R. 47 W.

2.0 - 65.0 GRAVEL, MEDIUM TO VERY COARSE (ABANDONED HOLE)

\* \* \* \*

TEST HOLE NUMBER: 47

LOCATION: 109N-47W-33DDDD

LEGAL LOCATION: SE SE SE SE SEC. 33, T. 109 N., R. 47 W.

1.0 - 41.0 GRAVEL, MEDIUM, SANDY

\* \* \* \*

TEST HOLE NUMBER: 48

LOCATION: 109N-47W-34BBB

LEGAL LOCATION: NW NW NW SEC. 34, T. 109 N., R. 47 W.

15.0 - 42.0 SAND, FINE TO COARSE, SILTY, GRAVELLY

\* \* \* \*

TEST HOLE NUMBER: 49

LOCATION: 109N-48W-01ADDA

LEGAL LOCATION: NE SE SE NE SEC. 01, T. 109 N., R. 48 W.

1.0 - 25.0 SAND, BROWN, MEDIUM TO COARSE; MOIST, OXIDIZED, SOME GRAVEL, SATURATED AT 5 FEET

\* \* \* \*

TEST HOLE NUMBER: 50

LOCATION: 109N-48W-01DDDD

LEGAL LOCATION: SE SE SE SE SEC. 01, T. 109 N., R. 48 W.

6.0 - 15.0 GRAVEL, BROWN, MEDIUM TO COARSE, SILTY, SANDY; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 51

LOCATION: 109N-48W-02DAAD

LEGAL LOCATION: SE NE NE SE SEC. 02, T. 109 N., R. 48 W.

2.0 - 15.0 SAND, BROWN, FINE, CLAYEY, GRAVELLY; DRY, OXIDIZED  
15.0 - 19.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY; DRY, OXIDIZED

\* \* \* \*



TEST HOLE NUMBER: 52  
LOCATION: 109N-48W-02DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 02, T. 109 N., R. 48 W.

2.0 - 9.0 GRAVEL, BROWN, COARSE, SANDY; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 53  
LOCATION: 109N-48W-03ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 03, T. 109 N., R. 48 W.

7.0 - 9.0 GRAVEL, BROWN, MEDIUM, SANDY; DRY,  
OXIDIZED

9.0 - 21.0 SAND, BROWN, MEDIUM, CLAYEY; DRY,  
OXIDIZED, SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 54  
LOCATION: 109N-48W-05ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 05, T. 109 N., R. 48 W.

4.0 - 17.0 GRAVEL, BROWN, MEDIUM TO COARSE, SILTY,  
VERY SANDY; MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 55  
LOCATION: 109N-48W-06AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 06, T. 109 N., R. 48 W.

6.0 - 12.0 SAND, BROWN, MEDIUM TO COARSE, SILTY,  
GRAVELLY; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 56  
LOCATION: 109N-48W-06DAAA  
LEGAL LOCATION: NE NE NE SE SEC. 06, T. 109 N., R. 48 W.

4.0 - 17.0 SAND, BROWN, MEDIUM TO COARSE; MOIST,  
OXIDIZED, SOME GRAVEL, SATURATED AT 8  
FEET

\* \* \* \*

TEST HOLE NUMBER: 57  
LOCATION: 109N-48W-12ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 12, T. 109 N., R. 48 W.

3.0 - 5.0 GRAVEL, BROWN, VERY COARSE; DRY, OXIDIZED  
5.0 - 6.0 SAND, BROWN, MEDIUM; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 58  
LOCATION: 109N-48W-21AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 21, T. 109 N., R. 48 W.

4.0 - 6.0 GRAVEL, BROWN, MEDIUM, CLAYEY, POORLY  
SORTED; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 59  
LOCATION: 109N-48W-29AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 29, T. 109 N., R. 48 W.

0 - 5.0 SAND, BROWN, FINE; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 60  
LOCATION: 109N-48W-30ADAD  
LEGAL LOCATION: SE NE SE NE SEC. 30, T. 109 N., R. 48 W.

0 - 3.0 GRAVEL, BROWN, MEDIUM, SANDY; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 61  
LOCATION: 109N-49W-01DADA  
LEGAL LOCATION: NE SE NE SE SEC. 01, T. 109 N., R. 49 W.

3.0 - 4.0 SAND, GRAY, MEDIUM, POORLY SORTED; MOIST  
4.0 - 24.0 GRAVEL, REDDISH-BROWN, FINE, MODERATELY  
SORTED; SATURATED, OXIDIZED  
24.0 - 39.0 SAND, GRAY, MEDIUM, WELL SORTED;  
SATURATED, UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 62  
LOCATION: 109N-49W-02DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 02, T. 109 N., R. 49 W.

8.0 - 14.0 SAND AND GRAVEL  
14.0 - 29.0 SAND, FINE

\* \* \* \*

TEST HOLE NUMBER: 63  
LOCATION: 109N-49W-03ABDA  
LEGAL LOCATION: NE SE NW NE SEC. 03, T. 109 N., R. 49 W.

2.0 - 7.0 GRAVEL, REDDISH-BROWN, COARSE; DRY,

OXIDIZED  
7.0 - 50.0 GRAVEL, REDDISH-BROWN, FINE TO MEDIUM;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 64  
LOCATION: 109N-49W-03ABDB  
LEGAL LOCATION: NW SE NW NE SEC. 03, T. 109 N., R. 49 W.

7.0 - 46.0 GRAVEL, REDDISH-BROWN, FINE TO MEDIUM,  
VERY SANDY; SATURATED, SOME COARSE  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 65  
LOCATION: 109N-49W-03ACAA 1  
LEGAL LOCATION: NE NE SW NE SEC. 03, T. 109 N., R. 49 W.

4.0 - 6.0 SAND, BROWN, MEDIUM, GRAVELLY; SATURATED  
6.0 - 35.0 GRAVEL, REDDISH-BROWN, FINE TO MEDIUM,  
SANDY; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 66  
LOCATION: 109N-49W-03ACAA 2  
LEGAL LOCATION: NE NE SW NE SEC. 03, T. 109 N., R. 49 W.

5.0 - 13.0 GRAVEL, LIGHT-BROWN, COARSE, SILTY,  
PEBBLY; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 67  
LOCATION: 109N-49W-03ACBB  
LEGAL LOCATION: NW NW SW NE SEC. 03, T. 109 N., R. 49 W.

4.0 - 30.0 SAND, REDDISH-BROWN, COARSE, GRAVELLY;  
SATURATED

\* \* \* \*

TEST HOLE NUMBER: 68  
LOCATION: 109N-49W-03ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 03, T. 109 N., R. 49 W.

0 - 14.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 69  
LOCATION: 109N-49W-03BACD 1

LEGAL LOCATION: SE SW NE NW SEC. 03, T. 109 N., R. 49 W.

4.0 -	13.0	GRAVEL, LIGHT-BROWN, MEDIUM, CLAYEY, SANDY; SATURATED, OXIDIZED
13.0 -	15.0	GRAVEL, LIGHT-BROWN, SANDY, COARSE AT 13 FEET; OXIDIZED
15.0 -	51.0	GRAVEL, LIGHT-BROWN, MEDIUM; OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 70

LOCATION: 109N-49W-03BACD 2

LEGAL LOCATION: SE SW NE NW SEC. 03, T. 109 N., R. 49 W.

5.0 -	28.0	GRAVEL, BROWN, SILTY, PEBBLY; SATURATED OXIDIZED
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\* \* \* \*

TEST HOLE NUMBER: 71

LOCATION: 109N-49W-03BADD

LEGAL LOCATION: SE SE NE NW SEC. 03, T. 109 N., R. 49 W.

3.0 -	6.0	GRAVEL, BROWN, SILTY, PEBBLY; OXIDIZED, MOIST
6.0 -	50.0	GRAVEL, BROWN, SILTY, PEBBLY; OXIDIZED, SATURATED

\* \* \* \*

TEST HOLE NUMBER: 72

LOCATION: 109N-49W-03BDAA 1

LEGAL LOCATION: NE NE SE NW SEC. 03, T. 109 N., R. 49 W.

4.0 -	6.0	SAND, LIGHT-BROWN, COARSE, PEBBLY; MOIST
6.0 -	46.0	GRAVEL, LIGHT-BROWN, MEDIUM TO COARSE, SANDY; SATURATED, SOME CLAY

\* \* \* \*

TEST HOLE NUMBER: 73

LOCATION: 109N-49W-03BDAA 2

LEGAL LOCATION: NE NE SE NW SEC. 03, T. 109 N., R. 49 W.

4.0 -	6.0	SAND, BROWN, SILTY, PEBBLY; OXIDIZED, VERY MOIST
6.0 -	23.0	SAND, BROWN, SILTY, PEBBLY; OXIDIZED, SATURATED

\* \* \* \*

TEST HOLE NUMBER: 74

LOCATION: 109N-49W-03BDAB 1

LEGAL LOCATION: NW NE SE NW SEC. 03, T. 109 N., R. 49 W.

5.0 - 6.0 GRAVEL, LIGHT-BROWN, MEDIUM, SANDY,  
SILTY; OXIDIZED, MOIST  
6.0 - 33.0 GRAVEL, LIGHT-BROWN, MEDIUM, SANDY,  
SILTY; OXIDIZED, SATURATED

\* \* \* \*

TEST HOLE NUMBER: 75  
LOCATION: 109N-49W-03BDAB 2  
LEGAL LOCATION: NW NE SE NW SEC. 03, T. 109 N., R. 49 W.

5.0 - 33.0 GRAVEL, BROWN, MEDIUM; OXIDIZED,  
SATURATED

\* \* \* \*

TEST HOLE NUMBER: 76  
LOCATION: 109N-49W-03BDBB 1  
LEGAL LOCATION: NW NW SE NW SEC. 03, T. 109 N., R. 49 W.

5.0 - 49.0 SAND, BROWN, SILTY, PEBBLY; OXIDIZED  
SATURATED

\* \* \* \*

TEST HOLE NUMBER: 77  
LOCATION: 109N-49W-03BDBB 2  
LEGAL LOCATION: NW NW SE NW SEC. 03, T. 109 N., R. 49 W.

5.0 - 28.0 SAND, LIGHT-BROWN, GRAVELLY, POORLY  
SORTED; OXIDIZED, SATURATED

\* \* \* \*

TEST HOLE NUMBER: 78  
LOCATION: 109N-49W-03BDBC 1  
LEGAL LOCATION: SW NW SE NW SEC. 03, T. 109 N., R. 49 W.

4.0 - 6.0 SAND, GRAY-BROWN, CLAYEY; VERY MOIST  
6.0 - 46.0 GRAVEL, LIGHT-BROWN, MEDIUM; OXIDIZED,  
SATURATED, SOME SAND

\* \* \* \*

TEST HOLE NUMBER: 79  
LOCATION: 109N-49W-03BDBC 2  
LEGAL LOCATION: SW NW SE NW SEC. 03, T. 109 N., R. 49 W.

5.0 - 28.0 GRAVEL, BROWN, COARSE, SILTY, SANDY;  
SATURATED

\* \* \* \*

TEST HOLE NUMBER: 80

LOCATION: 109N-49W-03BDCC

LEGAL LOCATION: SW SW SE NW SEC. 03, T. 109 N., R. 49 W.

6.0 - 36.0 GRAVEL, BROWN, SILTY; OXIDIZED, SATURATED

\* \* \* \*

TEST HOLE NUMBER: 81

LOCATION: 109N-49W-03BDDD 1

LEGAL LOCATION: SE SE SE NW SEC. 03, T. 109 N., R. 49 W.

4.0 - 7.0 GRAVEL, BROWN, SILTY, PEBBLY; OXIDIZED,  
MOIST

7.0 - 28.0 GRAVEL, BROWN, SILTY, PEBBLY; OXIDIZED,  
SATURATED

\* \* \* \*

TEST HOLE NUMBER: 82

LOCATION: 109N-49W-03BDDD 2

LEGAL LOCATION: SE SE SE NW SEC. 03, T. 109 N., R. 49 W.

4.0 - 5.0 GRAVEL, MEDIUM, SANDY; MOIST

5.0 - 24.0 GRAVEL, MEDIUM, SANDY; OXIDIZED,  
SATURATED

\* \* \* \*

TEST HOLE NUMBER: 83

LOCATION: 109N-49W-04ADDD

LEGAL LOCATION: SE SE SE NE SEC. 04, T. 109 N., R. 49 W.

3.0 - 8.0 SAND AND GRAVEL

8.0 - 60.0 SAND, COARSE, GRAVELLY; SOME BOULDERS

\* \* \* \*

TEST HOLE NUMBER: 84

LOCATION: 109N-49W-04BAAA

LEGAL LOCATION: NE NE NE NW SEC. 04, T. 109 N., R. 49 W.

1.0 - 6.0 SAND AND GRAVEL

6.0 - 10.0 SAND, FINE TO COARSE

10.0 - 67.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 85

LOCATION: 109N-49W-04BBBB

LEGAL LOCATION: NW NW NW NW SEC. 04, T. 109 N., R. 49 W.

5.0 - 7.0 SAND, BROWN, FINE

7.0 - 9.0 SAND, COARSE; SOME GRAVEL

9.0 - 45.0 GRAVEL, COARSE

\* \* \* \*

TEST HOLE NUMBER: 86  
LOCATION: 109N-49W-05CBBB  
LEGAL LOCATION: NW NW NW SW SEC. 05, T. 109 N., R. 49 W.

1.0 - 7.0 SAND AND GRAVEL  
7.0 - 67.0 GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 87  
LOCATION: 109N-49W-06AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 06, T. 109 N., R. 49 W.

1.0 - 3.0 SAND AND GRAVEL  
3.0 - 20.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 88  
LOCATION: 109N-49W-07BAAA  
LEGAL LOCATION: NE NE NE NW SEC. 07, T. 109 N., R. 49 W.

0 - 24.0 SAND AND GRAVEL  
24.0 - 76.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 89  
LOCATION: 109N-49W-08ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 08, T. 109 N., R. 49 W.

1.0 - 53.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 90  
LOCATION: 109N-49W-10BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 10, T. 109 N., R. 49 W.

3.0 - 7.0 SAND AND GRAVEL  
7.0 - 65.0 SAND AND GRAVEL, COARSE; SOME BOULDERS

\* \* \* \*

TEST HOLE NUMBER: 91  
LOCATION: 109N-49W-11BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 11, T. 109 N., R. 49 W.

5.0 - 12.0 SAND, FINE TO COARSE; SOME GRAVEL  
12.0 - 28.0 SAND, BROWN, FINE

\* \* \* \*

TEST HOLE NUMBER: 92  
LOCATION: 109N-49W-16AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 16, T. 109 N., R. 49 W.

5.0 -	7.0	SAND, FINE TO COARSE
7.0 -	14.0	SAND AND GRAVEL
14.0 -	33.0	SAND, BROWN, FINE, WELL-SORTED

\* \* \* \*

TEST HOLE NUMBER: 93  
LOCATION: 109N-49W-17BBBA  
LEGAL LOCATION: NE NW NW NW SEC. 17, T. 109 N., R. 49 W.

4.0 -	7.0	SAND, BROWN, MEDIUM, VERY SILTY, POORLY SORTED; MOIST, OXIDIZED
7.0 -	9.0	GRAVEL, BROWN, MEDIUM, MODERATELY SORTED; SATURATED, OXIDIZED
9.0 -	66.0	SAND, LIGHT-GRAY, COARSE, MODERATELY SORTED; SATURATED, UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 94  
LOCATION: 109N-49W-18CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 18, T. 109 N., R. 49 W.

0 -	7.0	SAND, FINE, SILTY
7.0 -	43.0	SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 95  
LOCATION: 109N-49W-19CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 19, T. 109 N., R. 49 W.

6.0 -	7.0	SAND, GRAY, COARSE, VERY CLAYEY; MOIST, UNOXIDIZED
11.0 -	16.0	SAND, DARK-GRAY, COARSE, VERY CLAYEY, POORLY SORTED; SATURATED, UNOXIDIZED, SOME FINE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 96  
LOCATION: 109N-49W-20CBCC  
LEGAL LOCATION: SW SW NW SW SEC. 20, T. 109 N., R. 49 W.

3.0 -	10.0	SAND, BROWN, FINE, MODERATELY SORTED; VERY MOIST, OXIDIZED
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\* \* \* \*

TEST HOLE NUMBER: 97



LOCATION: 109N-49W-25ADAD

LEGAL LOCATION: SE NE SE NE SEC. 25, T. 109 N., R. 49 W.

12.0 - 16.0 SAND, BROWN, FINE, VERY SILTY, POORLY  
SORTED; MOIST, OXIDIZED, SATURATED AT  
14 FEET

\* \* \* \*

TEST HOLE NUMBER: 98

LOCATION: 109N-49W-31BBAA

LEGAL LOCATION: NE NE NW NW SEC. 31, T. 109 N., R. 49 W.

4.0 - 25.0 SAND, FINE TO MEDIUM

\* \* \* \*

TEST HOLE NUMBER: 99

LOCATION: 109N-49W-31CBB

LEGAL LOCATION: NW NW SW SW SEC. 31, T. 109 N., R. 49 W.

9.0 - 22.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 100

LOCATION: 109N-49W-31CCCC 1

LEGAL LOCATION: SW SW SW SW SEC. 31, T. 109 N., R. 49 W.

8.0 - 14.0 SAND, COARSE, PEBBLY

\* \* \* \*

TEST HOLE NUMBER: 101

LOCATION: 109N-49W-31CCCC 2

LEGAL LOCATION: SW SW SW SW SEC. 31, T. 109 N., R. 49 W.

3.0 - 15.0 GRAVEL, COARSE

\* \* \* \*

TEST HOLE NUMBER: 102

LOCATION: 109N-49W-31DCC

LEGAL LOCATION: SW SW SE SEC. 31, T. 109 N., R. 49 W.

5.0 - 14.0 SAND AND GRAVEL  
14.0 - 19.0 SAND, COARSE

\* \* \* \*

TEST HOLE NUMBER: 103

LOCATION: 109N-49W-31DDD

LEGAL LOCATION: SE SE SE SEC. 31, T. 109 N., R. 49 W.

4.0 - 14.0 SAND AND GRAVEL  
14.0 - 29.0 GRAVEL, PEBBLY

\* \* \* \*

TEST HOLE NUMBER: 104  
LOCATION: 109N-49W-32BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 32, T. 109 N., R. 49 W.

6.0 - 9.0 SAND, BROWN, MEDIUM, PEBBLY; MOIST,  
OXIDIZED  
9.0 - 14.0 SAND, BROWN, FINE; MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 105  
LOCATION: 109N-49W-35BBBC  
LEGAL LOCATION: SW NW NW NW SEC. 35, T. 109 N., R. 49 W.

0 - 12.0 SAND, BROWN, MEDIUM, SILTY; DRY, OXIDIZED  
12.0 - 20.0 GRAVEL, BROWN, MEDIUM, SANDY; MOIST,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 106  
LOCATION: 109N-50W-01AAAB  
LEGAL LOCATION: NW NE NE NE SEC. 01, T. 109 N., R. 50 W.

5.0 - 11.0 SAND, LIGHT-BROWN, FINE, SILTY, POORLY  
SORTED; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 107  
LOCATION: 109N-50W-01CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 01, T. 109 N., R. 50 W.

1.0 - 23.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 108  
LOCATION: 109N-50W-01DAAA  
LEGAL LOCATION: NE NE NE SE SEC. 01, T. 109 N., R. 50 W.

1.0 - 4.0 GRAVEL, BROWN, VERY COARSE; DRY, OXIDIZED  
4.0 - 9.0 SAND, BROWN, COARSE, GRAVELLY; DRY,  
OXIDIZED  
9.0 - 22.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 109  
LOCATION: 109N-50W-01DBAB  
LEGAL LOCATION: NW NE NW SE SEC. 01, T. 109 N., R. 50 W.

3.0 - 10.0 GRAVEL, REDDISH-BROWN, COARSE, VERY  
SANDY; DRY, OXIDIZED  
10.0 - 19.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 110  
LOCATION: 109N-50W-01DBCA  
LEGAL LOCATION: NE SW NW SE SEC. 01, T. 109 N., R. 50 W.

2.0 - 14.0 GRAVEL, BROWN, MEDIUM, SANDY; DRY

\* \* \* \*

TEST HOLE NUMBER: 111  
LOCATION: 109N-50W-01DBCC  
LEGAL LOCATION: SW SW NW SE SEC. 01, T. 109 N., R. 50 W.

2.0 - 6.0 GRAVEL, MEDIUM TO COARSE, SILTY, SANDY;  
MOIST

\* \* \* \*

TEST HOLE NUMBER: 112  
LOCATION: 109N-50W-01DC 1  
LEGAL LOCATION: SW SE SEC. 01, T. 109 N., R. 50 W.

1.0 - 36.0 SAND AND GRAVEL, FINE SAND AND COARSE  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 113  
LOCATION: 109N-50W-01DC 2  
LEGAL LOCATION: SW SE SEC. 01, T. 109 N., R. 50 W.

1.0 - 30.0 SAND AND GRAVEL, FINE SAND AND MEDIUM  
TO COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 114  
LOCATION: 109N-50W-01DC 3  
LEGAL LOCATION: SW SE SEC. 01, T. 109 N., R. 50 W.

2.0 - 6.0 GRAVEL, BROWN, SILTY, SANDY; DRY  
6.0 - 8.0 SAND, RED-BROWN, GRAVELLY; MOIST  
8.0 - 22.0 GRAVEL, RED-BROWN, SANDY; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 115  
LOCATION: 109N-50W-01DC 4  
LEGAL LOCATION: SW SE SEC. 01, T. 109 N., R. 50 W.

5.0 - 26.0 SAND AND GRAVEL, FINE SAND AND COARSE  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 116  
LOCATION: 109N-50W-01DC 5  
LEGAL LOCATION: SW SE SEC. 01, T. 109 N., R. 50 W.

0 - 1.0 SAND, BROWN, GRAVELLY; MOIST  
1.0 - 10.0 SAND, BROWN, SILTY, GRAVELLY; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 117  
LOCATION: 109N-50W-01DC 6  
LEGAL LOCATION: SW SE SEC. 01, T. 109 N., R. 50 W.

0 - 1.0 SAND, BROWN, GRAVELLY; MOIST  
1.0 - 10.0 SAND, BROWN, GRAVELLY; SATURATED  
15.0 - 27.0 SAND, BROWN, GRAVELLY; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 118  
LOCATION: 109N-50W-01DC 7  
LEGAL LOCATION: SW SE SEC. 01, T. 109 N., R. 50 W.

0 - 4.0 SAND, RED-BROWN, GRAVELLY; DRY  
4.0 - 10.0 SAND, BROWN, GRAVELLY; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 119  
LOCATION: 109N-50W-01DC 8  
LEGAL LOCATION: SW SE SEC. 01, T. 109 N., R. 50 W.

3.0 - 6.0 SAND, BROWN, SILTY, GRAVELLY; DRY  
6.0 - 9.0 SAND, BROWN, SILTY, CLAYEY, GRAVELLY;  
SATURATED

\* \* \* \*

TEST HOLE NUMBER: 120  
LOCATION: 109N-50W-01DC 9  
LEGAL LOCATION: SW SE SEC. 01, T. 109 N., R. 50 W.

3.0 - 7.0 SAND, RED-BROWN, GRAVELLY; DRY

\* \* \* \*

TEST HOLE NUMBER: 121  
LOCATION: 109N-50W-01DCBB  
LEGAL LOCATION: NW NW SW SE SEC. 01, T. 109 N., R. 50 W.

3.0 -	7.0	SAND AND GRAVEL, LIGHT-BROWN TO TAN, SILTY
7.0 -	9.0	SAND AND GRAVEL, TAN; SOME SILT
9.0 -	18.0	SAND, FINE TO COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 122  
LOCATION: 109N-50W-01DCDC  
LEGAL LOCATION: SW SE SW SE SEC. 01, T. 109 N., R. 50 W.

1.0 -	3.0	SAND, BROWN, MEDIUM TO FINE, WELL SORTED
3.0 -	6.0	GRAVEL, BROWN, COARSE, MODERATELY SORTED; DRY
6.0 -	11.0	GRAVEL, GRAY, COARSE TO MEDIUM, WELL SORTED; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 123  
LOCATION: 109N-50W-01DD 1  
LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

1.0 -	40.0	SAND AND GRAVEL, FINE SAND AND COARSE GRAVEL
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\* \* \* \*

TEST HOLE NUMBER: 124  
LOCATION: 109N-50W-01DD 2  
LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

1.0 -	27.0	SAND AND GRAVEL, MEDIUM SAND AND COARSE GRAVEL
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TEST HOLE NUMBER: 125  
LOCATION: 109N-50W-01DD 3  
LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

1.0 -	30.0	SAND AND GRAVEL, MEDIUM SAND AND COARSE GRAVEL
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TEST HOLE NUMBER: 126  
LOCATION: 109N-50W-01DD 4

LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

2.0 - 26.0 SAND AND GRAVEL, MEDIUM SAND AND COARSE  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 127

LOCATION: 109N-50W-01DD 5

LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

1.0 - 28.0 SAND AND GRAVEL, LARGE SAND AND COARSE  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 128

LOCATION: 109N-50W-01DD 6

LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

2.0 - 30.0 SAND AND GRAVEL, MEDIUM SAND AND COARSE  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 129

LOCATION: 109N-50W-01DD 7

LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

1.0 - 30.0 SAND AND GRAVEL, MEDIUM SAND AND COARSE  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 130

LOCATION: 109N-50W-01DD 8

LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

1.0 - 30.0 SAND AND GRAVEL, COARSE SAND AND COARSE  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 131

LOCATION: 109N-50W-01DD 9

LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

0 - 5.0 SAND AND GRAVEL  
5.0 - 24.0 SAND AND GRAVEL; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 132

LOCATION: 109N-50W-01DD 10

LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

0	-	6.0	SAND, RED-BROWN, SILTY, GRAVELLY; DRY
6.0	-	22.0	SAND, BROWN, GRAVELLY; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 133

LOCATION: 109N-50W-01DD 11

LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

0	-	9.0	GRAVEL, BROWN, MEDIUM, SANDY; DRY
9.0	-	19.0	GRAVEL, BROWN, MEDIUM, SANDY; SATURATED
25.0	-	28.0	SAND

\* \* \* \*

TEST HOLE NUMBER: 134

LOCATION: 109N-50W-01DD 12

LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

0	-	3.0	GRAVEL, COARSE; DRY
3.0	-	11.0	SAND, RED-BROWN, GRAVELLY; MOIST
11.0	-	30.0	GRAVEL, MEDIUM, SANDY; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 135

LOCATION: 109N-50W-01DD 13

LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

0	-	2.0	GRAVEL, VERY COARSE; DRY
2.0	-	11.0	SAND, RED-BROWN, GRAVELLY; MOIST
11.0	-	29.0	GRAVEL, MEDIUM, SANDY; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 136

LOCATION: 109N-50W-01DD 14

LEGAL LOCATION: SE SE SEC. 01, T. 109 N., R. 50 W.

1.0	-	4.0	GRAVEL, MEDIUM TO COARSE, VERY SANDY
4.0	-	6.0	SAND, COARSE, GRAVELLY; MOIST, UNOXIDIZED
6.0	-	15.0	SAND, COARSE, GRAVELLY; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 137

LOCATION: 109N-50W-01DDAA

LEGAL LOCATION: NE NE SE SE SEC. 01, T. 109 N., R. 50 W.

2.0	-	33.0	GRAVEL, MEDIUM TO COARSE, SANDY; MOIST
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\* \* \* \*

TEST HOLE NUMBER: 138  
LOCATION: 109N-50W-01DDB  
LEGAL LOCATION: NW SE SE SEC. 01, T. 109 N., R. 50 W.

1.0 - 5.0 GRAVEL, BROWN, COARSE, SANDY; DRY,  
OXIDIZED  
5.0 - 22.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 139  
LOCATION: 109N-50W-01DDDC  
LEGAL LOCATION: SW SE SE SE SEC. 01, T. 109 N., R. 50 W.

1.0 - 2.0 SAND, MEDIUM, GRAVELLY; MOIST, OXIDIZED  
2.0 - 12.0 GRAVEL, COARSE, VERY SANDY, POORLY  
SORTED; DRY  
12.0 - 33.0 GRAVEL, COARSE, VERY SANDY, POORLY  
SORTED; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 140  
LOCATION: 109N-50W-01DDDC 1  
LEGAL LOCATION: SW SE SE SE SEC. 01, T. 109 N., R. 50 W.

2.0 - 14.0 SAND, FINE TO COARSE; SOME SILT  
14.0 - 19.0 SAND, FINE TO COARSE; SOME GRAVEL  
19.0 - 29.0 SAND, TAN TO BUFF, COARSE

\* \* \* \*

TEST HOLE NUMBER: 141  
LOCATION: 109N-50W-02DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 02, T. 109 N., R. 50 W.

2.0 - 9.0 GRAVEL, BROWN, COARSE, SANDY; MOIST,  
OXIDIZED, SATURATED AT 6 FEET

\* \* \* \*

TEST HOLE NUMBER: 142  
LOCATION: 109N-50W-03DAAA  
LEGAL LOCATION: NE NE NE SE SEC. 03, T. 109 N., R. 50 W.

4.0 - 16.0 SAND, BROWN, MEDIUM, PEBBLY; MOIST,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 143  
LOCATION: 109N-50W-05CCCC  
LEGAL LOCATION: NW SW SW SW SEC. 05, T. 109 N., R. 50 W.



13.0 - 24.0 GRAVEL, BROWN, MEDIUM; SATURATED, CLEAN,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 144  
LOCATION: 109N-50W-05DCCC  
LEGAL LOCATION: SW SW SW SE SEC. 05, T. 109 N., R. 50 W.

6.0 - 9.0 SAND, BLACK, SILTY  
9.0 - 23.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 145  
LOCATION: 109N-50W-06AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 06, T. 109 N., R. 50 W.

7.0 - 12.0 SAND, FINE TO COARSE  
12.0 - 22.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 146  
LOCATION: 109N-50W-06CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 06, T. 109 N., R. 50 W.

7.0 - 11.0 SAND, DARK-BROWN, VERY FINE, SILTY  
11.0 - 35.0 SAND, FINE TO COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 147  
LOCATION: 109N-50W-08CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 08, T. 109 N., R. 50 W.

1.0 - 7.0 SAND AND GRAVEL  
7.0 - 26.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 148  
LOCATION: 109N-50W-09AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 09, T. 109 N., R. 50 W.

3.0 - 7.0 SAND, FINE TO COARSE  
7.0 - 21.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 149  
LOCATION: 109N-50W-10CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 10, T. 109 N., R. 50 W.

0 - 3.0 SAND AND GRAVEL  
3.0 - 20.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 150  
LOCATION: 109N-50W-11CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 11, T. 109 N., R. 50 W.

0 - 8.0 SAND, FINE; SOME GRAVEL  
8.0 - 25.0 SAND AND GRAVEL  
25.0 - 52.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 151  
LOCATION: 109N-50W-12ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 12, T. 109 N., R. 50 W.

2.0 - 7.0 SAND AND GRAVEL  
7.0 - 70.0 GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 152  
LOCATION: 109N-50W-13CCCC 1  
LEGAL LOCATION: SW SW SW SW SEC. 13, T. 109 N., R. 50 W.

1.0 - 6.0 SAND AND GRAVEL  
6.0 - 22.0 SAND, COARSE; SOME GRAVEL  
22.0 - 40.0 SAND, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 153  
LOCATION: 109N-50W-14AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 14, T. 109 N., R. 50 W.

1.0 - 22.0 SAND AND GRAVEL  
22.0 - 68.0 GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 154  
LOCATION: 109N-50W-15AABB  
LEGAL LOCATION: NW NW NE NE SEC. 15, T. 109 N., R. 50 W.

1.0 - 3.0 SAND AND GRAVEL  
3.0 - 12.0 SAND, FINE TO COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 155  
LOCATION: 109N-50W-16BBBB

LEGAL LOCATION: NW NW NW NW SEC. 16, T. 109 N., R. 50 W.

1.0 - 7.0 SAND, BLACK, FINE TO COARSE, SILTY  
7.0 - 23.0 SAND, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 156

LOCATION: 109N-50W-17AAAA

LEGAL LOCATION: NE NE NE NE SEC. 17, T. 109 N., R. 50 W.

PRELIMINARY LOG -- SUBJECT TO CHANGE

7.0 - 21.0 SAND AND GRAVEL, COARSE SAND TO COARSE  
PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 157

LOCATION: 109N-50W-18BBBB

LEGAL LOCATION: NW NW NW NW SEC. 18, T. 109 N., R. 50 W.

1.0 - 6.0 SAND AND GRAVEL  
6.0 - 13.0 SAND AND GRAVEL, WELL-SORTED  
13.0 - 33.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 158

LOCATION: 109N-50W-19AABA

LEGAL LOCATION: NE NW NE NE SEC. 19, T. 109 N., R. 50 W.

4.0 - 9.0 GRAVEL, BROWN, MEDIUM TO COARSE, VERY  
SANDY; DRY, OXIDIZED, SATURATED AT 8  
FEET

\* \* \* \*

TEST HOLE NUMBER: 159

LOCATION: 109N-50W-20ABAA

LEGAL LOCATION: NE NE NW NE SEC. 20, T. 109 N., R. 50 W.

4.0 - 13.0 SAND, BROWN, MEDIUM, CLAYEY; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 160

LOCATION: 109N-50W-21AABB

LEGAL LOCATION: NW NW NE NE SEC. 21, T. 109 N., R. 50 W.

4.0 - 25.0 GRAVEL, BROWN, MEDIUM, SANDY; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 161  
LOCATION: 109N-50W-23AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 23, T. 109 N., R. 50 W.

6.0 - 41.0 SAND, BROWN, MEDIUM, POORLY SORTED;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 162  
LOCATION: 109N-50W-23BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 23, T. 109 N., R. 50 W.

5.0 - 22.0 SAND AND GRAVEL  
22.0 - 44.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 163  
LOCATION: 109N-50W-25BAAA  
LEGAL LOCATION: NE NE NE NW SEC. 25, T. 109 N., R. 50 W.

0 - 6.0 SAND AND GRAVEL  
6.0 - 18.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 164  
LOCATION: 109N-50W-25BBCC  
LEGAL LOCATION: SW SW NW NW SEC. 25, T. 109 N., R. 50 W.

6.0 - 17.0 SAND, COARSE

\* \* \* \*

TEST HOLE NUMBER: 165  
LOCATION: 109N-50W-25BCC  
LEGAL LOCATION: SW SW NW SEC. 25, T. 109 N., R. 50 W.

3.0 - 12.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 166  
LOCATION: 109N-50W-26BAAA  
LEGAL LOCATION: NE NE NE NW SEC. 26, T. 109 N., R. 50 W.

1.0 - 13.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 167  
LOCATION: 109N-50W-26CCDD  
LEGAL LOCATION: SE SE SW SW SEC. 26, T. 109 N., R. 50 W.

12.0 - 37.0 GRAVEL, BROWN, MEDIUM, SANDY; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 168  
LOCATION: 109N-50W-28ABAB  
LEGAL LOCATION: NW NE NW NE SEC. 28, T. 109 N., R. 50 W.

5.0 - 13.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 169  
LOCATION: 109N-50W-31DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 31, T. 109 N., R. 50 W.

0 - 10.0 SAND, REDDISH-BROWN, COARSE, PEBBLY,  
POORLY SORTED; DRY, OXIDIZED, MOIST  
AT 4 FEET, CLEAN  
10.0 - 19.0 SAND, BROWN, COARSE, PEBBLY, POORLY  
SORTED; MOIST, OXIDIZED, CLEAN

\* \* \* \*

TEST HOLE NUMBER: 170  
LOCATION: 109N-50W-33DDCD  
LEGAL LOCATION: SE SW SE SE SEC. 33, T. 109 N., R. 50 W.

7.0 - 17.0 GRAVEL, MEDIUM, VERY SANDY

\* \* \* \*

TEST HOLE NUMBER: 171  
LOCATION: 109N-50W-34BBBA  
LEGAL LOCATION: NE NW NW NW SEC. 34, T. 109 N., R. 50 W.

4.0 - 9.0 SAND, REDDISH-BROWN, MEDIUM, WELL SORTED;  
DRY, OXIDIZED  
9.0 - 12.0 GRAVEL, DARK-BROWN, MEDIUM, POORLY  
SORTED; DRY, OXIDIZED  
12.0 - 37.0 GRAVEL, BROWN, FINE, WELL SORTED;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 172  
LOCATION: 109N-50W-35DCCC 1  
LEGAL LOCATION: SW SW SW SE SEC. 35, T. 109 N., R. 50 W.

10.0 - 12.0 SAND, BROWN, MEDIUM, PEBBLY; MOIST  
12.0 - 14.0 GRAVEL, BROWN, COARSE; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 173  
LOCATION: 109N-50W-35DCD  
LEGAL LOCATION: SE SW SE SEC. 35, T. 109 N., R. 50 W.

4.0 - 29.0 SAND, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 174  
LOCATION: 109N-50W-35DDCC  
LEGAL LOCATION: SW SW SE SE SEC. 35, T. 109 N., R. 50 W.

3.0 - 23.0 GRAVEL, MEDIUM TO VERY COARSE, SANDY

\* \* \* \*

TEST HOLE NUMBER: 175  
LOCATION: 109N-50W-36BAA  
LEGAL LOCATION: NE NE NW SEC. 36, T. 109 N., R. 50 W.

4.0 - 14.0 SAND AND GRAVEL  
14.0 - 19.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 176  
LOCATION: 109N-50W-36BCB  
LEGAL LOCATION: NW SW NW SEC. 36, T. 109 N., R. 50 W.

3.0 - 9.0 SAND, COARSE  
9.0 - 39.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 177  
LOCATION: 109N-51W-01CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 01, T. 109 N., R. 51 W.

4.0 - 23.0 SAND, REDDISH-BROWN, MEDIUM, GRAVELLY;  
MOIST, OXIDIZED, SATURATED AT 15 FEET  
23.0 - 34.0 SAND, BROWN, MEDIUM; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 178  
LOCATION: 109N-51W-02ADAD  
LEGAL LOCATION: SE NE SE NE SEC. 02, T. 109 N., R. 51 W.

1.0 - 2.0 SAND, BROWN, MEDIUM, SILTY, POORLY  
SORTED; DRY, OXIDIZED  
2.0 - 4.0 SAND, REDDISH-BROWN, FINE, WELL SORTED;  
DRY, OXIDIZED

4.0 - 6.0 SAND, DARK-BROWN, FINE, VERY SILTY, WELL  
SORTED; VERY MOIST, OXIDIZED  
6.0 - 46.0 GRAVEL, DARK-BROWN, COARSE, MODERATELY  
SORTED; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 179  
LOCATION: 109N-51W-03ADAA  
LEGAL LOCATION: NE NE SE NE SEC. 03, T. 109 N., R. 51 W.

16.0 - 21.0 GRAVEL, BROWN, MEDIUM, VERY CLAYEY,  
SILTY; MOIST, OXIDIZED  
21.0 - 36.0 SAND, REDDISH-BROWN, COARSE, CLAYEY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 180  
LOCATION: 109N-51W-11BABB  
LEGAL LOCATION: NW NW NE NW SEC. 11, T. 109 N., R. 51 W.

3.0 - 7.0 SAND, REDDISH-BROWN, FINE, WELL SORTED;  
MOIST, OXIDIZED, SATURATED AT 6 FEET  
7.0 - 46.0 GRAVEL, BROWN, MEDIUM, MODERATELY SORTED;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 181  
LOCATION: 109N-51W-11DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 11, T. 109 N., R. 51 W.

3.0 - 44.0 SAND AND GRAVEL, GRAY AT 9 FEET, MORE  
SANDY TOWARDS BOTTOM

\* \* \* \*

TEST HOLE NUMBER: 182  
LOCATION: 109N-51W-11DDDD 1  
LEGAL LOCATION: SE SE SE SE SEC. 11, T. 109 N., R. 51 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

3.0 - 38.0 SAND AND GRAVEL, MEDIUM SAND TO MEDIUM  
PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 183  
LOCATION: 109N-51W-23ABBA  
LEGAL LOCATION: NE NW NW NE SEC. 23, T. 109 N., R. 51 W.

5.0 - 21.0 SAND, BROWN, MEDIUM; DRY, OXIDIZED, SOME  
GRAVEL

24.0 - 29.0 SAND, BROWN, MEDIUM TO COARSE; SATURATED,  
OXIDIZED, SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 184  
LOCATION: 109N-51W-23BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 23, T. 109 N., R. 51 W.

5.0 - 26.0 GRAVEL, BROWN, MEDIUM TO COARSE, SILTY,  
VERY SANDY; MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 185  
LOCATION: 109N-51W-24ABAB  
LEGAL LOCATION: NW NE NW NE SEC. 24, T. 109 N., R. 51 W.

4.0 - 11.0 SAND, BROWN, MEDIUM TO COARSE; DRY,  
OXIDIZED, SOME GRAVEL  
14.0 - 22.0 SAND, GRAYISH-BROWN, MEDIUM; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 186  
LOCATION: 109N-51W-29DDCD  
LEGAL LOCATION: SE SW SE SE SEC. 29, T. 109 N., R. 51 W.

0 - 4.0 GRAVEL, REDDISH-BROWN, MEDIUM,  
MODERATELY SORTED; DRY, OXIDIZED  
7.0 - 9.0 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 187  
LOCATION: 109N-52W-01BCBB  
LEGAL LOCATION: NW NW SW NW SEC. 01, T. 109 N., R. 52 W.

3.0 - 10.0 SAND, BROWN, MEDIUM, CLAYEY; SATURATED,  
SOME FINE GRAVEL, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 188  
LOCATION: 109N-52W-36DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 36, T. 109 N., R. 52 W.

14.0 - 16.0 GRAVEL, RED-BROWN, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 189  
LOCATION: 110N-47W-07CBCB



LEGAL LOCATION: NW SW NW SW SEC. 07, T. 110 N., R. 47 W.

5.0 - 8.0 GRAVEL, BROWN, COARSE, CLAYEY, POORLY  
SORTED; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 190

LOCATION: 110N-47W-29CCCC

LEGAL LOCATION: SW SW SW SW SEC. 29, T. 110 N., R. 47 W.

0 - 3.0 SAND, LIGHT-TAN, FINE, SILTY

\* \* \* \*

TEST HOLE NUMBER: 191

LOCATION: 110N-47W-32AAAB

LEGAL LOCATION: NW NE NE NE SEC. 32, T. 110 N., R. 47 W.

PRELIMINARY LOG -- SUBJECT TO CHANGE

1.0 - 7.0 SAND AND GRAVEL, FINE SAND TO VERY COARSE  
PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 192

LOCATION: 110N-48W-05AAAA

LEGAL LOCATION: NE NE NE NE SEC. 05, T. 110 N., R. 48 W.

2.0 - 3.0 GRAVEL, BROWN, MEDIUM, VERY SANDY, POORLY  
SORTED; MOIST, OXIDIZED

3.0 - 13.0 SAND, BROWN, MEDIUM, WELL SORTED; MOIST,  
OXIDIZED

22.0 - 24.0 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 193

LOCATION: 110N-48W-05DAAD

LEGAL LOCATION: SE NE NE SE SEC. 05, T. 110 N., R. 48 W.

3.0 - 4.0 SAND, BROWN, MEDIUM; MOIST, OXIDIZED

4.0 - 11.0 GRAVEL, BROWN, VERY COARSE, SANDY; MOIST,  
OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 194

LOCATION: 110N-48W-05DCCC

LEGAL LOCATION: SW SW SW SE SEC. 05, T. 110 N., R. 48 W.

5.0 - 15.0 SAND, DARK-BROWN, VERY FINE; SATURATED,  
OXIDIZED, DIRTY

15.0 - 37.0 GRAVEL, DARK-BROWN, MEDIUM TO COARSE,

SANDY; SATURATED, OXIDIZED, VERY DIRTY

\* \* \* \*

TEST HOLE NUMBER: 195  
LOCATION: 110N-48W-06ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 06, T. 110 N., R. 48 W.

0 - 5.0 SAND, BROWN, FINE; DRY, OXIDIZED  
5.0 - 14.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY,  
COBBLY; DRY, OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 196  
LOCATION: 110N-48W-06ACCC  
LEGAL LOCATION: SW SW SW NE SEC. 06, T. 110 N., R. 48 W.

7.0 - 16.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 197  
LOCATION: 110N-48W-06DCCC  
LEGAL LOCATION: SW SW SW SE SEC. 06, T. 110 N., R. 48 W.

9.0 - 25.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 198  
LOCATION: 110N-48W-07CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 07, T. 110 N., R. 48 W.

9.0 - 17.0 GRAVEL, BROWN, COARSE, SANDY; SATURATED,  
OXIDIZED  
17.0 - 30.0 SAND, BROWN, FINE TO MEDIUM; SATURATED,  
OXIDIZED, SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 199  
LOCATION: 110N-48W-07DADA  
LEGAL LOCATION: NE SE NE SE SEC. 07, T. 110 N., R. 48 W.

8.0 - 21.0 SAND, FINE TO MEDIUM, GRAVELLY

\* \* \* \*

TEST HOLE NUMBER: 200  
LOCATION: 110N-48W-08ADDA  
LEGAL LOCATION: NE SE SE NE SEC. 08, T. 110 N., R. 48 W.

2.0 - 10.0 GRAVEL, BROWN, MEDIUM TO COARSE; DRY,  
OXIDIZED  
10.0 - 24.0 SAND, BROWN, MEDIUM TO COARSE, SILTY,  
PEBBLY; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 201  
LOCATION: 110N-48W-08BBBC  
LEGAL LOCATION: SW NW NW NW SEC. 08, T. 110 N., R. 48 W.

5.0 - 14.0 GRAVEL, BROWN, FINE TO MEDIUM,  
MODERATELY SORTED; MOIST, OXIDIZED  
14.0 - 25.0 GRAVEL, REDDISH-BROWN, COARSE; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 202  
LOCATION: 110N-48W-12CBCB  
LEGAL LOCATION: NW SW NW SW SEC. 12, T. 110 N., R. 48 W.

1.0 - 10.0 GRAVEL, BROWN, MEDIUM TO COARSE, SILTY,  
SANDY; MOIST, OXIDIZED, SATURATED AT 5  
FEET

\* \* \* \*

TEST HOLE NUMBER: 203  
LOCATION: 110N-48W-15ABAA  
LEGAL LOCATION: NE NE NW NE SEC. 15, T. 110 N., R. 48 W.

2.0 - 6.0 GRAVEL, BROWN, MEDIUM, SANDY; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 204  
LOCATION: 110N-48W-15BCBB  
LEGAL LOCATION: NW NW SW NW SEC. 15, T. 110 N., R. 48 W.

14.0 - 16.0 SAND, BROWN, MEDIUM, VERY SILTY, POORLY  
SORTED; DRY, OXIDIZED, SATURATED AT 15  
FEET  
19.0 - 22.0 SAND, BROWN, FINE, VERY SILTY, WELL  
SORTED; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 205  
LOCATION: 110N-48W-16CCBB  
LEGAL LOCATION: NW NW SW SW SEC. 16, T. 110 N., R. 48 W.

4.0 - 7.0 SAND, BROWN, MEDIUM, MODERATELY SORTED;

22.0 - 29.0 MOIST, OXIDIZED, SOME GRAVEL  
GRAVEL, BROWN, VERY COARSE; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 206  
LOCATION: 110N-48W-17ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 17, T. 110 N., R. 48 W.

5.0 - 17.0 SAND, BROWN, FINE TO MEDIUM, PEBBLY;  
MOIST, OXIDIZED, SATURATED AT 12 FEET

\* \* \* \*

TEST HOLE NUMBER: 207  
LOCATION: 110N-48W-17BCBB  
LEGAL LOCATION: NW NW SW NW SEC. 17, T. 110 N., R. 48 W.

4.0 - 5.0 SAND, BROWN, MEDIUM, CLAYEY, MODERATELY  
SORTED; MOIST, OXIDIZED  
10.0 - 16.0 SAND, BROWN, COARSE, MODERATELY SORTED;  
SATURATED, OXIDIZED  
16.0 - 25.0 GRAVEL, BROWN, MEDIUM, SANDY; SATURATED,  
OXIDIZED  
25.0 - 35.0 GRAVEL, BROWN, COARSE, SANDY; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 208  
LOCATION: 110N-48W-18DDDC  
LEGAL LOCATION: SW SE SE SE SEC. 18, T. 110 N., R. 48 W.

1.0 - 6.0 SAND, BROWN, FINE; DRY, OXIDIZED  
8.0 - 17.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 209  
LOCATION: 110N-48W-20BBCC  
LEGAL LOCATION: SW SW NW NW SEC. 20, T. 110 N., R. 48 W.

1.0 - 2.0 SAND, BROWN, MEDIUM TO COARSE, POORLY  
SORTED; DRY, OXIDIZED  
2.0 - 11.0 GRAVEL, BROWN, MEDIUM TO VERY COARSE,  
POORLY SORTED; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 210  
LOCATION: 110N-48W-20CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 20, T. 110 N., R. 48 W.

18.0 - 80.0 SAND AND GRAVEL, BROWN-YELLOW TO 68 FEET,  
GRAY, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 211  
LOCATION: 110N-48W-25DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 25, T. 110 N., R. 48 W.

1.0 - 6.0 GRAVEL, BROWN, MEDIUM, VERY SILTY, SANDY;  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 212  
LOCATION: 110N-48W-26CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 26, T. 110 N., R. 48 W.

0 - 17.0 SAND AND GRAVEL, BROWN; GRADES FROM A  
MEDIUM SAND TO COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 213  
LOCATION: 110N-48W-27ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 27, T. 110 N., R. 48 W.

4.0 - 5.0 SAND, BROWN, FINE; MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 214  
LOCATION: 110N-48W-27BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 27, T. 110 N., R. 48 W.

1.0 - 31.0 SAND AND GRAVEL, BROWN; GRADES FROM A  
MEDIUM SAND TO A COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 215  
LOCATION: 110N-48W-27CCBC  
LEGAL LOCATION: SW NW SW SW SEC. 27, T. 110 N., R. 48 W.

2.0 - 43.0 SAND AND GRAVEL, BROWN; GRADES FROM A  
MEDIUM SAND TO A COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 216  
LOCATION: 110N-48W-27DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 27, T. 110 N., R. 48 W.

3.0 - 6.0 SAND, BROWN, MEDIUM TO COARSE, MODERATELY

6.0 - 11.0 SORTED; DRY, OXIDIZED  
GRAVEL, BROWN, COARSE, SANDY, MODERATELY  
SORTED; DRY, OXIDIZED  
11.0 - 12.0 GRAVEL, REDDISH-BROWN, VERY COARSE; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 217  
LOCATION: 110N-48W-28ADAA  
LEGAL LOCATION: NE NE SE NE SEC. 28, T. 110 N., R. 48 W.

5.0 - 7.0 SAND, BROWN, COARSE; SATURATED, OXIDIZED  
7.0 - 9.0 GRAVEL, BROWN, MEDIUM, SANDY, POORLY  
SORTED; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 218  
LOCATION: 110N-48W-28CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 28, T. 110 N., R. 48 W.

1.0 - 44.0 SAND AND GRAVEL, BROWN; GRADES FROM A  
MEDIUM SAND TO A COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 219  
LOCATION: 110N-48W-28CCCC 1  
LEGAL LOCATION: SW SW SW SW SEC. 28, T. 110 N., R. 48 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

3.0 - 48.0 SAND AND GRAVEL, FINE SAND TO MEDIUM  
PEBBLES; SOME LENSES OF REWORKED TILL,  
BASED ON E-LOG, BUT NONE REPORTED OR  
SEEN

\* \* \* \*

TEST HOLE NUMBER: 220  
LOCATION: 110N-48W-28DDDA  
LEGAL LOCATION: NE SE SE SE SEC. 28, T. 110 N., R. 48 W.

2.0 - 6.0 GRAVEL, REDDISH-BROWN, MEDIUM, VERY  
SANDY; MOIST, OXIDIZED  
6.0 - 11.0 SAND, BROWN, COARSE, GRAVELLY; SATURATED,  
OXIDIZED  
11.0 - 32.0 GRAVEL, BROWN, MEDIUM, SANDY; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 221  
LOCATION: 110N-48W-29CBBB

LEGAL LOCATION: NW NW NW SW SEC. 29, T. 110 N., R. 48 W.

4.0 -	6.0	SAND, REDDISH-BROWN, FINE, CLAYEY; MOIST, OXIDIZED
10.0 -	13.0	SAND, BROWN, MEDIUM, VERY CLAYEY, GRAVELLY; SATURATED, OXIDIZED
13.0 -	25.0	GRAVEL, BROWN, MEDIUM, SANDY; SATURATED, OXIDIZED
25.0 -	54.0	GRAVEL, GRAY, MEDIUM TO COARSE, SANDY; SATURATED, UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 222

LOCATION: 110N-48W-29DADA

LEGAL LOCATION: NE SE NE SE SEC. 29, T. 110 N., R. 48 W.

4.0 -	7.0	SAND, BROWN, MEDIUM TO COARSE, SILTY, MODERATELY SORTED; SATURATED, OXIDIZED
20.0 -	21.0	GRAVEL, DARK-BROWN, COARSE; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 223

LOCATION: 110N-48W-31AADA

LEGAL LOCATION: NE SE NE NE SEC. 31, T. 110 N., R. 48 W.

4.0 -	6.0	SAND, BROWN, FINE, CLAYEY; MOIST, OXIDIZED
9.0 -	25.0	SAND, BROWN, MEDIUM TO COARSE, SILTY; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 224

LOCATION: 110N-48W-31BBBB

LEGAL LOCATION: NW NW NW NW SEC. 31, T. 110 N., R. 48 W.

1.0 -	9.0	SAND AND GRAVEL, BROWN, MEDIUM TO COARSE
15.0 -	45.0	SAND AND GRAVEL, BROWN TO GRAY, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 225

LOCATION: 110N-48W-32DDAD

LEGAL LOCATION: SE NE SE SE SEC. 32, T. 110 N., R. 48 W.

1.0 -	2.0	SAND, BROWN, FINE, SILTY; MOIST, OXIDIZED
11.0 -	17.0	GRAVEL, BROWN, MEDIUM TO COARSE, SANDY, POORLY SORTED; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 226  
LOCATION: 110N-48W-33AADD  
LEGAL LOCATION: SE SE NE NE SEC. 33, T. 110 N., R. 48 W.

1.0 - 32.0 SAND AND GRAVEL, BROWN; GRADES FROM A  
MEDIUM SAND TO A COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 227  
LOCATION: 110N-48W-33ABBA  
LEGAL LOCATION: NE NW NW NE SEC. 33, T. 110 N., R. 48 W.

0 - 8.0 SAND, VERY SILTY; LITTLE CLAY (LOAM)  
8.0 - 40.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 228  
LOCATION: 110N-48W-33ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 33, T. 110 N., R. 48 W.

5.0 - 16.0 GRAVEL, BROWN, MEDIUM, VERY SILTY, SANDY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 229  
LOCATION: 110N-48W-33BCCB  
LEGAL LOCATION: NW SW SW NW SEC. 33, T. 110 N., R. 48 W.

4.0 - 7.0 SAND, BROWN, COARSE, CLAYEY; SATURATED,  
OXIDIZED, SOME GRAVEL  
7.0 - 12.0 GRAVEL, BROWN, MEDIUM; SATURATED,  
OXIDIZED, CLEAN

\* \* \* \*

TEST HOLE NUMBER: 230  
LOCATION: 110N-48W-33DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 33, T. 110 N., R. 48 W.

0 - 6.0 GRAVEL, BROWN, COARSE, POORLY SORTED;  
DRY, OXIDIZED, SATURATED AT 2 FEET

\* \* \* \*

TEST HOLE NUMBER: 231  
LOCATION: 110N-48W-34ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 34, T. 110 N., R. 48 W.

3.0 - 45.0 SAND AND GRAVEL, BROWN; GRADES FROM A  
MEDIUM SAND TO A COARSE GRAVEL



\* \* \* \*

TEST HOLE NUMBER: 232  
LOCATION: 110N-48W-34DAAA  
LEGAL LOCATION: NE NE NE SE SEC. 34, T. 110 N., R. 48 W.

5.0 - 19.0 GRAVEL, BROWN, MEDIUM TO COARSE, VERY  
SANDY, CLAYEY; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 233  
LOCATION: 110N-48W-34DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 34, T. 110 N., R. 48 W.

5.0 - 25.0 GRAVEL, BROWN, MEDIUM, SANDY; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 234  
LOCATION: 110N-48W-35BCCB  
LEGAL LOCATION: NW SW SW NW SEC. 35, T. 110 N., R. 48 W.

1.0 - 42.0 SAND AND GRAVEL, BROWN; GRADES FROM A  
MEDIUM SAND TO A COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 235  
LOCATION: 110N-48W-35CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 35, T. 110 N., R. 48 W.

0 - 9.0 SAND AND GRAVEL, BROWN; MEDIUM SAND TO A  
COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 236  
LOCATION: 110N-48W-35DAAA  
LEGAL LOCATION: NE NE NE SE SEC. 35, T. 110 N., R. 48 W.

2.0 - 4.0 SAND, BROWN, COARSE, PEBBLY; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 237  
LOCATION: 110N-48W-35DCCC 1  
LEGAL LOCATION: SW SW SW SE SEC. 35, T. 110 N., R. 48 W.

9.0 - 29.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 238  
LOCATION: 110N-48W-35DCCC 2  
LEGAL LOCATION: SW SW SW SE SEC. 35, T. 110 N., R. 48 W.

0 - 29.0 SAND AND GRAVEL, BROWN; GRADES FROM A  
MEDIUM SAND TO A COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 239  
LOCATION: 110N-48W-35DDDA  
LEGAL LOCATION: NE SE SE SE SEC. 35, T. 110 N., R. 48 W.

4.0 - 24.0 GRAVEL, BROWN, COARSE, SANDY; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 240  
LOCATION: 110N-48W-36CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 36, T. 110 N., R. 48 W.

1.0 - 30.0 SAND AND GRAVEL, BROWN; GRADES FROM A  
MEDIUM SAND TO A COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 241  
LOCATION: 110N-49W-01AABA  
LEGAL LOCATION: NE NW NE NE SEC. 01, T. 110 N., R. 49 W.

5.0 - 51.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 242  
LOCATION: 110N-49W-01BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 01, T. 110 N., R. 49 W.

2.0 - 10.0 SAND, BROWN, FINE TO MEDIUM; DRY,  
OXIDIZED, SOME GRAVEL  
10.0 - 21.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 243  
LOCATION: 110N-49W-01CCBC  
LEGAL LOCATION: SW NW SW SW SEC. 01, T. 110 N., R. 49 W.

1.0 - 17.0 SAND, BROWN, VERY FINE, SILTY; DRY,

OXIDIZED  
17.0 - 42.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED, SATURATED AT 31 FEET

\* \* \* \*

TEST HOLE NUMBER: 244  
LOCATION: 110N-49W-01CDCD  
LEGAL LOCATION: SE SW SE SW SEC. 01, T. 110 N., R. 49 W.

0 - 2.0 SAND, BROWN, FINE; DRY, OXIDIZED, SOME  
GRAVEL  
2.0 - 25.0 GRAVEL, BROWN, MEDIUM, VERY SANDY; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 245  
LOCATION: 110N-49W-01DAAA  
LEGAL LOCATION: NE NE NE SE SEC. 01, T. 110 N., R. 49 W.

0 - 6.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED  
6.0 - 20.0 SAND, BROWN, MEDIUM TO COARSE, GRAVELLY;  
DRY, OXIDIZED  
20.0 - 24.0 GRAVEL, BROWN, COARSE TO VERY COARSE,  
SANDY; DRY, OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 246  
LOCATION: 110N-49W-01DDDC  
LEGAL LOCATION: SW SE SE SE SEC. 01, T. 110 N., R. 49 W.

6.0 - 55.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED, SATURATED AT 40 FEET

\* \* \* \*

TEST HOLE NUMBER: 247  
LOCATION: 110N-49W-02ABBA  
LEGAL LOCATION: NE NW NW NE SEC. 02, T. 110 N., R. 49 W.

2.0 - 15.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED, SATURATED AT 9 FEET

\* \* \* \*

TEST HOLE NUMBER: 248  
LOCATION: 110N-49W-05ABAA  
LEGAL LOCATION: NE NE NW NE SEC. 05, T. 110 N., R. 49 W.

4.0 - 10.0 SAND, COARSE; SOME GRAVEL  
10.0 - 67.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 249  
LOCATION: 110N-49W-05ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 05, T. 110 N., R. 49 W.

4.0 - 34.0 SAND AND GRAVEL, COARSE SAND TO COARSE  
GRAVEL, ANGULAR

\* \* \* \*

TEST HOLE NUMBER: 250  
LOCATION: 110N-49W-05DCCC  
LEGAL LOCATION: SW SW SW SE SEC. 05, T. 110 N., R. 49 W.

6.0 - 9.0 SAND AND GRAVEL  
9.0 - 13.0 GRAVEL; SOME SAND

\* \* \* \*

TEST HOLE NUMBER: 251  
LOCATION: 110N-49W-06DAAA  
LEGAL LOCATION: NE NE NE SE SEC. 06, T. 110 N., R. 49 W.

8.0 - 11.0 SAND, COARSE; SOME GRAVEL  
11.0 - 16.0 SAND, FINE TO COARSE; SOME CLAY  
20.0 - 81.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 252  
LOCATION: 110N-49W-06DDCC  
LEGAL LOCATION: SW SW SE SE SEC. 06, T. 110 N., R. 49 W.

0 - 5.0 SAND, BROWN, FINE, SILTY  
5.0 - 15.0 GRAVEL AND SAND  
15.0 - 72.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 253  
LOCATION: 110N-49W-07AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 07, T. 110 N., R. 49 W.

6.0 - 52.0 SAND AND GRAVEL, WELL-ROUNDED

\* \* \* \*

TEST HOLE NUMBER: 254  
LOCATION: 110N-49W-07AAAA 1  
LEGAL LOCATION: NE NE NE NE SEC. 07, T. 110 N., R. 49 W.

1.0 - 3.0 SAND  
3.0 - 47.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 255  
LOCATION: 110N-49W-07ACCC  
LEGAL LOCATION: SW SW SW NE SEC. 07, T. 110 N., R. 49 W.

1.0 -	5.0	SAND, FINE, SILTY
5.0 -	8.0	SAND AND GRAVEL
8.0 -	51.0	GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 256  
LOCATION: 110N-49W-07CBBB  
LEGAL LOCATION: NW NW NW SW SEC. 07, T. 110 N., R. 49 W.

5.0 -	10.0	SAND AND GRAVEL
10.0 -	17.0	SAND AND GRAVEL, UNSORTED

\* \* \* \*

TEST HOLE NUMBER: 257  
LOCATION: 110N-49W-09DCCC  
LEGAL LOCATION: SW SW SW SE SEC. 09, T. 110 N., R. 49 W.

2.0 -	21.0	SAND AND GRAVEL
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\* \* \* \*

TEST HOLE NUMBER: 258  
LOCATION: 110N-49W-10ADAA  
LEGAL LOCATION: NE NE SE NE SEC. 10, T. 110 N., R. 49 W.

5.0 -	11.0	SAND, BROWN
11.0 -	21.0	SAND AND GRAVEL
21.0 -	41.0	SAND, COARSE, WELL-SORTED; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 259  
LOCATION: 110N-49W-11CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 11, T. 110 N., R. 49 W.

4.0 -	28.0	SAND AND GRAVEL, WELL-ROUNDED
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\* \* \* \*

TEST HOLE NUMBER: 260  
LOCATION: 110N-49W-11DCCC  
LEGAL LOCATION: SW SW SW SE SEC. 11, T. 110 N., R. 49 W.

6.0 -	8.0	SAND AND GRAVEL
8.0 -	38.0	GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 261  
LOCATION: 110N-49W-12BBCB  
LEGAL LOCATION: NW SW NW NW SEC. 12, T. 110 N., R. 49 W.

6.0 - 10.0 SAND, LIGHT-BROWN, MEDIUM TO COARSE,  
SILTY, PEBBLY; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 262  
LOCATION: 110N-49W-13BCBC  
LEGAL LOCATION: SW NW SW NW SEC. 13, T. 110 N., R. 49 W.

5.0 - 32.0 SAND, BROWN, VERY FINE, CLAYEY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 263  
LOCATION: 110N-49W-13DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 13, T. 110 N., R. 49 W.

1.0 - 4.0 SAND, BROWN, VERY FINE, SILTY; DRY,  
OXIDIZED  
6.0 - 11.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
MOIST, OXIDIZED  
16.0 - 22.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
MOIST, OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 264  
LOCATION: 110N-49W-14BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 14, T. 110 N., R. 49 W.

3.0 - 8.0 SAND AND GRAVEL  
8.0 - 23.0 GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 265  
LOCATION: 110N-49W-14DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 14, T. 110 N., R. 49 W.

0 - 37.0 GRAVEL, SANDY, POORLY SORTED, SUBANGULAR

\* \* \* \*

TEST HOLE NUMBER: 266  
LOCATION: 110N-49W-15ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 15, T. 110 N., R. 49 W.

1.0 - 5.0 SAND, SILTY  
5.0 - 24.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 267  
LOCATION: 110N-49W-15BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 15, T. 110 N., R. 49 W.

4.0 - 10.0 SAND AND GRAVEL, BROWN, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 268  
LOCATION: 110N-49W-15DCCC  
LEGAL LOCATION: SW SW SW SE SEC. 15, T. 110 N., R. 49 W.

1.0 - 6.0 SAND, FINE  
6.0 - 40.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 269  
LOCATION: 110N-49W-15DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 15, T. 110 N., R. 49 W.

0 - 11.0 SAND  
11.0 - 35.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 270  
LOCATION: 110N-49W-16CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 16, T. 110 N., R. 49 W.

0 - 7.0 SAND AND GRAVEL  
7.0 - 18.0 GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 271  
LOCATION: 110N-49W-18BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 18, T. 110 N., R. 49 W.

1.0 - 7.0 SAND  
7.0 - 57.0 GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 272  
LOCATION: 110N-49W-20AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 20, T. 110 N., R. 49 W.

2.0 - 18.0 SAND AND GRAVEL, VERY COARSE

\* \* \* \*

TEST HOLE NUMBER: 273  
LOCATION: 110N-49W-20AAAA 1  
LEGAL LOCATION: NE NE NE NE SEC. 20, T. 110 N., R. 49 W.

5.0 - 16.0 SAND, COARSE; SOME GRAVEL  
16.0 - 21.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 274  
LOCATION: 110N-49W-21CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 21, T. 110 N., R. 49 W.

3.0 - 14.0 SAND AND GRAVEL  
14.0 - 52.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 275  
LOCATION: 110N-49W-21DCCC  
LEGAL LOCATION: SW SW SW SE SEC. 21, T. 110 N., R. 49 W.

4.0 - 50.0 GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 276  
LOCATION: 110N-49W-21DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 21, T. 110 N., R. 49 W.

2.0 - 29.0 SAND; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 277  
LOCATION: 110N-49W-22AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 22, T. 110 N., R. 49 W.

2.0 - 35.0 SAND AND GRAVEL, FINE SAND TO COARSE  
GRAVEL; WELL ROUNDED

\* \* \* \*

TEST HOLE NUMBER: 278  
LOCATION: 110N-49W-25CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 25, T. 110 N., R. 49 W.

0 - 22.0 SAND AND GRAVEL  
22.0 - 24.0 SAND AND GRAVEL, DARK-GRAY

\* \* \* \*



TEST HOLE NUMBER: 279  
LOCATION: 110N-49W-26AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 26, T. 110 N., R. 49 W.

0 - 11.0 SAND AND GRAVEL; COULD NOT PENETRATE

\* \* \* \*

TEST HOLE NUMBER: 280  
LOCATION: 110N-49W-26CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 26, T. 110 N., R. 49 W.

6.0 - 58.0 GRAVEL, COARSE

\* \* \* \*

TEST HOLE NUMBER: 281  
LOCATION: 110N-49W-26DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 26, T. 110 N., R. 49 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

7.0 - 36.0 SAND AND GRAVEL; FINE SAND TO COARSE  
PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 282  
LOCATION: 110N-49W-27AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 27, T. 110 N., R. 49 W.

7.0 - 16.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 283  
LOCATION: 110N-49W-28ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 28, T. 110 N., R. 49 W.

1.0 - 21.0 SAND, FINE TO COARSE; SOME GRAVEL  
21.0 - 48.0 GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 284  
LOCATION: 110N-49W-28DCCC  
LEGAL LOCATION: SW SW SW SE SEC. 28, T. 110 N., R. 49 W.

0 - 13.0 SAND AND GRAVEL  
13.0 - 34.0 GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 285  
LOCATION: 110N-49W-29AAAA

LEGAL LOCATION: NE NE NE NE SEC. 29, T. 110 N., R. 49 W.

1.0 - 18.0 SAND AND GRAVEL; OXIDIZED  
18.0 - 28.0 SAND, FINE, SILTY

\* \* \* \*

TEST HOLE NUMBER: 286

LOCATION: 110N-49W-29ADDD

LEGAL LOCATION: SE SE SE NE SEC. 29, T. 110 N., R. 49 W.

8.0 - 24.0 SAND AND GRAVEL  
24.0 - 44.0 SAND AND GRAVEL; FINE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 287

LOCATION: 110N-49W-29BAAA

LEGAL LOCATION: NE NE NE NW SEC. 29, T. 110 N., R. 49 W.

1.0 - 6.0 SAND, CLAYEY, SILTY  
6.0 - 26.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 288

LOCATION: 110N-49W-29DCCC

LEGAL LOCATION: SW SW SW SE SEC. 29, T. 110 N., R. 49 W.

10.0 - 20.0 SAND AND GRAVEL  
20.0 - 24.0 GRAVEL AND SAND  
24.0 - 57.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 289

LOCATION: 110N-49W-30DDDD

LEGAL LOCATION: SE SE SE SE SEC. 30, T. 110 N., R. 49 W.

1.0 - 6.0 SAND AND GRAVEL  
6.0 - 17.0 GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 290

LOCATION: 110N-49W-31DCCC

LEGAL LOCATION: SW SW SW SE SEC. 31, T. 110 N., R. 49 W.

0 - 4.0 SAND, FINE TO COARSE  
4.0 - 18.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 291

LOCATION: 110N-49W-32AAAA

LEGAL LOCATION: NE NE NE NE SEC. 32, T. 110 N., R. 49 W.

8.0 - 14.0 SAND; SOME GRAVEL  
14.0 - 29.0 GRAVEL, SORTED

\* \* \* \*

TEST HOLE NUMBER: 292

LOCATION: 110N-49W-32AAB

LEGAL LOCATION: NW NE NE SEC. 32, T. 110 N., R. 49 W.

PRELIMINARY LOG -- SUBJECT TO CHANGE

4.0 - 20.0 SAND AND GRAVEL; MOSTLY COARSE PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 293

LOCATION: 110N-49W-32AABB

LEGAL LOCATION: NW NW NE NE SEC. 32, T. 110 N., R. 49 W.

8.0 - 24.0 SAND AND GRAVEL  
24.0 - 50.0 SAND, COARSE; SOME FINE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 294

LOCATION: 110N-49W-32AACC

LEGAL LOCATION: SW SW NE NE SEC. 32, T. 110 N., R. 49 W.

7.0 - 16.0 SAND, COARSE  
16.0 - 19.0 GRAVEL AND SAND  
19.0 - 57.0 SAND; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 295

LOCATION: 110N-49W-32BCCC

LEGAL LOCATION: SW SW SW NW SEC. 32, T. 110 N., R. 49 W.

0 - 20.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 296

LOCATION: 110N-49W-32BDDB

LEGAL LOCATION: NE SE SE NW SEC. 32, T. 110 N., R. 49 W.

7.0 - 46.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 297

LOCATION: 110N-49W-32DCCC

LEGAL LOCATION: SW SW SW SE SEC. 32, T. 110 N., R. 49 W.

4.0 -	8.0	SAND AND GRAVEL; SOME BOULDERS
8.0 -	16.0	GRAVEL; SOME BOULDERS
16.0 -	57.0	SAND AND GRAVEL, NOT TOO COARSE

\* \* \* \*

TEST HOLE NUMBER: 298

LOCATION: 110N-49W-33AAAA

LEGAL LOCATION: NE NE NE NE SEC. 33, T. 110 N., R. 49 W.

0 -	18.0	SAND, VERY COARSE; SOME GRAVEL
18.0 -	71.0	SAND, VERY COARSE, PEBBLY

\* \* \* \*

TEST HOLE NUMBER: 299

LOCATION: 110N-49W-33CCCC

LEGAL LOCATION: SW SW SW SW SEC. 33, T. 110 N., R. 49 W.

1.0 -	20.0	SAND AND GRAVEL, COARSE
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\* \* \* \*

TEST HOLE NUMBER: 300

LOCATION: 110N-49W-34AAAA

LEGAL LOCATION: NE NE NE NE SEC. 34, T. 110 N., R. 49 W.

0 -	17.0	SAND, COARSE; SOME GRAVEL
17.0 -	54.0	SAND, VERY COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 301

LOCATION: 110N-49W-34BBBB

LEGAL LOCATION: NW NW NW SW SEC. 34, T. 110 N., R. 49 W.

1.0 -	6.0	SAND, FINE TO COARSE
6.0 -	16.0	SAND AND GRAVEL
16.0 -	44.0	SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 302

LOCATION: 110N-49W-34CCCC

LEGAL LOCATION: SW SW SW SW SEC. 34, T. 110 N., R. 49 W.

5.0 -	9.0	SAND AND GRAVEL
9.0 -	19.0	SAND; SOME GRAVEL
19.0 -	53.0	SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 303  
LOCATION: 110N-49W-35BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 35, T. 110 N., R. 49 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

3.0 - 48.0 SAND AND GRAVEL, COARSE SAND TO VERY  
COARSE PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 304  
LOCATION: 110N-49W-35DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 35, T. 110 N., R. 49 W.

1.0 - 13.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 305  
LOCATION: 110N-49W-36DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 36, T. 110 N., R. 49 W.

4.0 - 45.0 SAND AND GRAVEL, BROWN, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 306  
LOCATION: 110N-50W-03DDDA  
LEGAL LOCATION: NE SE SE SE SEC. 03, T. 110 N., R. 50 W.

5.0 - 9.0 GRAVEL, BROWN, MEDIUM, VERY CLAYEY,  
SANDY; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 307  
LOCATION: 110N-50W-05BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 05, T. 110 N., R. 50 W.

1.0 - 14.0 SAND AND GRAVEL; FINE SAND

\* \* \* \*

TEST HOLE NUMBER: 308  
LOCATION: 110N-50W-05CBCB  
LEGAL LOCATION: NW SW NW SW SEC. 05, T. 110 N., R. 50 W.

1.0 - 10.0 SAND, YELLOW-BROWN, MEDIUM  
10.0 - 20.0 SAND, BLUE-GRAY, MEDIUM TO COARSE  
20.0 - 30.0 SAND, BLUE-GRAY, COARSE

\* \* \* \*

TEST HOLE NUMBER: 309

LOCATION: 110N-50W-07DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 07, T. 110 N., R. 50 W.

3.0 - 22.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 310  
LOCATION: 110N-50W-09DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 09, T. 110 N., R. 50 W.

5.0 - 10.0 GRAVEL, BROWN, MEDIUM, SILTY, SANDY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 311  
LOCATION: 110N-50W-10CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 10, T. 110 N., R. 50 W.

0 - 6.0 SAND AND GRAVEL  
6.0 - 27.0 GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 312  
LOCATION: 110N-50W-12AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 12, T. 110 N., R. 50 W.

4.0 - 11.0 SAND, BROWN, FINE, SILTY, POORLY SORTED;  
MOIST, OXIDIZED, SATURATED AT 6 FEET

\* \* \* \*

TEST HOLE NUMBER: 313  
LOCATION: 110N-50W-13ABAB  
LEGAL LOCATION: NW NE NW NE SEC. 13, T. 110 N., R. 50 W.

8.0 - 30.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 314  
LOCATION: 110N-50W-13ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 13, T. 110 N., R. 50 W.

6.0 - 10.0 SAND  
10.0 - 13.0 SAND; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 315  
LOCATION: 110N-50W-13CBAB  
LEGAL LOCATION: NW NE NW SW SEC. 13, T. 110 N., R. 50 W.

9.0 - 25.0 SAND, COARSE  
25.0 - 71.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 316  
LOCATION: 110N-50W-13CBBC  
LEGAL LOCATION: SW NW NW SW SEC. 13, T. 110 N., R. 50 W.

13.0 - 15.0 SAND, BROWN  
15.0 - 64.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 317  
LOCATION: 110N-50W-14ACCC  
LEGAL LOCATION: SW SW SW NE SEC. 14, T. 110 N., R. 50 W.

6.0 - 9.0 SAND AND GRAVEL  
9.0 - 17.0 GRAVEL AND SAND  
17.0 - 37.0 SAND AND GRAVEL, CLAYEY

\* \* \* \*

TEST HOLE NUMBER: 318  
LOCATION: 110N-50W-14CCCD  
LEGAL LOCATION: SE SW SW SW SEC. 14, T. 110 N., R. 50 W.

5.0 - 8.0 SAND; SOME GRAVEL  
8.0 - 13.0 SAND AND GRAVEL  
19.0 - 63.0 SAND, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 319  
LOCATION: 110N-50W-15AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 15, T. 110 N., R. 50 W.

3.0 - 10.0 SAND, BROWN, FINE TO MEDIUM, VERY CLAYEY,  
SILTY; MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 320  
LOCATION: 110N-50W-16CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 16, T. 110 N., R. 50 W.

1.0 - 18.0 SAND AND GRAVEL, FINE TO MEDIUM

\* \* \* \*

TEST HOLE NUMBER: 321  
LOCATION: 110N-50W-17BAAA  
LEGAL LOCATION: NE NE NE NW SEC. 17, T. 110 N., R. 50 W.

0 - 2.0 SAND, FINE  
2.0 - 6.0 SAND AND GRAVEL  
6.0 - 15.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 322  
LOCATION: 110N-50W-17CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 17, T. 110 N., R. 50 W.

1.0 - 3.0 SAND  
3.0 - 40.0 GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 323  
LOCATION: 110N-50W-17CCCD  
LEGAL LOCATION: SE SW SW SW SEC. 17, T. 110 N., R. 50 W.

1.0 - 7.0 SAND  
7.0 - 16.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 324  
LOCATION: 110N-50W-17DAAA  
LEGAL LOCATION: NE NE NE SE SEC. 17, T. 110 N., R. 50 W.

3.0 - 6.0 SAND; SOME GRAVEL  
6.0 - 17.0 GRAVEL AND SAND

\* \* \* \*

TEST HOLE NUMBER: 325  
LOCATION: 110N-50W-18BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 18, T. 110 N., R. 50 W.

1.0 - 24.0 SAND AND GRAVEL, COARSER TOWARDS BOTTOM

\* \* \* \*

TEST HOLE NUMBER: 326  
LOCATION: 110N-50W-18BBBB 1  
LEGAL LOCATION: NW NW NW NW SEC. 18, T. 110 N., R. 50 W.

1.0 - 4.0 SAND AND GRAVEL  
4.0 - 25.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 327  
LOCATION: 110N-50W-18DCBB  
LEGAL LOCATION: NW NW SW SE SEC. 18, T. 110 N., R. 50 W.



4.0 - 18.0 GRAVEL, FINE  
23.0 - 34.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 328  
LOCATION: 110N-50W-19CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 19, T. 110 N., R. 50 W.

1.0 - 3.0 SAND  
3.0 - 7.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 329  
LOCATION: 110N-50W-20DDDA  
LEGAL LOCATION: NE SE SE SE SEC. 20, T. 110 N., R. 50 W.

2.0 - 30.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 330  
LOCATION: 110N-50W-20DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 20, T. 110 N., R. 50 W.

7.0 - 48.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 331  
LOCATION: 110N-50W-21BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 21, T. 110 N., R. 50 W.

10.0 - 17.0 SAND, FINE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 332  
LOCATION: 110N-50W-21CCBB  
LEGAL LOCATION: NW NW SW SW SEC. 21, T. 110 N., R. 50 W.

0 - 16.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 333  
LOCATION: 110N-50W-22ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 22, T. 110 N., R. 50 W.

10.0 - 16.0 SAND, GRAY, FINE

\* \* \* \*

TEST HOLE NUMBER: 334  
LOCATION: 110N-50W-22BDAD  
LEGAL LOCATION: SE NE SE NW SEC. 22, T. 110 N., R. 50 W.

7.0 - 17.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 335  
LOCATION: 110N-50W-22CBBB  
LEGAL LOCATION: NW NW NW SW SEC. 22, T. 110 N., R. 50 W.

1.0 - 5.0 SAND, FINE  
5.0 - 10.0 SAND AND GRAVEL; SOME BOULDERS  
10.0 - 33.0 SAND, FINE TO COARSE, POORLY SORTED

\* \* \* \*

TEST HOLE NUMBER: 336  
LOCATION: 110N-50W-22CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 22, T. 110 N., R. 50 W.

4.0 - 12.0 SAND, FINE TO MEDIUM; WITH SOME YELLOW  
CLAY  
12.0 - 45.0 SAND, FINE TO MEDIUM; GOOD, SOME CLAY AT  
30 FEET WITH MEDIUM GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 337  
LOCATION: 110N-50W-22CDGD  
LEGAL LOCATION: SE SW SE SW SEC. 22, T. 110 N., R. 50 W.

3.0 - 9.0 SAND, LIGHT-BROWN TO DARK-BROWN, FINE TO  
COARSE  
9.0 - 16.0 SAND AND GRAVEL, BROWN  
16.0 - 19.0 SAND AND GRAVEL, GRAY

\* \* \* \*

TEST HOLE NUMBER: 338  
LOCATION: 110N-50W-28AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 28, T. 110 N., R. 50 W.

7.0 - 23.0 SAND, FINE TO COARSE; SOME GRAVEL  
23.0 - 29.0 SAND, FINE, WELL-SORTED

\* \* \* \*

TEST HOLE NUMBER: 339  
LOCATION: 110N-50W-28BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 28, T. 110 N., R. 50 W.

6.0 - 8.0 SAND, COARSE

8.0 - 24.0 SAND AND GRAVEL  
24.0 - 32.0 SAND, COARSE, WELL-SORTED

\* \* \* \*

TEST HOLE NUMBER: 340  
LOCATION: 110N-50W-28DAAA  
LEGAL LOCATION: NE NE NE SE SEC. 28, T. 110 N., R. 50 W.

4.0 - 21.0 SAND, BROWN, FINE TO MEDIUM; MOIST,  
OXIDIZED, SATURATED AT 10 FEET

\* \* \* \*

TEST HOLE NUMBER: 341  
LOCATION: 110N-50W-29ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 29, T. 110 N., R. 50 W.

3.0 - 6.0 SAND AND GRAVEL, COARSE  
6.0 - 12.0 SAND, COARSE; SOME FINE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 342  
LOCATION: 110N-50W-30ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 30, T. 110 N., R. 50 W.

6.0 - 11.0 SAND, COARSE  
11.0 - 16.0 SAND, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 343  
LOCATION: 110N-50W-31CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 31, T. 110 N., R. 50 W.

0 - 14.0 SAND, REDDISH-BROWN, FINE, WELL SORTED;  
DRY, OXIDIZED, SATURATED AT 7 FEET  
14.0 - 19.0 GRAVEL, DARK-BROWN, FINE, MODERATELY  
SORTED; SATURATED, OXIDIZED  
19.0 - 28.0 SAND, GRAY, FINE, WELL SORTED; SATURATED,  
UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 344  
LOCATION: 110N-50W-32AABB  
LEGAL LOCATION: NW NW NE NE SEC. 32, T. 110 N., R. 50 W.

3.0 - 10.0 SAND, FINE; SOME CLAY  
10.0 - 24.0 SAND, FINE TO COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 345  
LOCATION: 110N-50W-33BAAA  
LEGAL LOCATION: NE NE NE NW SEC. 33, T. 110 N., R. 50 W.

3.0 - 6.0 SAND, COARSE  
6.0 - 17.0 SAND, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 346  
LOCATION: 110N-50W-33CCCD  
LEGAL LOCATION: SE SW SW SW SEC. 33, T. 110 N., R. 50 W.

10.0 - 22.0 SAND, FINE TO COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 347  
LOCATION: 110N-50W-33DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 33, T. 110 N., R. 50 W.

0 - 6.0 SAND AND GRAVEL  
6.0 - 9.0 SAND, FINE TO COARSE; SOME GRAVEL  
9.0 - 17.0 SAND, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 348  
LOCATION: 110N-51W-01DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 01, T. 110 N., R. 51 W.

2.0 - 8.0 SAND AND GRAVEL, BROWN, GRADING TO  
GRAYISH-BROWN  
8.0 - 17.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 349  
LOCATION: 110N-51W-02CDDC  
LEGAL LOCATION: SW SE SE SW SEC. 02, T. 110 N., R. 51 W.

3.0 - 17.0 SAND, MEDIUM TO COARSE; SOME GRAVEL, SOME  
CLAY  
17.0 - 21.0 SAND, LIGHT-BROWN, MEDIUM TO COARSE; SOME  
CLAY  
21.0 - 35.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 350  
LOCATION: 110N-51W-03AAAB  
LEGAL LOCATION: NW NE NE NE SEC. 03, T. 110 N., R. 51 W.

1.0 - 2.0 GRAVEL, BROWN, COARSE, POORLY SORTED;

DRY, OXIDIZED  
 2.0 - 5.0 SAND, REDDISH-BROWN, FINE, WELL SORTED;  
 DRY, OXIDIZED  
 5.0 - 14.0 GRAVEL, BROWN, COARSE, POORLY SORTED;  
 DRY, OXIDIZED  
 14.0 - 15.0 GRAVEL, BLACK, MEDIUM, SILTY, POORLY  
 SORTED; MOIST  
 15.0 - 18.0 SAND, REDDISH-BROWN, MEDIUM, MODERATELY  
 SORTED; SATURATED, OXIDIZED  
 18.0 - 19.0 GRAVEL, BROWN, VERY COARSE; SATURATED,  
 OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 351  
 LOCATION: 110N-51W-03BBBC  
 LEGAL LOCATION: SW NW NW NW SEC. 03, T. 110 N., R. 51 W.

1.0 - 4.0 GRAVEL, BROWN, MEDIUM, CLAYEY, SANDY,  
 POORLY SORTED; DRY, OXIDIZED  
 4.0 - 20.0 GRAVEL, REDDISH-BROWN, COARSE, SANDY,  
 POORLY SORTED; MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 352  
 LOCATION: 110N-51W-04CCCC  
 LEGAL LOCATION: SW SW SW SW SEC. 04, T. 110 N., R. 51 W.

4.0 - 25.0 SAND, BROWN, MEDIUM, SILTY; DRY,  
 OXIDIZED, SATURATED AT 14 FEET

\* \* \* \*

TEST HOLE NUMBER: 353  
 LOCATION: 110N-51W-06DADA  
 LEGAL LOCATION: NE SE NE SE SEC. 06, T. 110 N., R. 51 W.

1.0 - 21.0 GRAVEL, BROWN, MEDIUM, VERY SANDY,  
 POORLY SORTED; DRY, OXIDIZED, MOIST AT  
 13 FEET

\* \* \* \*

TEST HOLE NUMBER: 354  
 LOCATION: 110N-51W-06DDDD  
 LEGAL LOCATION: SE SE SE SE SEC. 06, T. 110 N., R. 51 W.

1.0 - 16.0 SAND, BROWN, FINE, SILTY, POORLY SORTED;  
 MOIST, OXIDIZED, SATURATED AT 6 FEET

\* \* \* \*

TEST HOLE NUMBER: 355

LOCATION: 110N-51W-10ADDD

LEGAL LOCATION: SE SE SE NE SEC. 10, T. 110 N., R. 51 W.

3.0 - 25.0 SAND AND GRAVEL, BROWN; SOME PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 356

LOCATION: 110N-51W-11AAAA

LEGAL LOCATION: NE NE NE NE SEC. 11, T. 110 N., R. 51 W.

1.0 - 15.0 SAND AND GRAVEL, GRAY, COARSE AT BASE

\* \* \* \*

TEST HOLE NUMBER: 357

LOCATION: 110N-51W-11AAAA 1

LEGAL LOCATION: NE NE NE NE SEC. 11, T. 110 N., R. 51 W.

2.0 - 11.0 SAND AND GRAVEL, BROWN

\* \* \* \*

TEST HOLE NUMBER: 358

LOCATION: 110N-51W-11CCCC

LEGAL LOCATION: SW SW SW SW SEC. 11, T. 110 N., R. 51 W.

2.0 - 17.0 SAND AND GRAVEL, BROWN, FINE TO MEDIUM;  
OXIDIZED

20.0 - 26.0 SAND, GRAY, FINE, SILTY

\* \* \* \*

TEST HOLE NUMBER: 359

LOCATION: 110N-51W-11CCCC 1

LEGAL LOCATION: SW SW SW SW SEC. 11, T. 110 N., R. 51 W.

2.0 - 18.0 GRAVEL AND SAND

18.0 - 31.0 SAND; SOME GRAVEL, LITTLE CLAY

\* \* \* \*

TEST HOLE NUMBER: 360

LOCATION: 110N-51W-11DCAD

LEGAL LOCATION: SE NE SW SE SEC. 11, T. 110 N., R. 51 W.

6.0 - 16.0 SAND AND GRAVEL, BROWN

\* \* \* \*

TEST HOLE NUMBER: 361

LOCATION: 110N-51W-11DDDD

LEGAL LOCATION: SE SE SE SE SEC. 11, T. 110 N., R. 51 W.

3.0 - 17.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 362  
LOCATION: 110N-51W-12ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 12, T. 110 N., R. 51 W.

2.0 - 14.0 SAND AND GRAVEL  
14.0 - 28.0 SAND, BLUISH-GRAY

\* \* \* \*

TEST HOLE NUMBER: 363  
LOCATION: 110N-51W-12CACD  
LEGAL LOCATION: SE SW NE SW SEC. 12, T. 110 N., R. 51 W.

3.0 - 15.0 SAND AND GRAVEL, BROWN

\* \* \* \*

TEST HOLE NUMBER: 364  
LOCATION: 110N-51W-12CBAA  
LEGAL LOCATION: NE NE NW SW SEC. 12, T. 110 N., R. 51 W.

6.0 - 10.0 SAND AND GRAVEL; SOME CLAY

\* \* \* \*

TEST HOLE NUMBER: 365  
LOCATION: 110N-51W-12CBBB  
LEGAL LOCATION: NW NW NW SW SEC. 12, T. 110 N., R. 51 W.

8.0 - 12.0 SAND, GRAYISH-BROWN, MEDIUM TO COARSE  
12.0 - 18.0 SAND AND GRAVEL  
18.0 - 26.0 SAND, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 366  
LOCATION: 110N-51W-12CCBD  
LEGAL LOCATION: SE NW SW SW SEC. 12, T. 110 N., R. 51 W.

5.0 - 12.0 SAND AND GRAVEL, BROWN; SOME CLAY  
12.0 - 14.0 SAND, GRAY, MEDIUM TO COARSE  
14.0 - 18.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 367  
LOCATION: 110N-51W-13BDCC  
LEGAL LOCATION: SW SW SE NW SEC. 13, T. 110 N., R. 51 W.

6.0 - 17.0 SAND AND GRAVEL, GRAYISH-BROWN

17.0 - 19.0 SAND AND GRAVEL, GRAY

\* \* \* \*

TEST HOLE NUMBER: 368  
LOCATION: 110N-51W-14CCDB  
LEGAL LOCATION: NW SE SW SW SEC. 14, T. 110 N., R. 51 W.

6.0 - 24.0 SAND AND GRAVEL, BROWN  
24.0 - 29.0 SAND AND GRAVEL, LIGHT-GRAY

\* \* \* \*

TEST HOLE NUMBER: 369  
LOCATION: 110N-51W-15ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 15, T. 110 N., R. 51 W.

3.0 - 12.0 SAND AND GRAVEL, BROWN

\* \* \* \*

TEST HOLE NUMBER: 370  
LOCATION: 110N-51W-16AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 16, T. 110 N., R. 51 W.

3.0 - 18.0 SAND AND GRAVEL, MEDIUM TO COARSE  
25.0 - 35.0 SAND AND GRAVEL, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 371  
LOCATION: 110N-51W-20BABB  
LEGAL LOCATION: NW NW NE NW SEC. 20, T. 110 N., R. 51 W.

0 - 9.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 372  
LOCATION: 110N-51W-21DABB  
LEGAL LOCATION: NW NW NE SE SEC. 21, T. 110 N., R. 51 W.

2.0 - 10.0 SAND, TAN TO BROWN, FINE TO MEDIUM  
10.0 - 21.0 SAND AND GRAVEL, BROWN

\* \* \* \*

TEST HOLE NUMBER: 373  
LOCATION: 110N-51W-21DDCC  
LEGAL LOCATION: SW SW SE SE SEC. 21, T. 110 N., R. 51 W.

2.0 - 20.0 SAND AND GRAVEL, BROWN; SOME CLAY  
20.0 - 34.0 SAND AND GRAVEL, BROWN, GRADING TO



GRAYISH-BROWN

\* \* \* \*

TEST HOLE NUMBER: 374  
LOCATION: 110N-51W-22AAAD  
LEGAL LOCATION: SE NE NE NE SEC. 22, T. 110 N., R. 51 W.

2.0 -	16.0	SAND AND GRAVEL, BROWN; MUCH CLAY
16.0 -	24.0	SAND AND GRAVEL; LITTLE CLAY
24.0 -	31.0	SAND, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 375  
LOCATION: 110N-51W-22AABA  
LEGAL LOCATION: NE NW NE NE SEC. 22, T. 110 N., R. 51 W.

7.0 -	13.0	SAND, LIGHT-BROWN, MEDIUM
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\* \* \* \*

TEST HOLE NUMBER: 376  
LOCATION: 110N-51W-22AACA  
LEGAL LOCATION: NE SW NE NE SEC. 22, T. 110 N., R. 51 W.

3.0 -	7.0	SAND AND GRAVEL, BROWN; SOME CLAY
7.0 -	27.0	SAND AND GRAVEL, LIGHT-BROWN

\* \* \* \*

TEST HOLE NUMBER: 377  
LOCATION: 110N-51W-22AACC  
LEGAL LOCATION: SW SW NE NE SEC. 22, T. 110 N., R. 51 W.

4.0 -	28.0	SAND AND GRAVEL, LIGHT-BROWN, GRADING TO GRAYISH-BROWN
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\* \* \* \*

TEST HOLE NUMBER: 378  
LOCATION: 110N-51W-22AADC  
LEGAL LOCATION: SW SE NE NE SEC. 22, T. 110 N., R. 51 W.

6.0 -	24.0	SAND AND GRAVEL, RUSTY-BROWN
24.0 -	33.0	SAND, GRAY; LITTLE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 379  
LOCATION: 110N-51W-22ACAA  
LEGAL LOCATION: NE NE SW NE SEC. 22, T. 110 N., R. 51 W.

4.0 -	15.0	SAND AND GRAVEL, DARK-BROWN
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15.0 - 26.0 SAND AND GRAVEL, GRAYISH-BROWN

\* \* \* \*

TEST HOLE NUMBER: 380  
LOCATION: 110N-51W-22ACAB  
LEGAL LOCATION: NW NE SW NE SEC. 22, T. 110 N., R. 51 W.

4.0 - 14.0 SAND, RUSTY-BROWN, COARSE  
14.0 - 31.0 SAND, LIGHT-GRAY, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 381  
LOCATION: 110N-51W-22ACCA  
LEGAL LOCATION: NE SW SW NE SEC. 22, T. 110 N., R. 51 W.

3.0 - 12.0 SAND AND GRAVEL, BROWN  
12.0 - 20.0 SAND AND GRAVEL, GRAYISH-BROWN  
20.0 - 33.0 SAND AND GRAVEL, BROWN

\* \* \* \*

TEST HOLE NUMBER: 382  
LOCATION: 110N-51W-22ACCB  
LEGAL LOCATION: NW SW SW NE SEC. 22, T. 110 N., R. 51 W.

4.0 - 26.0 SAND AND GRAVEL, BROWN

\* \* \* \*

TEST HOLE NUMBER: 383  
LOCATION: 110N-51W-22ADCB  
LEGAL LOCATION: NW SW SE NE SEC. 22, T. 110 N., R. 51 W.

5.0 - 25.0 SAND AND GRAVEL, BROWN; SOME CLAY  
25.0 - 38.0 SAND, LIGHT-GRAY, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 384  
LOCATION: 110N-51W-22BDDB  
LEGAL LOCATION: NE SE SE NW SEC. 22, T. 110 N., R. 51 W.

4.0 - 26.0 SAND AND GRAVEL, BROWN; SOME CLAY

\* \* \* \*

TEST HOLE NUMBER: 385  
LOCATION: 110N-51W-22BDDD  
LEGAL LOCATION: SE SE SE NW SEC. 22, T. 110 N., R. 51 W.

4.0 - 14.0 SAND AND GRAVEL, BROWN  
14.0 - 40.0 SAND AND GRAVEL; MUCH CLAY

\* \* \* \*

TEST HOLE NUMBER: 386  
LOCATION: 110N-51W-22CACC  
LEGAL LOCATION: SW SW NE SW SEC. 22, T. 110 N., R. 51 W.

3.0 - 22.0 GRAVEL, RED-BROWN, VERY SANDY; MOIST  
22.0 - 28.0 GRAVEL, RED-BROWN, SANDY; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 387  
LOCATION: 110N-51W-22CACC 1  
LEGAL LOCATION: SW SW NE SW SEC. 22, T. 110 N., R. 51 W.

3.0 - 16.0 SAND AND GRAVEL; MUCH CLAY  
16.0 - 44.0 SAND AND GRAVEL, BROWN, GRADING TO LIGHT-GRAY

\* \* \* \*

TEST HOLE NUMBER: 388  
LOCATION: 110N-51W-22CADB  
LEGAL LOCATION: NW SE NE SW SEC. 22, T. 110 N., R. 51 W.

5.0 - 25.0 SAND AND GRAVEL, BROWN  
25.0 - 30.0 SAND, LIGHT-GRAY, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 389  
LOCATION: 110N-51W-22CADD  
LEGAL LOCATION: SE SE NE SW SEC. 22, T. 110 N., R. 51 W.

6.0 - 16.0 SAND AND GRAVEL, BROWN  
16.0 - 43.0 SAND AND GRAVEL, RUSTY-BROWN, GRADING TO GRAYISH-BROWN

\* \* \* \*

TEST HOLE NUMBER: 390  
LOCATION: 110N-51W-22CBBA  
LEGAL LOCATION: NE NW NW SW SEC. 22, T. 110 N., R. 51 W.

4.0 - 24.0 SAND AND GRAVEL  
24.0 - 29.0 SAND, GRAYISH-BROWN

\* \* \* \*

TEST HOLE NUMBER: 391  
LOCATION: 110N-51W-22CBBB  
LEGAL LOCATION: NW NW NW SW SEC. 22, T. 110 N., R. 51 W.

2.0 - 6.0 SAND AND GRAVEL; MUCH CLAY

6.0 - 32.0 SAND, BROWN, GRADING TO GRAYISH-BROWN

\* \* \* \*

TEST HOLE NUMBER: 392  
LOCATION: 110N-51W-22CBCC  
LEGAL LOCATION: SW SW NW SW SEC. 22, T. 110 N., R. 51 W.

3.0 - 20.0 GRAVEL, COARSE; WITH SILTY SAND  
20.0 - 28.0 SAND AND GRAVEL; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 393  
LOCATION: 110N-51W-22CBCC 1  
LEGAL LOCATION: SW SW NW SW SEC. 22, T. 110 N., R. 51 W.

5.0 - 14.0 GRAVEL, MEDIUM  
14.0 - 23.0 GRAVEL, FINE  
23.0 - 45.0 GRAVEL, FINE TO MEDIUM

\* \* \* \*

TEST HOLE NUMBER: 394  
LOCATION: 110N-51W-22CBCD  
LEGAL LOCATION: SE SW NW SW SEC. 22, T. 110 N., R. 51 W.

3.0 - 31.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 395  
LOCATION: 110N-51W-22CBDD  
LEGAL LOCATION: SE SE NW SW SEC. 22, T. 110 N., R. 51 W.

3.0 - 20.0 GRAVEL, RED-BROWN, VERY SANDY, SILTY;  
MOIST  
20.0 - 28.0 GRAVEL, RED-BROWN, VERY SANDY, SILTY;  
SATURATED

\* \* \* \*

TEST HOLE NUMBER: 396  
LOCATION: 110N-51W-22CCBB  
LEGAL LOCATION: NW NW SW SW SEC. 22, T. 110 N., R. 51 W.

2.0 - 25.0 GRAVEL AND SAND, VERY COARSE SAND  
25.0 - 28.0 SAND, COARSE TO VERY COARSE

\* \* \* \*

TEST HOLE NUMBER: 397  
LOCATION: 110N-51W-22CDDA  
LEGAL LOCATION: NE SE SE SW SEC. 22, T. 110 N., R. 51 W.

7.0 - 21.0 SAND, GRAYISH-BROWN, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 398  
LOCATION: 110N-51W-22DAAB  
LEGAL LOCATION: NW NE NE SE SEC. 22, T. 110 N., R. 51 W.

3.0 - 12.0 SAND AND GRAVEL, BROWN  
12.0 - 24.0 SAND AND GRAVEL, GRAYISH-BROWN

\* \* \* \*

TEST HOLE NUMBER: 399  
LOCATION: 110N-51W-22DBBA  
LEGAL LOCATION: NE NW NW SE SEC. 22, T. 110 N., R. 51 W.

4.0 - 17.0 GRAVEL, BROWN, SILTY, SANDY, CLAYEY; DRY  
17.0 - 18.0 GRAVEL, BROWN, SILTY, SANDY, CLAYEY;  
SATURATED

\* \* \* \*

TEST HOLE NUMBER: 400  
LOCATION: 110N-51W-22DBBB  
LEGAL LOCATION: NW NW NW SE SEC. 22, T. 110 N., R. 51 W.

2.0 - 26.0 SAND AND GRAVEL, FINE SAND TO COARSE  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 401  
LOCATION: 110N-51W-23AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 23, T. 110 N., R. 51 W.

1.0 - 16.0 SAND AND GRAVEL, BROWN WITH GRAY LAST 4  
FEET, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 402  
LOCATION: 110N-51W-23AAAD  
LEGAL LOCATION: SE NE NE NE SEC. 23, T. 110 N., R. 51 W.

2.0 - 19.0 SAND AND GRAVEL; SOME CLAY

\* \* \* \*

TEST HOLE NUMBER: 403  
LOCATION: 110N-51W-23ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 23, T. 110 N., R. 51 W.

2.0 - 17.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 404  
LOCATION: 110N-51W-23BAAB  
LEGAL LOCATION: NW NE NE NW SEC. 23, T. 110 N., R. 51 W.

2.0 - 11.0 SAND, MEDIUM TO COARSE  
11.0 - 19.0 SAND AND GRAVEL, GRAYISH-BROWN

\* \* \* \*

TEST HOLE NUMBER: 405  
LOCATION: 110N-51W-23BBAA  
LEGAL LOCATION: NE NE NW NW SEC. 23, T. 110 N., R. 51 W.

5.0 - 10.0 SAND, RED-BROWN, SILTY, GRAVELLY; MOIST  
10.0 - 18.0 SAND, RED-BROWN, SILTY, GRAVELLY;  
SATURATED

\* \* \* \*

TEST HOLE NUMBER: 406  
LOCATION: 110N-51W-23BBAB 1  
LEGAL LOCATION: NW NE NW NW SEC. 23, T. 110 N., R. 51 W.

1.0 - 26.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 407  
LOCATION: 110N-51W-23BBAB 2  
LEGAL LOCATION: NW NE NW NW SEC. 23, T. 110 N., R. 51 W.

3.0 - 10.0 SAND, RED-BROWN, SILTY, GRAVELLY; MOIST  
10.0 - 18.0 SAND, RED-BROWN, SILTY, GRAVELLY;  
SATURATED

\* \* \* \*

TEST HOLE NUMBER: 408  
LOCATION: 110N-51W-23BBBA 1  
LEGAL LOCATION: NE NW NW NW SEC. 23, T. 110 N., R. 51 W.

1.0 - 16.0 SAND AND GRAVEL, FINE SAND AND COARSE  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 409  
LOCATION: 110N-51W-23BBBA 2  
LEGAL LOCATION: NE NW NW NW SEC. 23, T. 110 N., R. 51 W.

2.0 - 16.0 SAND AND GRAVEL, FINE SAND TO MEDIUM  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 410  
LOCATION: 110N-51W-23BBBA 3  
LEGAL LOCATION: NE NW NW NW SEC. 23, T. 110 N., R. 51 W.

4.0 - 10.0 SAND, RED-BROWN, SILTY, PEBBLY; MOIST  
10.0 - 11.0 SAND, BROWN, SILTY, PEBBLY; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 411  
LOCATION: 110N-51W-23DAAA  
LEGAL LOCATION: NE NE NE SE SEC. 23, T. 110 N., R. 51 W.

3.0 - 11.0 SAND AND GRAVEL, BROWN  
11.0 - 13.0 SAND AND GRAVEL; MUCH CLAY

\* \* \* \*

TEST HOLE NUMBER: 412  
LOCATION: 110N-51W-24ABBA  
LEGAL LOCATION: NE NW NW NE SEC. 24, T. 110 N., R. 51 W.

7.0 - 19.0 SAND AND GRAVEL, BROWN, GRADING TO GRAY

\* \* \* \*

TEST HOLE NUMBER: 413  
LOCATION: 110N-51W-24BABA  
LEGAL LOCATION: NE NW NE NW SEC. 24, T. 110 N., R. 51 W.

3.0 - 15.0 SAND AND GRAVEL, BROWN

\* \* \* \*

TEST HOLE NUMBER: 414  
LOCATION: 110N-51W-25ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 25, T. 110 N., R. 51 W.

3.0 - 10.0 SAND AND GRAVEL, BROWN  
10.0 - 20.0 SAND, TAN, FINE TO MEDIUM

\* \* \* \*

TEST HOLE NUMBER: 415  
LOCATION: 110N-51W-25BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 25, T. 110 N., R. 51 W.

2.0 - 8.0 SAND AND GRAVEL  
8.0 - 13.0 GRAVEL AND SAND; SOME BOULDERS

\* \* \* \*

TEST HOLE NUMBER: 416  
LOCATION: 110N-51W-25BBBB 2  
LEGAL LOCATION: NW NW NW NW SEC. 25, T. 110 N., R. 51 W.

1.0 - 16.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 417  
LOCATION: 110N-51W-25CBBB  
LEGAL LOCATION: NW NW NW SW SEC. 25, T. 110 N., R. 51 W.

1.0 - 12.0 SAND AND GRAVEL, BROWN

\* \* \* \*

TEST HOLE NUMBER: 418  
LOCATION: 110N-51W-25CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 25, T. 110 N., R. 51 W.

3.0 - 19.0 SAND AND GRAVEL, BROWN; LITTLE CLAY  
19.0 - 26.0 SAND, TAN, FINE TO MEDIUM

\* \* \* \*

TEST HOLE NUMBER: 419  
LOCATION: 110N-51W-25DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 25, T. 110 N., R. 51 W.

2.0 - 5.0 SAND AND GRAVEL  
5.0 - 23.0 SAND, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 420  
LOCATION: 110N-51W-26BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 26, T. 110 N., R. 51 W.

3.0 - 26.0 SAND AND GRAVEL, BROWN

\* \* \* \*

TEST HOLE NUMBER: 421  
LOCATION: 110N-51W-26CDCC  
LEGAL LOCATION: SW SW SE SW SEC. 26, T. 110 N., R. 51 W.

6.0 - 28.0 SAND AND GRAVEL, BROWN; MUCH CLAY

\* \* \* \*

TEST HOLE NUMBER: 422  
LOCATION: 110N-51W-27ADAA  
LEGAL LOCATION: NE NE SE NE SEC. 27, T. 110 N., R. 51 W.



2.0 - 12.0 SAND AND GRAVEL, BROWN  
12.0 - 14.0 SAND AND GRAVEL  
14.0 - 21.0 SAND, BROWN, MEDIUM TO VERY COARSE

\* \* \* \*

TEST HOLE NUMBER: 423  
LOCATION: 110N-51W-27BAAB  
LEGAL LOCATION: NW NE NE NW SEC. 27, T. 110 N., R. 51 W.

1.0 - 7.0 SAND AND GRAVEL, LIGHT-BROWN  
7.0 - 34.0 SAND AND GRAVEL, BROWN

\* \* \* \*

TEST HOLE NUMBER: 424  
LOCATION: 110N-51W-27BAAD  
LEGAL LOCATION: SE NE NE NW SEC. 27, T. 110 N., R. 51 W.

6.0 - 18.0 SAND, FINE TO MEDIUM, SOME VERY COARSE

\* \* \* \*

TEST HOLE NUMBER: 425  
LOCATION: 110N-51W-27BACA  
LEGAL LOCATION: NE SW NE NW SEC. 27, T. 110 N., R. 51 W.

3.0 - 26.0 SAND, GRAY, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 426  
LOCATION: 110N-51W-27BBBD  
LEGAL LOCATION: SE NW NW NW SEC. 27, T. 110 N., R. 51 W.

6.0 - 20.0 SAND AND GRAVEL, BROWN; MUCH CLAY  
20.0 - 39.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 427  
LOCATION: 110N-51W-27BCCA  
LEGAL LOCATION: NE SW SW NW SEC. 27, T. 110 N., R. 51 W.

6.0 - 16.0 SAND AND GRAVEL, BROWN  
21.0 - 29.0 SAND AND GRAVEL, TAN; SOME CLAY

\* \* \* \*

TEST HOLE NUMBER: 428  
LOCATION: 110N-51W-27BCCD  
LEGAL LOCATION: SE SW SW NW SEC. 27, T. 110 N., R. 51 W.

5.0 - 16.0 GRAVEL, BROWN, MEDIUM

16.0 - 29.0 SAND, LIGHT-BROWN, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 429  
LOCATION: 110N-51W-28AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 28, T. 110 N., R. 51 W.

2.0 - 25.0 SAND AND GRAVEL  
25.0 - 44.0 SAND AND GRAVEL, BROWN, GRADING TO  
GRAYISH-BROWN

\* \* \* \*

TEST HOLE NUMBER: 430  
LOCATION: 110N-51W-28ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 28, T. 110 N., R. 51 W.

2.0 - 35.0 SAND AND GRAVEL, BROWN

\* \* \* \*

TEST HOLE NUMBER: 431  
LOCATION: 110N-51W-28ADAD  
LEGAL LOCATION: SE NE SE NE SEC. 28, T. 110 N., R. 51 W.

2.0 - 14.0 SAND AND GRAVEL, BROWN; SOME CLAY  
17.0 - 24.0 SAND AND GRAVEL; MUCH CLAY  
24.0 - 51.0 SAND, GRAY, FINE TO MEDIUM; SOME CLAY

\* \* \* \*

TEST HOLE NUMBER: 432  
LOCATION: 110N-51W-28ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 28, T. 110 N., R. 51 W.

3.0 - 8.0 SAND AND GRAVEL; MUCH CLAY  
8.0 - 32.0 SAND, LIGHT-BROWN, MEDIUM TO VERY COARSE

\* \* \* \*

TEST HOLE NUMBER: 433  
LOCATION: 110N-51W-29ABAB  
LEGAL LOCATION: NW NE NW NE SEC. 29, T. 110 N., R. 51 W.

0 - 1.0 SAND, BROWN, VERY FINE; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 434  
LOCATION: 110N-51W-29ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 29, T. 110 N., R. 51 W.

3.0 - 51.0 SAND AND GRAVEL, BROWN

\* \* \* \*

TEST HOLE NUMBER: 435  
LOCATION: 110N-51W-29BABA  
LEGAL LOCATION: NE NW NE NW SEC. 29, T. 110 N., R. 51 W.

0 - 6.0 SAND, BROWN, MEDIUM TO COARSE; DRY,  
OXIDIZED, SOME MEDIUM GRAVEL  
6.0 - 11.0 SAND, BROWN, MEDIUM, CLAYEY, GRAVELLY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 436  
LOCATION: 110N-51W-29DCDD  
LEGAL LOCATION: SE SE SW SE SEC. 29, T. 110 N., R. 51 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

3.0 - 27.0 GRAVEL, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 437  
LOCATION: 110N-51W-30AADD  
LEGAL LOCATION: SE SE NE NE SEC. 30, T. 110 N., R. 51 W.

2.0 - 24.0 SAND, REDDISH-BROWN, MEDIUM, SILTY;  
MOIST, OXIDIZED, SOME GRAVEL  
24.0 - 32.0 GRAVEL, BROWN, MEDIUM, WELL SORTED;  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 438  
LOCATION: 110N-51W-30DDAA  
LEGAL LOCATION: NE NE SE SE SEC. 30, T. 110 N., R. 51 W.

16.0 - 24.0 GRAVEL, REDDISH-BROWN, COARSE, SANDY;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 439  
LOCATION: 110N-51W-32AABB  
LEGAL LOCATION: NW NW NE NE SEC. 32, T. 110 N., R. 51 W.

1.0 - 12.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 440  
LOCATION: 110N-51W-35ABBA  
LEGAL LOCATION: NE NW NW NE SEC. 35, T. 110 N., R. 51 W.

1.0 - 13.0 SAND AND GRAVEL, BROWN  
13.0 - 22.0 SAND AND GRAVEL, GRAYISH-BROWN

\* \* \* \*

TEST HOLE NUMBER: 441  
LOCATION: 110N-51W-36BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 36, T. 110 N., R. 51 W.

1.0 - 8.0 SAND AND GRAVEL  
8.0 - 36.0 SAND, COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 442  
LOCATION: 110N-51W-36BBBB 1  
LEGAL LOCATION: NW NW NW NW SEC. 36, T. 110 N., R. 51 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

4.0 - 34.0 SAND AND GRAVEL, COARSE SAND TO COARSE  
PEBBLES; WITH SOME FINE SAND AND  
VERY COARSE PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 443  
LOCATION: 110N-51W-36BCBC  
LEGAL LOCATION: SW NW SW NW SEC. 36, T. 110 N., R. 51 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

3.0 - 38.0 GRAVEL; FINE TO VERY COARSE PEBBLES; SOME  
SAND

\* \* \* \*

TEST HOLE NUMBER: 444  
LOCATION: 110N-51W-36CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 36, T. 110 N., R. 51 W.

2.0 - 24.0 SAND AND GRAVEL, BROWN; OXIDIZED  
24.0 - 32.0 SAND, GRAY, FINE TO MEDIUM

\* \* \* \*

TEST HOLE NUMBER: 445  
LOCATION: 110N-52W-01ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 01, T. 110 N., R. 52 W.

0 - 1.0 GRAVEL, BROWN, VERY COARSE, VERY COBBLY;  
DRY, OXIDIZED  
1.0 - 5.0 GRAVEL, REDDISH-BROWN, VERY COARSE,  
SANDY, POORLY SORTED; MOIST, OXIDIZED  
16.0 - 27.0 SAND, BROWN, FINE TO MEDIUM, VERY CLAYEY,  
POORLY SORTED; MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 446  
LOCATION: 110N-52W-06DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 06, T. 110 N., R. 52 W.

1.0 - 2.0 GRAVEL, BROWN, MEDIUM; OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 447  
LOCATION: 110N-52W-11AAAB  
LEGAL LOCATION: NW NE NE NE SEC. 11, T. 110 N., R. 52 W.

11.0 - 24.0 GRAVEL, BROWN, FINE, VERY SILTY, CLAYEY,  
POORLY SORTED; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 448  
LOCATION: 111N-47W-06AABB  
LEGAL LOCATION: NW NW NE NE SEC. 06, T. 111 N., R. 47 W.

6.0 - 10.0 GRAVEL, BROWN, COARSE TO VERY COARSE,  
SANDY; SATURATED, OXIDIZED, ABANDONED  
HOLE

\* \* \* \*

TEST HOLE NUMBER: 449  
LOCATION: 111N-47W-07AAAD  
LEGAL LOCATION: SE NE NE NE SEC. 07, T. 111 N., R. 47 W.

5.0 - 18.0 SAND, DARK-BROWN, MEDIUM, WELL SORTED;  
SATURATED, OXIDIZED  
18.0 - 25.0 GRAVEL, DARK-BROWN, COARSE, SANDY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 450  
LOCATION: 111N-47W-07AABB  
LEGAL LOCATION: NW NW NE NE SEC. 07, T. 111 N., R. 47 W.

0 - 2.0 GRAVEL, BROWN, MEDIUM TO COARSE, POORLY  
SORTED; DRY, OXIDIZED  
14.0 - 19.0 GRAVEL, DARK-BROWN, MEDIUM; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 451  
LOCATION: 111N-47W-08CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 08, T. 111 N., R. 47 W.

8.0 - 15.0 SAND, BROWN, MEDIUM; SATURATED, OXIDIZED  
15.0 - 22.0 GRAVEL, BROWN, VERY COARSE; SATURATED,  
OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 452  
LOCATION: 111N-47W-20CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 20, T. 111 N., R. 47 W.

10.0 - 15.0 GRAVEL, BROWN, VERY COARSE; MOIST,  
OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 453  
LOCATION: 111N-47W-29BCBC  
LEGAL LOCATION: SW NW SW NW SEC. 29, T. 111 N., R. 47 W.

19.0 - 25.0 GRAVEL, DARK-BROWN, COARSE, VERY SANDY;  
SATURATED, OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 454  
LOCATION: 111N-47W-30AAAB  
LEGAL LOCATION: NW NE NE NE SEC. 30, T. 111 N., R. 47 W.

3.0 - 7.0 GRAVEL, BROWN, FINE TO MEDIUM, MODERATELY  
SORTED; DRY, OXIDIZED  
11.0 - 32.0 GRAVEL, BROWN, COARSE, SANDY, POORLY  
SORTED; DRY, OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 455  
LOCATION: 111N-47W-30BAA  
LEGAL LOCATION: NE NE NW SEC. 30, T. 111 N., R. 47 W.

20.0 - 40.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 456  
LOCATION: 111N-47W-31AAAB  
LEGAL LOCATION: NW NE NE NE SEC. 31, T. 111 N., R. 47 W.

1.0 - 5.0 GRAVEL, BROWN, COARSE, POORLY SORTED;  
DRY, OXIDIZED  
5.0 - 19.0 SAND, BROWN, MEDIUM TO COARSE, WELL  
SORTED; MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 457  
LOCATION: 111N-47W-31CBBB  
LEGAL LOCATION: NW NW NW SW SEC. 31, T. 111 N., R. 47 W.

2.0 - 9.0 GRAVEL, BROWN, MEDIUM; OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 458  
LOCATION: 111N-48W-06DDDA  
LEGAL LOCATION: NE SE SE SE SEC. 06, T. 111 N., R. 48 W.

0 - 6.0 SAND, BROWN, MEDIUM, GRAVELLY; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 459  
LOCATION: 111N-48W-17CBBC  
LEGAL LOCATION: SW NW NW SW SEC. 17, T. 111 N., R. 48 W.

14.0 - 17.0 GRAVEL, BROWN, COARSE, POORLY SORTED;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 460  
LOCATION: 111N-48W-19BABA  
LEGAL LOCATION: NE NW NE NW SEC. 19, T. 111 N., R. 48 W.

1.0 - 6.0 SAND, BROWN, MEDIUM; MOIST, OXIDIZED,  
SOME GRAVEL  
6.0 - 10.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
MOIST, OXIDIZED  
10.0 - 15.0 SAND, BROWN, MEDIUM; SATURATED, OXIDIZED,  
SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 461  
LOCATION: 111N-48W-25DDDC  
LEGAL LOCATION: SW SE SE SE SEC. 25, T. 111 N., R. 48 W.

5.0 - 21.0 GRAVEL, BROWN, MEDIUM TO COARSE, SILTY,  
VERY SANDY; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 462  
LOCATION: 111N-48W-28CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 28, T. 111 N., R. 48 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

17.0 - 29.0 SAND AND GRAVEL, FINE SAND TO COARSE

PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 463  
LOCATION: 111N-48W-31ABAB  
LEGAL LOCATION: NW NE NW NE SEC. 31, T. 111 N., R. 48 W.

6.0 - 19.0 GRAVEL, BROWN, MEDIUM, SANDY, CLAYEY;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 464  
LOCATION: 111N-48W-34DAA  
LEGAL LOCATION: NE NE SE SEC. 34, T. 111 N., R. 48 W.

13.0 - 28.0 SAND AND GRAVEL; SOME BOULDERS AND  
COBBLES, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 465  
LOCATION: 111N-48W-34DAA 2  
LEGAL LOCATION: NE NE SE SEC. 34, T. 111 N., R. 48 W.

2.0 - 8.0 SAND, BROWN; SOME SILT  
8.0 - 14.0 SAND AND GRAVEL  
14.0 - 30.0 SAND, VERY COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 466  
LOCATION: 111N-48W-34DDDA  
LEGAL LOCATION: NE SE SE SE SEC. 34, T. 111 N., R. 48 W.

1.0 - 6.0 GRAVEL, BROWN, MEDIUM, SANDY; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 467  
LOCATION: 111N-48W-35ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 35, T. 111 N., R. 48 W.

4.0 - 11.0 GRAVEL, BROWN, MEDIUM TO COARSE, SILTY,  
SANDY; MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 468  
LOCATION: 111N-48W-35ADAD  
LEGAL LOCATION: SE NE SE NE SEC. 35, T. 111 N., R. 48 W.



2.0 - 10.0 SAND, FINE TO MEDIUM  
14.0 - 19.0 SAND, DARK-GRAY, TURNED TO LIGHT-YELLOW-  
BROWN AT 23 FEET, VERY FINE  
19.0 - 38.0 SAND, GRAY-BROWN, FINE TO MEDIUM

\* \* \* \*

TEST HOLE NUMBER: 469  
LOCATION: 111N-48W-35ADD  
LEGAL LOCATION: SE SE NE SEC. 35, T. 111 N., R. 48 W.

2.0 - 5.0 SAND; SOME SILT  
5.0 - 8.0 SAND, BROWN, FINE  
17.0 - 33.0 SAND, VERY COARSE; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 470  
LOCATION: 111N-48W-35CBA  
LEGAL LOCATION: NE NW SW SEC. 35, T. 111 N., R. 48 W.

2.0 - 7.0 SAND; SOME SILT  
7.0 - 14.0 GRAVEL; SOME CLAY

\* \* \* \*

TEST HOLE NUMBER: 471  
LOCATION: 111N-48W-35CBA 2  
LEGAL LOCATION: NE NW SW SEC. 35, T. 111 N., R. 48 W.

2.0 - 17.0 SAND AND GRAVEL  
22.0 - 25.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 472  
LOCATION: 111N-48W-35CBBC  
LEGAL LOCATION: SW NW NW SW SEC. 35, T. 111 N., R. 48 W.

12.0 - 49.0 GRAVEL, BROWN, MEDIUM TO VERY COARSE;  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 473  
LOCATION: 111N-48W-36ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 36, T. 111 N., R. 48 W.

10.0 - 23.0 SAND, DARK-BROWN, MEDIUM TO COARSE;  
SATURATED, OXIDIZED, VERY DIRTY

\* \* \* \*

TEST HOLE NUMBER: 474

LOCATION: 111N-48W-36BBCC

LEGAL LOCATION: SW SW NW NW SEC. 36, T. 111 N., R. 48 W.

12.0 - 19.0 GRAVEL, DARK-BROWN, COARSE, SILTY, SANDY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 475

LOCATION: 111N-49W-01DDAA

LEGAL LOCATION: NE NE SE SE SEC. 01, T. 111 N., R. 49 W.

0 - 2.0 SAND, TAN, VERY FINE; DRY, OXIDIZED  
2.0 - 5.0 SAND, BROWN, FINE TO MEDIUM; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 476

LOCATION: 111N-49W-03ADDD

LEGAL LOCATION: SE SE SE NE SEC. 03, T. 111 N., R. 49 W.

1.0 - 9.0 SAND, BROWN, MEDIUM, PEBBLY; DRY,  
OXIDIZED  
9.0 - 16.0 GRAVEL, BROWN, VERY COARSE, SANDY; DRY,  
OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 477

LOCATION: 111N-49W-06DDDA

LEGAL LOCATION: NE SE SE SE SEC. 06, T. 111 N., R. 49 W.

15.0 - 35.0 SAND, BROWN, MEDIUM TO COARSE, SILTY,  
PEBBLY; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 478

LOCATION: 111N-49W-07CCCC

LEGAL LOCATION: SW SW SW SW SEC. 07, T. 111 N., R. 49 W.

0 - 4.0 SAND, BROWN, MEDIUM, GRAVELLY, MODERATELY  
SORTED; DRY, OXIDIZED  
9.0 - 16.0 GRAVEL, BROWN, COARSE, SANDY, MODERATELY  
SORTED; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 479

LOCATION: 111N-49W-07DADD

LEGAL LOCATION: SE SE NE SE SEC. 07, T. 111 N., R. 49 W.

0 - 20.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;

DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 480  
LOCATION: 111N-49W-09AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 09, T. 111 N., R. 49 W.

5.0 - 29.0 GRAVEL, BROWN, MEDIUM, SANDY; DRY,  
OXIDIZED, SATURATED AT 18 FEET

\* \* \* \*

TEST HOLE NUMBER: 481  
LOCATION: 111N-49W-09CBCB  
LEGAL LOCATION: NW SW NW SW SEC. 09, T. 111 N., R. 49 W.

0 - 22.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 482  
LOCATION: 111N-49W-09CCCC 1  
LEGAL LOCATION: SW SW SW SW SEC. 09, T. 111 N., R. 49 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

3.0 - 10.0 SAND AND GRAVEL, MEDIUM SAND TO FINE  
GRAVEL; IRON-OXIDE STAIN AND SOME  
PEBBLY CLAY

\* \* \* \*

TEST HOLE NUMBER: 483  
LOCATION: 111N-49W-09CCCC 2  
LEGAL LOCATION: SW SW SW SW SEC. 09, T. 111 N., R. 49 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

3.0 - 10.0 SAND AND GRAVEL, FINE SAND TO COARSE  
GRAVEL; WITH IRON-OXIDE STAIN

\* \* \* \*

TEST HOLE NUMBER: 484  
LOCATION: 111N-49W-10ADDA  
LEGAL LOCATION: NE SE SE NE SEC. 10, T. 111 N., R. 49 W.

1.0 - 6.0 SAND, BROWN, FINE TO MEDIUM, MODERATELY  
SORTED; DRY, OXIDIZED  
6.0 - 36.0 GRAVEL, BROWN, COARSE, WELL SORTED; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 485  
LOCATION: 111N-49W-10CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 10, T. 111 N., R. 49 W.

1.0 - 5.0 GRAVEL, BROWN, MEDIUM, VERY SANDY,  
CLAYEY; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 486  
LOCATION: 111N-49W-11AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 11, T. 111 N., R. 49 W.

0 - 11.0 GRAVEL, DARK-BROWN, MEDIUM TO VERY  
COARSE, POORLY SORTED; DRY, OXIDIZED,  
ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 487  
LOCATION: 111N-49W-11ADDA  
LEGAL LOCATION: NE SE SE NE SEC. 11, T. 111 N., R. 49 W.

1.0 - 15.0 GRAVEL, BROWN, COARSE, SANDY, POORLY  
SORTED; DRY, OXIDIZED, SATURATED AT 9  
FEET

\* \* \* \*

TEST HOLE NUMBER: 488  
LOCATION: 111N-49W-11CCC  
LEGAL LOCATION: SW SW SW SEC. 11, T. 111 N., R. 49 W.

8.0 - 13.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 489  
LOCATION: 111N-49W-11DCCC  
LEGAL LOCATION: SW SW SW SE SEC. 11, T. 111 N., R. 49 W.

1.0 - 2.0 SAND, BROWN, MEDIUM, CLAYEY, GRAVELLY;  
MOIST, OXIDIZED  
5.0 - 14.0 GRAVEL, BROWN, MEDIUM, SANDY, MODERATELY  
SORTED; DRY, OXIDIZED  
14.0 - 16.0 GRAVEL, BROWN, COARSE TO VERY COARSE;  
DRY, OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 490  
LOCATION: 111N-49W-11DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 11, T. 111 N., R. 49 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

15.0 - 34.0 SAND AND GRAVEL, FINE SAND TO COARSE  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 491  
LOCATION: 111N-49W-14AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 14, T. 111 N., R. 49 W.

2.0 - 4.0 SAND AND GRAVEL; OXIDIZED  
11.0 - 28.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 492  
LOCATION: 111N-49W-15DCCC  
LEGAL LOCATION: SW SW SW SE SEC. 15, T. 111 N., R. 49 W.

6.0 - 9.0 GRAVEL, BROWN, FINE TO MEDIUM, VERY  
SANDY, CLAYEY; SATURATED, OXIDIZED  
9.0 - 16.0 GRAVEL, BROWN, COARSE; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 493  
LOCATION: 111N-49W-16AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 16, T. 111 N., R. 49 W.

2.0 - 4.0 SAND, GRAY, MEDIUM, WELL SORTED; MOIST,  
UNOXIDIZED  
4.0 - 6.0 GRAVEL, GRAYISH-BROWN, MEDIUM; MOIST,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 494  
LOCATION: 111N-49W-16DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 16, T. 111 N., R. 49 W.

1.0 - 4.0 GRAVEL, BROWN, MEDIUM, SANDY, VERY  
CLAYEY; DRY, OXIDIZED  
4.0 - 11.0 GRAVEL, BROWN, COARSE TO VERY COARSE;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 495  
LOCATION: 111N-49W-18CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 18, T. 111 N., R. 49 W.

1.0 - 5.0 SAND, BROWN, MEDIUM, VERY CLAYEY; DRY,  
OXIDIZED  
5.0 - 9.0 SAND, REDDISH-BROWN, MEDIUM; MOIST,

OXIDIZED, SOME GRAVEL  
9.0 - 12.0 GRAVEL, REDDISH-BROWN, COARSE, SANDY,  
POORLY SORTED; MOIST, OXIDIZED  
12.0 - 44.0 GRAVEL, REDDISH-BROWN, FINE, SANDY,  
MODERATELY SORTED; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 496  
LOCATION: 111N-49W-19CBBB  
LEGAL LOCATION: NW NW NW SW SEC. 19, T. 111 N., R. 49 W.

3.0 - 10.0 SAND, REDDISH-BROWN, FINE, WELL SORTED;  
DRY, OXIDIZED  
11.0 - 29.0 GRAVEL, REDDISH-BROWN, COARSE, SILTY,  
SANDY, POORLY SORTED; DRY, OXIDIZED,  
SATURATED AT 22 FEET

\* \* \* \*

TEST HOLE NUMBER: 497  
LOCATION: 111N-49W-22AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 22, T. 111 N., R. 49 W.

1.0 - 5.0 GRAVEL, BROWN, MEDIUM, POORLY SORTED;  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 498  
LOCATION: 111N-49W-24CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 24, T. 111 N., R. 49 W.

5.0 - 12.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 499  
LOCATION: 111N-49W-24DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 24, T. 111 N., R. 49 W.

11.0 - 17.0 GRAVEL, BROWN, MEDIUM, SILTY, POORLY  
SORTED; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 500  
LOCATION: 111N-49W-25CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 25, T. 111 N., R. 49 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

1.0 - 16.0 SAND AND GRAVEL, FINE SAND TO COARSE  
PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 501  
LOCATION: 111N-49W-25CCCD  
LEGAL LOCATION: SE SW SW SW SEC. 25, T. 111 N., R. 49 W.

1.0 - 22.0 GRAVEL, BROWN, MEDIUM, SANDY; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 502  
LOCATION: 111N-49W-26ABAB  
LEGAL LOCATION: NW NE NW NE SEC. 26, T. 111 N., R. 49 W.

11.0 - 13.0 GRAVEL, REDDISH-BROWN, MEDIUM, SANDY,  
CLAYEY, POORLY SORTED; MOIST, OXIDIZED  
13.0 - 16.0 GRAVEL, BROWN, COARSE, POORLY SORTED;  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 503  
LOCATION: 111N-49W-26BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 26, T. 111 N., R. 49 W.

21.0 - 24.0 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED,  
ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 504  
LOCATION: 111N-49W-27ABBA  
LEGAL LOCATION: NE NW NW NE SEC. 27, T. 111 N., R. 49 W.

0 - 6.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY,  
MODERATELY SORTED; DRY, OXIDIZED  
6.0 - 12.0 GRAVEL, BROWN, COARSE, MODERATELY SORTED;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 505  
LOCATION: 111N-49W-27BABB  
LEGAL LOCATION: NW NW NE NW SEC. 27, T. 111 N., R. 49 W.

6.0 - 19.0 SAND, BROWN, MEDIUM, VERY CLAYEY;  
SATURATED, OXIDIZED, SOME GRAVEL AT 14  
FEET  
19.0 - 21.0 GRAVEL, BROWN, COARSE; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 506  
LOCATION: 111N-49W-27CCDD  
LEGAL LOCATION: SE SE SW SW SEC. 27, T. 111 N., R. 49 W.

1.0 - 14.0 SAND AND GRAVEL; OXIDIZED  
14.0 - 19.0 SAND, YELLOW-BROWN  
19.0 - 79.0 SAND AND GRAVEL, BROWN; CLEAN

\* \* \* \*

TEST HOLE NUMBER: 507  
LOCATION: 111N-49W-28AABA  
LEGAL LOCATION: NE NW NE NE SEC. 28, T. 111 N., R. 49 W.

2.0 - 6.0 GRAVEL, BROWN, COARSE, POORLY SORTED;  
DRY, OXIDIZED  
14.0 - 17.0 SAND, BROWN, FINE, WELL SORTED; VERY  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 508  
LOCATION: 111N-49W-28DCCC  
LEGAL LOCATION: SW SW SW SE SEC. 28, T. 111 N., R. 49 W.

5.0 - 22.0 GRAVEL, GRAY, MEDIUM, CLAYEY, SANDY;  
SATURATED, UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 509  
LOCATION: 111N-49W-29DCCD  
LEGAL LOCATION: SE SW SW SE SEC. 29, T. 111 N., R. 49 W.

7.0 - 10.0 SAND, BROWN, MEDIUM, CLAYEY; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 510  
LOCATION: 111N-49W-30CCCD  
LEGAL LOCATION: SE SW SW SW SEC. 30, T. 111 N., R. 49 W.

5.0 - 14.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 511  
LOCATION: 111N-49W-32DCCC  
LEGAL LOCATION: SW SW SW SE SEC. 32, T. 111 N., R. 49 W.

5.0 - 9.0 GRAVEL, FINE  
9.0 - 49.0 SAND, COARSE



\* \* \* \*

TEST HOLE NUMBER: 512  
LOCATION: 111N-49W-34ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 34, T. 111 N., R. 49 W.

1.0 - 7.0 SAND, REDDISH-BROWN, MEDIUM TO COARSE,  
PEBBLY; DRY, OXIDIZED  
7.0 - 10.0 GRAVEL, REDDISH-BROWN, MEDIUM TO COARSE,  
SANDY; DRY, OXIDIZED  
10.0 - 42.0 SAND, REDDISH-BROWN, VERY CLAYEY, PEBBLY;  
MOIST, OXIDIZED, SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 513  
LOCATION: 111N-49W-35BBBA  
LEGAL LOCATION: NE NW NW NW SEC. 35, T. 111 N., R. 49 W.

4.0 - 19.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 514  
LOCATION: 111N-50W-03ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 03, T. 111 N., R. 50 W.

6.0 - 11.0 GRAVEL, BROWN, COARSE, MODERATELY SORTED;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 515  
LOCATION: 111N-50W-03CDCD  
LEGAL LOCATION: SE SW SE SW SEC. 03, T. 111 N., R. 50 W.

10.0 - 15.0 GRAVEL, GRAY, MEDIUM TO COARSE, SANDY;  
SATURATED, UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 516  
LOCATION: 111N-50W-04DCDD  
LEGAL LOCATION: SE SE SW SE SEC. 04, T. 111 N., R. 50 W.

8.0 - 15.0 SAND AND GRAVEL, WHITISH; CLEAN

\* \* \* \*

TEST HOLE NUMBER: 517  
LOCATION: 111N-50W-09DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 09, T. 111 N., R. 50 W.

0 - 4.0 SAND, BROWN, FINE TO MEDIUM, PEBBLY; DRY,  
OXIDIZED, DIRTY

\* \* \* \*

TEST HOLE NUMBER: 518  
LOCATION: 111N-50W-11BAAA  
LEGAL LOCATION: NE NE NE NW SEC. 11, T. 111 N., R. 50 W.

2.0 - 4.0 GRAVEL, BROWN, FINE, SANDY, MODERATELY  
SORTED; DRY, OXIDIZED

6.0 - 37.0 GRAVEL, BROWN, MEDIUM, MODERATELY SORTED;  
SATURATED, OXIDIZED, SOME CLAY LAYERS

\* \* \* \*

TEST HOLE NUMBER: 519  
LOCATION: 111N-50W-16BBAA  
LEGAL LOCATION: NE NE NW NW SEC. 16, T. 111 N., R. 50 W.

5.0 - 12.0 GRAVEL, BROWN, MEDIUM, SANDY; MOIST,  
OXIDIZED, SATURATED AT 8 FEET

\* \* \* \*

TEST HOLE NUMBER: 520  
LOCATION: 111N-50W-17DDCC  
LEGAL LOCATION: SW SW SE SE SEC. 17, T. 111 N., R. 50 W.

4.0 - 9.0 SAND, DARK-BROWN, FINE; SATURATED,  
OXIDIZED, VERY DIRTY

\* \* \* \*

TEST HOLE NUMBER: 521  
LOCATION: 111N-50W-17DDDD 1  
LEGAL LOCATION: SE SE SE SE SEC. 17, T. 111 N., R. 50 W.

4.0 - 15.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 522  
LOCATION: 111N-50W-17DDDD 2  
LEGAL LOCATION: SE SE SE SE SEC. 17, T. 111 N., R. 50 W.

4.0 - 15.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 523  
LOCATION: 111N-50W-21BAAB  
LEGAL LOCATION: NW NE NE NW SEC. 21, T. 111 N., R. 50 W.

5.0 - 30.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED, SATURATED AT 12 FEET

\* \* \* \*

TEST HOLE NUMBER: 524  
LOCATION: 111N-50W-25BBAA  
LEGAL LOCATION: NE NE NW NW SEC. 25, T. 111 N., R. 50 W.

4.0 - 6.0 SAND, BROWN, MEDIUM, CLAYEY; SATURATED,  
OXIDIZED

7.0 - 17.0 GRAVEL, BROWN, MEDIUM; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 525  
LOCATION: 111N-50W-26BAAA  
LEGAL LOCATION: NE NE NE NW SEC. 26, T. 111 N., R. 50 W.

6.0 - 10.0 SAND, REDDISH-BROWN, FINE, WELL SORTED;  
DRY, OXIDIZED

10.0 - 15.0 GRAVEL, REDDISH-BROWN, COARSE; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 526  
LOCATION: 111N-50W-29ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 29, T. 111 N., R. 50 W.

5.0 - 19.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;  
SATURATED, OXIDIZED, SOME COARSE GRAVEL  
AT 14 FEET

\* \* \* \*

TEST HOLE NUMBER: 527  
LOCATION: 111N-50W-30DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 30, T. 111 N., R. 50 W.

4.0 - 15.0 GRAVEL, YELLOW-BROWN, COARSE

\* \* \* \*

TEST HOLE NUMBER: 528  
LOCATION: 111N-50W-34ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 34, T. 111 N., R. 50 W.

4.0 - 12.0 GRAVEL, GRAY, MEDIUM, WELL SORTED;  
SATURATED, UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 529  
LOCATION: 111N-50W-34BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 34, T. 111 N., R. 50 W.

4.0 - 23.0 GRAVEL, MEDIUM, SANDY  
23.0 - 40.0 SAND, VERY FINE, CLAYEY

\* \* \* \*

TEST HOLE NUMBER: 530  
LOCATION: 111N-50W-35BBAA  
LEGAL LOCATION: NE NE NW NW SEC. 35, T. 111 N., R. 50 W.

11.0 - 20.0 SAND, BROWN, MEDIUM, CLAYEY; SATURATED,  
OXIDIZED  
20.0 - 24.0 GRAVEL, BROWN, COARSE; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 531  
LOCATION: 111N-51W-01AA  
LEGAL LOCATION: NE NE SEC. 01, T. 111 N., R. 51 W.

2.0 - 8.0 SAND  
8.0 - 22.0 SAND, COARSE  
22.0 - 38.0 SAND AND GRAVEL, COARSE

\* \* \* \*

TEST HOLE NUMBER: 532  
LOCATION: 111N-51W-01ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 01, T. 111 N., R. 51 W.

1.0 - 35.0 SAND AND GRAVEL, SILTY

\* \* \* \*

TEST HOLE NUMBER: 533  
LOCATION: 111N-51W-01CC  
LEGAL LOCATION: SW SW SEC. 01, T. 111 N., R. 51 W.

5.0 - 10.0 SAND, FINE  
10.0 - 30.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 534  
LOCATION: 111N-51W-04BBAA  
LEGAL LOCATION: NE NE NW NW SEC. 04, T. 111 N., R. 51 W.

2.0 - 6.0 SAND, FINE TO COARSE; WITH LIGHT-BROWN,  
SILTY CLAY

\* \* \* \*

TEST HOLE NUMBER: 535  
LOCATION: 111N-51W-04BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 04, T. 111 N., R. 51 W.

3.0 - 7.0 GRAVEL, YELLOW-BROWN

\* \* \* \*

TEST HOLE NUMBER: 536  
LOCATION: 111N-51W-05CACC  
LEGAL LOCATION: SW SW NE SW SEC. 05, T. 111 N., R. 51 W.

2.0 - 6.0 SAND, MEDIUM; WITH A LITTLE GRAVEL, SILT,  
AND CLAY

\* \* \* \*

TEST HOLE NUMBER: 537  
LOCATION: 111N-51W-05CADB  
LEGAL LOCATION: NW SE NE SW SEC. 05, T. 111 N., R. 51 W.

3.0 - 7.0 SAND; SOME SILT AND CLAY

\* \* \* \*

TEST HOLE NUMBER: 538  
LOCATION: 111N-51W-05CBCD  
LEGAL LOCATION: SE SW NW SW SEC. 05, T. 111 N., R. 51 W.

6.0 - 21.0 SAND AND GRAVEL, FINE TO COARSE SAND AND  
FINE TO MEDIUM GRAVEL  
21.0 - 54.0 SAND, GRAVEL, AND CLAY, FINE TO COARSE  
SAND, FINE TO COARSE GRAVEL, AND GRAY,  
SILTY, SANDY CLAY, FINELY INTERLAYERED  
(VERY SILTY FROM 21 TO 24 FEET)

\* \* \* \*

TEST HOLE NUMBER: 539  
LOCATION: 111N-51W-05CC  
LEGAL LOCATION: SW SW SEC. 05, T. 111 N., R. 51 W.

3.0 - 9.0 SAND, FINE, WELL-SORTED; STRATIFICATION  
EVIDENT, 3/4-INCH COARSE LAYER OF  
GRAVEL IN SAMPLE

\* \* \* \*

TEST HOLE NUMBER: 540  
LOCATION: 111N-51W-05CC 1  
LEGAL LOCATION: SW SW SEC. 05, T. 111 N., R. 51 W.

5.0 - 14.0 SAND, COARSE AT TOP GRADES TO FINE; THEN  
TO COARSE SAND AND GRAVEL, BACK TO FINE  
SAND, FINALLY BACK TO COARSE SAND AND  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 541  
LOCATION: 111N-51W-05CC 2  
LEGAL LOCATION: SW SW SEC. 05, T. 111 N., R. 51 W.

5.0 - 14.0 SAND, COARSE AT TOP, GRADES TO FINE; THEN  
TO COARSE SAND AND GRAVEL, THEN BACK TO  
FINE SAND, FINALLY BACK TO COARSE SAND  
AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 542  
LOCATION: 111N-51W-05CD 1  
LEGAL LOCATION: SE SW SEC. 05, T. 111 N., R. 51 W.

4.0 - 6.0 SAND, FINE TO MEDIUM  
15.0 - 18.0 SAND, BROWN, FINE TO MEDIUM; WITH FINE  
GRAVEL LAYERS

\* \* \* \*

TEST HOLE NUMBER: 543  
LOCATION: 111N-51W-05CDBD  
LEGAL LOCATION: SE NW SE SW SEC. 05, T. 111 N., R. 51 W.

2.0 - 7.0 SAND; SOME SILT AND CLAY  
7.0 - 10.0 SAND AND GRAVEL, MEDIUM TO COARSE SAND  
AND MEDIUM TO COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 544  
LOCATION: 111N-51W-05CDDB  
LEGAL LOCATION: NW SE SE SW SEC. 05, T. 111 N., R. 51 W.

5.0 - 9.0 SAND, BROWN, FINE, WELL SORTED; MOIST,  
OXIDIZED, SOME SMALL CLAY LAYERS

\* \* \* \*

TEST HOLE NUMBER: 545  
LOCATION: 111N-51W-07CBCC  
LEGAL LOCATION: SW SW NW SW SEC. 07, T. 111 N., R. 51 W.

6.0 - 31.0 SAND, BROWN, MEDIUM, PEBBLY; DRY,  
OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 546  
LOCATION: 111N-51W-07CDCD  
LEGAL LOCATION: SE SW SE SW SEC. 07, T. 111 N., R. 51 W.

19.0 - 24.0 SAND, BROWN, MEDIUM, MODERATELY SORTED;  
DRY, OXIDIZED  
24.0 - 57.0 SAND, BROWN, FINE, WELL SORTED; DRY,  
OXIDIZED, SATURATED AT 27 FEET

\* \* \* \*

TEST HOLE NUMBER: 547  
LOCATION: 111N-51W-08CDBB  
LEGAL LOCATION: NW NW SE SW SEC. 08, T. 111 N., R. 51 W.

13.0 - 15.0 GRAVEL, MEDIUM TO VERY COARSE, SANDY;  
DRY, OXIDIZED, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 548  
LOCATION: 111N-51W-10BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 10, T. 111 N., R. 51 W.

0 - 11.0 SAND, BROWN, MEDIUM TO COARSE, SILTY;  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 549  
LOCATION: 111N-51W-10CBBC  
LEGAL LOCATION: SW NW NW SW SEC. 10, T. 111 N., R. 51 W.

0 - 40.0 GRAVEL, FINE TO COARSE, SANDY; GRAINS  
ANGULAR TO SUBANGULAR CARBONATE  
(DOLOMITIC), BLACK CRYSTALLINE, AND  
BLACK MUDSTONE FRAGMENTS

\* \* \* \*

TEST HOLE NUMBER: 550  
LOCATION: 111N-51W-10CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 10, T. 111 N., R. 51 W.

2.0 - 18.0 SAND, COARSE; FINE GRAVEL  
22.0 - 25.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 551  
LOCATION: 111N-51W-11BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 11, T. 111 N., R. 51 W.

0 - 2.0 SAND, BROWN, MEDIUM, SILTY, PEBBLY; DRY,  
OXIDIZED  
11.0 - 13.0 GRAVEL, BROWN, FINE TO MEDIUM, SANDY;  
DRY, OXIDIZED  
17.0 - 32.0 SAND, BROWN, MEDIUM, PEBBLY; MOIST,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 552  
LOCATION: 111N-51W-11CC  
LEGAL LOCATION: SW SW SEC. 11, T. 111 N., R. 51 W.

3.0 - 8.0 SAND; SOME CLAY AND SILT  
8.0 - 40.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 553  
LOCATION: 111N-51W-12CDDA  
LEGAL LOCATION: NE SE SE SW SEC. 12, T. 111 N., R. 51 W.

1.0 - 6.0 GRAVEL, MEDIUM TO COARSE, SOME VERY  
COARSE, ROUNDED  
6.0 - 12.0 SAND, MEDIUM TO COARSE  
12.0 - 20.0 GRAVEL, MEDIUM TO COARSE  
20.0 - 25.0 SAND, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 554  
LOCATION: 111N-51W-12DCCC 1  
LEGAL LOCATION: SW SW SW SE SEC. 12, T. 111 N., R. 51 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

1.0 - 32.0 SAND AND GRAVEL, SAND, VERY FINE TO  
MEDIUM, COARSENING TO FINE GRAVEL WITH  
DEPTH; SOME LIGHT-GRAY CLAY AT DEPTH

\* \* \* \*

TEST HOLE NUMBER: 555  
LOCATION: 111N-51W-12DCCC 2  
LEGAL LOCATION: SW SW SW SE SEC. 12, T. 111 N., R. 51 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

2.0 - 43.0 SAND, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 556  
LOCATION: 111N-51W-13AABB  
LEGAL LOCATION: NW NW NE NE SEC. 13, T. 111 N., R. 51 W.



0 - 1.0 SAND, BROWN, FINE, WELL SORTED; DRY,  
OXIDIZED  
1.0 - 4.0 SAND, BROWN, FINE, SILTY, WELL SORTED;  
MOIST, OXIDIZED  
4.0 - 27.0 GRAVEL, BROWN, MEDIUM, SANDY, MODERATELY  
SORTED; MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 557  
LOCATION: 111N-51W-13CC  
LEGAL LOCATION: SW SW SEC. 13, T. 111 N., R. 51 W.

6.0 - 35.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 558  
LOCATION: 111N-51W-14AA  
LEGAL LOCATION: NE NE SEC. 14, T. 111 N., R. 51 W.

3.0 - 7.0 SAND; SOME SILT AND CLAY  
7.0 - 42.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 559  
LOCATION: 111N-51W-15DD  
LEGAL LOCATION: SE SE SEC. 15, T. 111 N., R. 51 W.

4.0 - 24.0 SAND; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 560  
LOCATION: 111N-51W-16AADD  
LEGAL LOCATION: SE SE NE NE SEC. 16, T. 111 N., R. 51 W.

22.0 - 37.0 GRAVEL, VERY FINE TO COARSE, SANDY;  
GRAINS ANGULAR TO SUBANGULAR CARBONATE  
(DOLOMITIC), AND BLACK SILICATE ROCK  
FRAGMENTS

\* \* \* \*

TEST HOLE NUMBER: 561  
LOCATION: 111N-51W-16ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 16, T. 111 N., R. 51 W.

5.0 - 7.0 GRAVEL, VERY FINE TO COARSE, SANDY;  
CARBONATE (DOLOMITIC), AND VARIOUS  
SILICATE ROCK FRAGMENTS, HIGHLY  
OXIDIZED  
20.0 - 73.0 SAND AND GRAVEL, SAND IS COARSE TO VERY

COARSE, GRAVEL IS VERY FINE TO COARSE;  
SAND IS SUBROUNDED QUARTZ, GRAVEL IS  
ANGULAR TO SUBANGULAR CARBONATE AND  
BLACK CRYSTALLINE ROCK FRAGMENTS

\* \* \* \*

TEST HOLE NUMBER: 562  
LOCATION: 111N-51W-16BAAA  
LEGAL LOCATION: NE NE NE NW SEC. 16, T. 111 N., R. 51 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

1.0 - 80.0 SAND AND GRAVEL, MEDIUM SAND TO COARSE  
GRAVEL, CHANGING TO GRAVEL ONLY WITH  
DEPTH; WITH COBBLES IN LOWEST 20 FEET;  
SMALL AMOUNT OF LIGHT-GRAYISH-BROWN,  
SILTY, SANDY, CALCAREOUS CLAY PRESENT  
THROUGHOUT

\* \* \* \*

TEST HOLE NUMBER: 563  
LOCATION: 111N-51W-17ADAA  
LEGAL LOCATION: NE NE SE NE SEC. 17, T. 111 N., R. 51 W.

4.0 - 11.0 SAND, BROWN, MEDIUM, SILTY, VERY CLAYEY;  
SATURATED, OXIDIZED, SOME GRAVEL  
11.0 - 29.0 SAND, BROWN, COARSE, GRAVELLY; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 564  
LOCATION: 111N-51W-23AA  
LEGAL LOCATION: NE NE SEC. 23, T. 111 N., R. 51 W.

2.0 - 7.0 SAND AND GRAVEL; DRY  
7.0 - 45.0 SAND AND GRAVEL; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 565  
LOCATION: 111N-51W-24AB  
LEGAL LOCATION: NW NE SEC. 24, T. 111 N., R. 51 W.

4.0 - 9.0 GRAVEL, RED; DRY  
9.0 - 37.0 SAND AND GRAVEL; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 566  
LOCATION: 111N-51W-25BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 25, T. 111 N., R. 51 W.

2.0 - 27.0 SAND, BROWN, FINE, SILTY; DRY, OXIDIZED,  
SOME GRAVEL, SATURATED AT 11 FEET

\* \* \* \*

TEST HOLE NUMBER: 567  
LOCATION: 111N-51W-25CCBC  
LEGAL LOCATION: SW NW SW SW SEC. 25, T. 111 N., R. 51 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

1.0 - 16.0 SAND AND GRAVEL, MEDIUM SAND TO COARSE  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 568  
LOCATION: 111N-51W-25DD  
LEGAL LOCATION: SE SE SEC. 25, T. 111 N., R. 51 W.

12.0 - 22.0 SAND, FINE  
22.0 - 42.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 569  
LOCATION: 111N-51W-26BB  
LEGAL LOCATION: NW NW SEC. 26, T. 111 N., R. 51 W.

4.0 - 25.0 SAND; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 570  
LOCATION: 111N-51W-27AA  
LEGAL LOCATION: NE NE SEC. 27, T. 111 N., R. 51 W.

6.0 - 25.0 GRAVEL, VERY COARSE; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 571  
LOCATION: 111N-51W-32DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 32, T. 111 N., R. 51 W.

2.0 - 3.0 SAND, BROWN, COARSE; MOIST, OXIDIZED  
8.0 - 12.0 SAND, BROWN, COARSE, VERY CLAYEY;  
SATURATED, OXIDIZED  
12.0 - 22.0 GRAVEL, BROWN, MEDIUM, SANDY; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 572  
LOCATION: 111N-51W-35BA

LEGAL LOCATION: NE NW SEC. 35, T. 111 N., R. 51 W.

20.0 - 35.0 SAND; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 573

LOCATION: 111N-51W-36BBBB

LEGAL LOCATION: NW NW NW NW SEC. 36, T. 111 N., R. 51 W.

3.0 - 18.0 GRAVEL, MEDIUM

\* \* \* \*

TEST HOLE NUMBER: 574

LOCATION: 111N-51W-36CCCC

LEGAL LOCATION: SW SW SW SW SEC. 36, T. 111 N., R. 51 W.

7.0 - 22.0 GRAVEL, GRAY, MEDIUM, SANDY; SATURATED,  
UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 575

LOCATION: 111N-51W-36DDDD

LEGAL LOCATION: SE SE SE SE SEC. 36, T. 111 N., R. 51 W.

1.0 - 9.0 SAND, BROWN, MEDIUM; SATURATED, OXIDIZED  
9.0 - 17.0 GRAVEL, GRAY, MEDIUM, SANDY; SATURATED,  
UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 576

LOCATION: 111N-52W-01BCCB

LEGAL LOCATION: NW SW SW NW SEC. 01, T. 111 N., R. 52 W.

3.0 - 4.0 SAND, BROWN, MEDIUM; DRY, OXIDIZED  
19.0 - 26.0 GRAVEL, BROWN, COARSE, SANDY, CLAYEY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 577

LOCATION: 111N-52W-01CDCD

LEGAL LOCATION: SE SW SE SW SEC. 01, T. 111 N., R. 52 W.

16.0 - 18.0 SAND, MEDIUM TO VERY COARSE; GRAINS  
MOSTLY SUBROUNDED QUARTZ, MAY BE A  
THIN CLAY LAYER BELOW SAND  
18.0 - 24.0 GRAVEL, VERY FINE TO MEDIUM, SANDY;  
GRAINS ANGULAR TO SUBANGULAR, MOSTLY  
CARBONATE, BLACK CRYSTALLINE, AND  
MISCELLANEOUS CRYSTALLINE ROCK

FRAGMENTS

\* \* \* \*

TEST HOLE NUMBER: 578  
LOCATION: 111N-52W-01DCBB  
LEGAL LOCATION: NW NW SW SE SEC. 01, T. 111 N., R. 52 W.

3.0 - 14.0 SAND, FINE TO MEDIUM; COARSENS DOWNWARD  
TO MEDIUM TO COARSE SAND AND GRAVEL,  
REDDISH-BROWN FROM 3 TO 9 FEET

\* \* \* \*

TEST HOLE NUMBER: 579  
LOCATION: 111N-52W-01DDCD  
LEGAL LOCATION: SE SW SE SE SEC. 01, T. 111 N., R. 52 W.

1.0 - 12.0 GRAVEL, REDDISH-BROWN, COARSE, VERY  
SANDY; DRY, OXIDIZED  
17.0 - 26.0 SAND, GRAYISH-BROWN, COARSE, VERY CLAYEY;  
SATURATED, OXIDIZED, SOME CLAY LAYERS

\* \* \* \*

TEST HOLE NUMBER: 580  
LOCATION: 111N-52W-12AABA  
LEGAL LOCATION: NE NW NE NE SEC. 12, T. 111 N., R. 52 W.

2.0 - 24.0 GRAVEL, VERY FINE TO MEDIUM, SANDY;  
GRAINS SUBANGULAR TO ANGULAR, MOSTLY  
CARBONATE, BLACK CRYSTALLINE, AND  
MISCELLANEOUS SILICATE ROCK FRAGMENTS;  
CONTAINS CLAY LAYERS FROM 13 TO 24 FEET

\* \* \* \*

TEST HOLE NUMBER: 581  
LOCATION: 111N-52W-12DDAB  
LEGAL LOCATION: NW NE SE SE SEC. 12, T. 111 N., R. 52 W.

2.0 - 63.0 SAND AND GRAVEL, FINE TO MEDIUM SAND,  
MEDIUM TO COARSE GRAVEL, MOSTLY WELL-  
SORTED SAND; OCCASIONALLY SOME CLAY IN  
RETURN

\* \* \* \*

TEST HOLE NUMBER: 582  
LOCATION: 111N-52W-12DDAC  
LEGAL LOCATION: SW NE SE SE SEC. 12, T. 111 N., R. 52 W.

3.0 - 15.0 SAND AND GRAVEL, DARK-BROWN, FINE,  
COARSER AT 8 FEET

\* \* \* \*

TEST HOLE NUMBER: 583  
LOCATION: 111N-52W-12DDCB  
LEGAL LOCATION: NW SW SE SE SEC. 12, T. 111 N., R. 52 W.

2.0 - 65.0 SAND AND GRAVEL, MEDIUM-GRAINED SAND  
THROUGHOUT; SAND WITH SOME GRAVEL AT  
2 TO 35 FEET; MORE GRAVEL AT 35 TO 44  
FEET

\* \* \* \*

TEST HOLE NUMBER: 584  
LOCATION: 111N-52W-12DDCC 1  
LEGAL LOCATION: SW SW SE SE SEC. 12, T. 111 N., R. 52 W.

5.0 - 38.0 SAND, REDDISH-BROWN, COARSE, GRAVELLY;  
DRY, OXIDIZED, SOME SMALL CLAY LAYERS

\* \* \* \*

TEST HOLE NUMBER: 585  
LOCATION: 111N-52W-12DDCC 2  
LEGAL LOCATION: SW SW SE SE SEC. 12, T. 111 N., R. 52 W.

9.0 - 46.0 SAND, LIGHT-BROWN AND BROWN, MEDIUM,  
WELL-SORTED; WET AT 43 FEET, SOME TO  
LITTLE GRAVEL, SOME IRON STAINING,  
OCCASIONAL PEBBLES AND LAYERS OF WELL-  
SORTED, FINE SAND; AT 35 FEET WELL-  
SORTED, FINE TO MEDIUM, SAND

\* \* \* \*

TEST HOLE NUMBER: 586  
LOCATION: 111N-52W-12DDDA 1  
LEGAL LOCATION: NE SE SE SE SEC. 12, T. 111 N., R. 52 W.

1.0 - 34.0 SAND, FINE TO MEDIUM, WELL-SORTED; LITTLE  
GRAVEL, OCCASIONAL ALTERNATING LAYERS  
OF FINE SAND OR COARSER MATERIAL -  
GRAVEL AND/OR PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 587  
LOCATION: 111N-52W-12DDDA 2  
LEGAL LOCATION: NE SE SE SE SEC. 12, T. 111 N., R. 52 W.

12.0 - 15.0 SAND AND GRAVEL, DARK-BROWN, MEDIUM

\* \* \* \*

TEST HOLE NUMBER: 588  
LOCATION: 111N-52W-12DDDC  
LEGAL LOCATION: SW SE SE SE SEC. 12, T. 111 N., R. 52 W.

2.0 - 33.0 SAND AND GRAVEL, BROWN; SOME CLAY FROM  
27 TO 33 FEET

\* \* \* \*

TEST HOLE NUMBER: 589  
LOCATION: 111N-52W-12DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 12, T. 111 N., R. 52 W.

8.0 - 12.0 SAND AND GRAVEL, FINE TO COARSE;  
QUESTIONABLE SINCE NO SAMPLE WAS TAKEN  
DUE TO COBBLE  
23.0 - 39.0 SAND, FINE TO MEDIUM, WELL-SORTED; SOME  
GRAVEL, OCCASIONAL THIN LAYERS OF SILT  
AND CLAY OR COARSE GRAVEL, VERY COARSE  
LAYER OF PEBBLES AT 31 FEET, WET AT 35  
FEET

\* \* \* \*

TEST HOLE NUMBER: 590  
LOCATION: 112N-47W-05CBCC  
LEGAL LOCATION: SW SW NW SW SEC. 05, T. 112 N., R. 47 W.

16.0 - 19.0 SAND, GRAY, FINE, VERY SILTY, POORLY  
SORTED; SATURATED, UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 591  
LOCATION: 112N-47W-16DCDD  
LEGAL LOCATION: SE SE SW SE SEC. 16, T. 112 N., R. 47 W.

4.0 - 5.0 GRAVEL, BROWN, COARSE; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 592  
LOCATION: 112N-47W-19CCDD  
LEGAL LOCATION: SE SE SW SW SEC. 19, T. 112 N., R. 47 W.

6.0 - 14.0 GRAVEL, BROWN, FINE, SANDY; SATURATED,  
OXIDIZED  
14.0 - 22.0 GRAVEL, BROWN, COARSE, SANDY; SATURATED,  
OXIDIZED  
22.0 - 43.0 SAND, BROWN, FINE TO MEDIUM, CLAYEY;  
SATURATED, OXIDIZED, SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 593  
LOCATION: 112N-47W-29CDCC  
LEGAL LOCATION: SW SW SE SW SEC. 29, T. 112 N., R. 47 W.

17.0 - 31.0 GRAVEL, GRAY, MEDIUM TO COARSE, SANDY;  
SATURATED, UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 594  
LOCATION: 112N-48W-02CDCC  
LEGAL LOCATION: SW SE SE SW SEC. 02, T. 112 N., R. 48 W.

0 - 11.0 SAND, BROWN, FINE TO MEDIUM, SILTY,  
PEBBLY; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 595  
LOCATION: 112N-48W-02DADD  
LEGAL LOCATION: SE SE NE SE SEC. 02, T. 112 N., R. 48 W.

4.0 - 6.0 GRAVEL, REDDISH-BROWN, MEDIUM, VERY  
SANDY, POORLY SORTED; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 596  
LOCATION: 112N-48W-04AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 04, T. 112 N., R. 48 W.

5.0 - 16.0 SAND, LIGHT-BROWN, MEDIUM TO COARSE,  
POORLY SORTED; MOIST, OXIDIZED,  
SATURATED AT 7 FEET  
16.0 - 21.0 GRAVEL, GRAY, COARSE; SATURATED,  
UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 597  
LOCATION: 112N-48W-10DCDC  
LEGAL LOCATION: SW SE SW SE SEC. 10, T. 112 N., R. 48 W.

6.0 - 9.0 GRAVEL, DARK-BROWN, MEDIUM, SANDY, VERY  
CLAYEY, POORLY SORTED; SATURATED,  
OXIDIZED  
9.0 - 15.0 GRAVEL, BROWN, COARSE TO VERY COARSE,  
SANDY, POORLY SORTED; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 598  
LOCATION: 112N-48W-13ACCC



LEGAL LOCATION: SW SW SW NE SEC. 13, T. 112 N., R. 48 W.

5.0 - 17.0 SAND, BROWN, MEDIUM, SILTY, PEBBLY;  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 599

LOCATION: 112N-48W-13BBBB

LEGAL LOCATION: NW NW NW NW SEC. 13, T. 112 N., R. 48 W.

4.0 - 6.0 GRAVEL, BROWN, COARSE, SILTY, CLAYEY;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 600

LOCATION: 112N-48W-26ABAA

LEGAL LOCATION: NE NE NW NE SEC. 26, T. 112 N., R. 48 W.

15.0 - 48.0 GRAVEL, GRAY, MEDIUM, SILTY, POORLY  
SORTED; SATURATED, UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 601

LOCATION: 112N-48W-28AAAA

LEGAL LOCATION: NE NE NE NE SEC. 28, T. 112 N., R. 48 W.

4.0 - 7.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 602

LOCATION: 112N-48W-30AAAA

LEGAL LOCATION: NE NE NE NE SEC. 30, T. 112 N., R. 48 W.

0 - 4.0 GRAVEL, LIGHT-BROWN, VERY COARSE, SANDY,  
COBBLY; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 603

LOCATION: 112N-48W-31DCCC

LEGAL LOCATION: SW SW SW SE SEC. 31, T. 112 N., R. 48 W.

4.0 - 7.0 SAND, LIGHT-BROWN, FINE, SILTY; DRY,  
OXIDIZED

7.0 - 11.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 604  
LOCATION: 112N-48W-32CBBB  
LEGAL LOCATION: NW NW NW SW SEC. 32, T. 112 N., R. 48 W.

0 - 5.0 GRAVEL, BROWN, VERY COARSE, SANDY,  
COBBLY; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 605  
LOCATION: 112N-48W-32CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 32, T. 112 N., R. 48 W.

3.0 - 6.0 SAND, BROWN, MEDIUM; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 606  
LOCATION: 112N-49W-01ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 01, T. 112 N., R. 49 W.

0 - 7.0 SAND, BROWN, FINE; DRY, OXIDIZED, SOME  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 607  
LOCATION: 112N-49W-05CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 05, T. 112 N., R. 49 W.

5.0 - 8.0 SAND, BROWN, FINE, WELL SORTED; DRY,  
OXIDIZED  
8.0 - 21.0 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED,  
SATURATED AT 18 FEET

\* \* \* \*

TEST HOLE NUMBER: 608  
LOCATION: 112N-49W-06AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 06, T. 112 N., R. 49 W.

10.0 - 15.0 SAND AND GRAVEL, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 609  
LOCATION: 112N-49W-06BBAA  
LEGAL LOCATION: NE NE NW NW SEC. 06, T. 112 N., R. 49 W.

0 - 4.0 GRAVEL, BROWN, MEDIUM, SANDY; DRY,  
OXIDIZED  
9.0 - 16.0 GRAVEL, BROWN, MEDIUM, SANDY; DRY,  
OXIDIZED, SATURATED AT 12 FEET

\* \* \* \*

TEST HOLE NUMBER: 610  
LOCATION: 112N-49W-07ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 07, T. 112 N., R. 49 W.

1.0 -	5.0	GRAVEL, BROWN, MEDIUM TO COARSE, VERY SILTY, SANDY, POORLY SORTED; DRY, OXIDIZED
5.0 -	11.0	SAND, REDDISH-BROWN, MEDIUM; MOIST, OXIDIZED
11.0 -	18.0	GRAVEL, BROWN, MEDIUM, SILTY, SANDY, POORLY SORTED; SATURATED, OXIDIZED
18.0 -	21.0	GRAVEL, BROWN, COARSE, SANDY; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 611  
LOCATION: 112N-49W-08AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 08, T. 112 N., R. 49 W.

0 -	6.0	GRAVEL, BROWN, COARSE, SILTY, SANDY, POORLY SORTED; MOIST, OXIDIZED
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\* \* \* \*

TEST HOLE NUMBER: 612  
LOCATION: 112N-49W-14CBCC  
LEGAL LOCATION: SW SW NW SW SEC. 14, T. 112 N., R. 49 W.

9.0 -	11.0	GRAVEL, BROWN, MEDIUM, SANDY; MOIST, OXIDIZED
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\* \* \* \*

TEST HOLE NUMBER: 613  
LOCATION: 112N-49W-15BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 15, T. 112 N., R. 49 W.

0 -	2.0	GRAVEL, REDDISH-BROWN, MEDIUM, SANDY, MODERATELY SORTED; MOIST, OXIDIZED
6.0 -	35.0	GRAVEL, BROWN, MEDIUM, SANDY, CLAYEY, WELL SORTED; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 614  
LOCATION: 112N-49W-16BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 16, T. 112 N., R. 49 W.

2.0 -	21.0	SAND, MEDIUM TO COARSE, SUBANGULAR AND SUBROUNDED
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\* \* \* \*

TEST HOLE NUMBER: 615  
LOCATION: 112N-49W-19BAAA  
LEGAL LOCATION: NE NE NE NW SEC. 19, T. 112 N., R. 49 W.

4.0 - 17.0 SAND, BROWN, MEDIUM; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 616  
LOCATION: 112N-49W-21AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 21, T. 112 N., R. 49 W.

4.0 - 16.0 SAND, DARK-BROWN, MEDIUM, MODERATELY  
SORTED; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 617  
LOCATION: 112N-49W-28DDAA  
LEGAL LOCATION: NE NE SE SE SEC. 28, T. 112 N., R. 49 W.

1.0 - 4.0 GRAVEL, RED; OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 618  
LOCATION: 112N-49W-29BBBA  
LEGAL LOCATION: NE NW NW NW SEC. 29, T. 112 N., R. 49 W.

6.0 - 9.0 GRAVEL, DARK-BROWN, MEDIUM, SANDY; MOIST,  
OXIDIZED, DIRTY  
9.0 - 21.0 SAND, BROWN, COARSE; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 619  
LOCATION: 112N-49W-29CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 29, T. 112 N., R. 49 W.

3.0 - 37.0 SAND, GRAY, MEDIUM, SILTY, POORLY SORTED;  
SATURATED, UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 620  
LOCATION: 112N-49W-32CDDC  
LEGAL LOCATION: SW SE SE SW SEC. 32, T. 112 N., R. 49 W.

0 - 4.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
MOIST, OXIDIZED  
6.0 - 15.0 SAND, BROWN, MEDIUM, PEBBLY; SATURATED,  
OXIDIZED

15.0 - 19.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 621  
LOCATION: 112N-49W-33BABB  
LEGAL LOCATION: NW NW NE NW SEC. 33, T. 112 N., R. 49 W.

2.0 - 6.0 SAND, GRAY, MEDIUM, POORLY SORTED; MOIST

\* \* \* \*

TEST HOLE NUMBER: 622  
LOCATION: 112N-50W-05ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 05, T. 112 N., R. 50 W.

1.0 - 11.0 SAND, GRAY, FINE TO MEDIUM, SILTY; MOIST,  
UNOXIDIZED, SOME PEBBLES, SATURATED AT  
5 FEET

\* \* \* \*

TEST HOLE NUMBER: 623  
LOCATION: 112N-50W-05CDCD  
LEGAL LOCATION: SE SW SE SW SEC. 05, T. 112 N., R. 50 W.

8.0 - 40.0 SAND AND GRAVEL, COARSE

\* \* \* \*

TEST HOLE NUMBER: 624  
LOCATION: 112N-50W-06CCCD  
LEGAL LOCATION: SE SW SW SW SEC. 06, T. 112 N., R. 50 W.

3.0 - 34.0 GRAVEL, DARK-BROWN, MEDIUM, MODERATELY  
SORTED; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 625  
LOCATION: 112N-50W-12AABA  
LEGAL LOCATION: NE NW NE NE SEC. 12, T. 112 N., R. 50 W.

5.0 - 8.0 SAND, GRAY, FINE, WELL SORTED; SATURATED,  
UNOXIDIZED

8.0 - 11.0 GRAVEL, GRAY, COARSE; SATURATED,  
UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 626  
LOCATION: 112N-50W-13DCDC  
LEGAL LOCATION: SW SE SW SE SEC. 13, T. 112 N., R. 50 W.

0 - 7.0 GRAVEL, BROWN, MEDIUM, VERY SANDY; DRY,  
OXIDIZED, MOIST AT 4 FEET

\* \* \* \*

TEST HOLE NUMBER: 627  
LOCATION: 112N-50W-13DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 13, T. 112 N., R. 50 W.

0 - 33.0 GRAVEL, COARSE; WITH BOULDERS,  
SUBANGULAR; HIGH PERCENT OF SHALE AND  
LIMESTONE PARTICLES

\* \* \* \*

TEST HOLE NUMBER: 628  
LOCATION: 112N-50W-16BCBB  
LEGAL LOCATION: NW NW SW NW SEC. 16, T. 112 N., R. 50 W.

1.0 - 2.0 SAND, BROWN, MEDIUM, SILTY; SATURATED,  
OXIDIZED  
2.0 - 7.0 SAND, GRAY, MEDIUM, VERY CLAYEY;  
SATURATED, UNOXIDIZED  
7.0 - 9.0 GRAVEL, GRAY, MEDIUM, MODERATELY SORTED;  
SATURATED, UNOXIDIZED, CLEAN

\* \* \* \*

TEST HOLE NUMBER: 629  
LOCATION: 112N-50W-17AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 17, T. 112 N., R. 50 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

0 - 30.0 SAND, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 630  
LOCATION: 112N-50W-18BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 18, T. 112 N., R. 50 W.

3.0 - 6.0 SAND, BROWN, COARSE, MODERATELY SORTED;  
MOIST, OXIDIZED  
6.0 - 9.0 GRAVEL, BROWN, COARSE, POORLY SORTED;  
DRY, OXIDIZED  
9.0 - 19.0 SAND, REDDISH-BROWN, MEDIUM TO COARSE,  
MODERATELY SORTED; MOIST, OXIDIZED,  
SATURATED AT 11 FEET  
19.0 - 36.0 GRAVEL, REDDISH-BROWN, FINE, SANDY,  
MODERATELY SORTED; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 631

LOCATION: 112N-50W-18CBCC

LEGAL LOCATION: SW SW NW SW SEC. 18, T. 112 N., R. 50 W.

3.0 -	21.0	SAND, FINE TO MEDIUM; FINE TO MEDIUM GRAVEL, SUBROUNDED
21.0 -	29.0	GRAVEL, MEDIUM TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 632

LOCATION: 112N-50W-18CCAC

LEGAL LOCATION: SW NE SW SW SEC. 18, T. 112 N., R. 50 W.

2.0 -	12.0	SAND, MEDIUM TO COARSE
12.0 -	30.0	GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 633

LOCATION: 112N-50W-18DCDC

LEGAL LOCATION: SW SE SW SE SEC. 18, T. 112 N., R. 50 W.

3.0 -	20.0	GRAVEL
20.0 -	30.0	SAND, FINE TO COARSE

\* \* \* \*

TEST HOLE NUMBER: 634

LOCATION: 112N-50W-19ACCC

LEGAL LOCATION: SW SW SW NE SEC. 19, T. 112 N., R. 50 W.

2.0 -	27.0	SAND, MEDIUM TO COARSE
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\* \* \* \*

TEST HOLE NUMBER: 635

LOCATION: 112N-50W-19CBBB

LEGAL LOCATION: NW NW NW SW SEC. 19, T. 112 N., R. 50 W.

7.0 -	12.0	SAND, MEDIUM; SOME CLAY, SATURATED
12.0 -	17.0	SAND, MEDIUM TO COARSE; SOME GRAVEL
17.0 -	41.0	SAND AND GRAVEL, COARSE SAND, FINE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 636

LOCATION: 112N-50W-19CBBB 1

LEGAL LOCATION: NW NW NW SW SEC. 19, T. 112 N., R. 50 W.

2.0 -	41.0	SAND AND GRAVEL
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\* \* \* \*

TEST HOLE NUMBER: 637

LOCATION: 112N-50W-19CCAA

LEGAL LOCATION: NE NE SW SW SEC. 19, T. 112 N., R. 50 W.

5.0 - 37.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 638

LOCATION: 112N-50W-19CDDD

LEGAL LOCATION: SE SE SE SW SEC. 19, T. 112 N., R. 50 W.

3.0 - 32.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 639

LOCATION: 112N-50W-19DDDB

LEGAL LOCATION: NW SE SE SE SEC. 19, T. 112 N., R. 50 W.

12.0 - 22.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 640

LOCATION: 112N-50W-19DDDC

LEGAL LOCATION: SW SE SE SE SEC. 19, T. 112 N., R. 50 W.

1.0 - 33.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 641

LOCATION: 112N-50W-20CACD

LEGAL LOCATION: SE SW NE SW SEC. 20, T. 112 N., R. 50 W.

2.0 - 20.0 GRAVEL  
20.0 - 33.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 642

LOCATION: 112N-50W-20CDD

LEGAL LOCATION: SE SE SW SE SEC. 20, T. 112 N., R. 50 W.

6.0 - 7.0 SAND, MEDIUM, SLIGHTLY CLAYEY  
7.0 - 12.0 SAND, CLAYEY; SOME MEDIUM GRAVEL, HARD,  
OXIDIZED, DRY  
12.0 - 20.0 SAND; SOME FINE TO MEDIUM GRAVEL, SOME  
CLAY, SATURATED  
20.0 - 31.0 SAND, COARSE; SOME MEDIUM GRAVEL,  
SATURATED

\* \* \* \*



TEST HOLE NUMBER: 643  
LOCATION: 112N-50W-24DDCC  
LEGAL LOCATION: SW SW SE SE SEC. 24, T. 112 N., R. 50 W.

6.0 - 7.0 GRAVEL, GRAY, MEDIUM, MODERATELY SORTED;  
MOIST, UNOXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 644  
LOCATION: 112N-50W-25CCCD  
LEGAL LOCATION: SE SW SW SW SEC. 25, T. 112 N., R. 50 W.

2.0 - 27.0 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY;  
DRY, OXIDIZED, SATURATED AT 9 FEET

\* \* \* \*

TEST HOLE NUMBER: 645  
LOCATION: 112N-50W-26CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 26, T. 112 N., R. 50 W.

5.0 - 9.0 GRAVEL, BROWN, COARSE, VERY SANDY, SILTY;  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 646  
LOCATION: 112N-50W-27DCDD  
LEGAL LOCATION: SE SE SW SE SEC. 27, T. 112 N., R. 50 W.

0 - 2.0 GRAVEL, BROWN, MEDIUM, SANDY, VERY  
CLAYEY; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 647  
LOCATION: 112N-50W-29CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 29, T. 112 N., R. 50 W.

1.0 - 35.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 648  
LOCATION: 112N-50W-29CDDC  
LEGAL LOCATION: SW SE SE SW SEC. 29, T. 112 N., R. 50 W.

16.0 - 22.0 SAND; SOME MEDIUM TO COARSE GRAVEL,  
SATURATED  
22.0 - 32.0 SAND; SOME MEDIUM TO COARSE GRAVEL,  
SLIGHTLY CLAYEY

\* \* \* \*

TEST HOLE NUMBER: 649  
LOCATION: 112N-50W-30BABB  
LEGAL LOCATION: NW NW NE NW SEC. 30, T. 112 N., R. 50 W.

5.0 - 10.0 GRAVEL, FINE  
10.0 - 53.0 SAND, COARSE

\* \* \* \*

TEST HOLE NUMBER: 650  
LOCATION: 112N-50W-30BBAC  
LEGAL LOCATION: SW NE NW NW SEC. 30, T. 112 N., R. 50 W.

2.0 - 4.0 SAND, MEDIUM TO COARSE  
4.0 - 28.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 651  
LOCATION: 112N-50W-30BBCC  
LEGAL LOCATION: SW SW NW NW SEC. 30, T. 112 N., R. 50 W.

2.0 - 51.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 652  
LOCATION: 112N-50W-30CBBC  
LEGAL LOCATION: SW NW NW SW SEC. 30, T. 112 N., R. 50 W.

3.0 - 23.0 GRAVEL  
24.0 - 29.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 653  
LOCATION: 112N-50W-31BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 31, T. 112 N., R. 50 W.

1.0 - 22.0 SAND AND GRAVEL  
22.0 - 34.0 SAND, VERY COARSE; SOME GRAVEL, FAST  
DRILLING

\* \* \* \*

TEST HOLE NUMBER: 654  
LOCATION: 112N-50W-32BAAA  
LEGAL LOCATION: NE NE NE NW SEC. 32, T. 112 N., R. 50 W.

0 - 32.0 SAND AND GRAVEL, BROWN; CLAY, BROWN FROM  
5 FEET TO 8 FEET

\* \* \* \*

TEST HOLE NUMBER: 655  
LOCATION: 112N-50W-35AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 35, T. 112 N., R. 50 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

0 - 23.0 SAND AND GRAVEL, FINE SAND TO MEDIUM  
PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 656  
LOCATION: 112N-50W-35DDCC  
LEGAL LOCATION: SW SW SE SE SEC. 35, T. 112 N., R. 50 W.

2.0 - 15.0 SAND, REDDISH-BROWN, MEDIUM TO COARSE,  
GRAVELLY; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 657  
LOCATION: 112N-51W-01AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 01, T. 112 N., R. 51 W.

2.0 - 6.0 SAND, COARSE; SUBANGULAR  
6.0 - 25.0 GRAVEL, RUST-COLOR, MEDIUM TO COARSE;  
CLEAN  
25.0 - 28.0 GRAVEL, VERY COARSE; UNKNOWN SIZE  
ESTIMATED 1 1/2- TO 2-INCH COBBLES

\* \* \* \*

TEST HOLE NUMBER: 658  
LOCATION: 112N-51W-04ADDA  
LEGAL LOCATION: NE SE SE NE SEC. 04, T. 112 N., R. 51 W.

0 - 15.0 SAND, BROWN, MEDIUM; DRY, OXIDIZED, SOME  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 659  
LOCATION: 112N-51W-04BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 04, T. 112 N., R. 51 W.

3.0 - 28.0 GRAVEL, VERY FINE TO MEDIUM, VERY SANDY;  
GRAINS ANGULAR TO SUBANGULAR CARBONATE  
(DOLOMITIC) BLACK CRYSTALLINE, AND  
LIGHTER SILICATE ROCK FRAGMENTS

\* \* \* \*

TEST HOLE NUMBER: 660  
LOCATION: 112N-51W-04BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 04, T. 112 N., R. 51 W.

1.0 - 16.0 SAND, BROWN, MEDIUM, POORLY SORTED; DRY,  
OXIDIZED  
16.0 - 27.0 GRAVEL, LIGHT-BROWN, FINE, WELL SORTED;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 661  
LOCATION: 112N-51W-05CBBB  
LEGAL LOCATION: NW NW NW SW SEC. 05, T. 112 N., R. 51 W.

2.0 - 16.0 GRAVEL, VERY FINE TO FINE WITH SOME  
MEDIUM, SANDY; GRAINS ARE SUBANGULAR,  
MOSTLY CARBONATE (DOLOMITIC), BLACK AND  
MISCELLANEOUS CRYSTALLINE ROCK  
FRAGMENTS

\* \* \* \*

TEST HOLE NUMBER: 662  
LOCATION: 112N-51W-06ADDD  
LEGAL LOCATION: SE SE SE NE SEC. 06, T. 112 N., R. 51 W.

4.0 - 8.0 SAND, REDDISH-BROWN, FINE TO MEDIUM,  
MODERATELY SORTED; DRY, OXIDIZED  
8.0 - 9.0 GRAVEL, BROWN, COARSE; DRY, OXIDIZED  
9.0 - 15.0 SAND, BROWN, FINE, WELL SORTED;  
SATURATED, OXIDIZED  
15.0 - 21.0 GRAVEL, BROWN, MEDIUM, MODERATELY SORTED;  
SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 663  
LOCATION: 112N-51W-06CCCB  
LEGAL LOCATION: NW SW SW SW SEC. 06, T. 112 N., R. 51 W.

1.0 - 26.0 GRAVEL, BROWN, COARSE, MODERATELY SORTED;  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 664  
LOCATION: 112N-51W-07CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 07, T. 112 N., R. 51 W.

7.0 - 10.0 GRAVEL, BROWN, COARSE, CLAYEY; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 665  
LOCATION: 112N-51W-08AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 08, T. 112 N., R. 51 W.

3.0 - 19.0 SAND AND GRAVEL, SAND IS MEDIUM TO VERY COARSE, GRAVEL IS VERY FINE TO FINE; SAND IS MOSTLY QUARTZ, GRAVEL IS MOSTLY CARBONATE AND DARK CRYSTALLINE ROCK FRAGMENTS

\* \* \* \*

TEST HOLE NUMBER: 666  
LOCATION: 112N-51W-08BAAB  
LEGAL LOCATION: NW NE NE NW SEC. 08, T. 112 N., R. 51 W.

5.0 - 8.0 SAND, BROWN, MEDIUM, MODERATELY SORTED; DRY, OXIDIZED, SOME FINE GRAVEL  
8.0 - 11.0 GRAVEL, REDDISH-BROWN, FINE, VERY SANDY, POORLY SORTED; MOIST, OXIDIZED  
11.0 - 24.0 GRAVEL, REDDISH-BROWN, COARSE, SANDY, POORLY SORTED; MOIST, OXIDIZED  
24.0 - 29.0 GRAVEL, REDDISH-BROWN, FINE, SANDY, MODERATELY SORTED; MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 667  
LOCATION: 112N-51W-08BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 08, T. 112 N., R. 51 W.

4.0 - 22.0 GRAVEL, VERY FINE TO FINE, SANDY; GRAINS SUBANGULAR, CARBONATE (DOLOMITIC), BLACK CRYSTALLINE, AND MISCELLANEOUS LIGHTER CRYSTALLINE ROCK FRAGMENTS

\* \* \* \*

TEST HOLE NUMBER: 668  
LOCATION: 112N-51W-08BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 08, T. 112 N., R. 51 W.

25.0 - 60.0 SAND AND GRAVEL, FINE TO COARSE SAND AND FINE TO COARSE GRAVEL; VERY SILTY GRAY CLAY (TRACE OF SAND IN SILT), FROM DRILLING APPEARS TO BE ALTERNATING LAYERS

\* \* \* \*

TEST HOLE NUMBER: 669  
LOCATION: 112N-51W-08DDDD 1  
LEGAL LOCATION: SE SE SE SE SEC. 08, T. 112 N., R. 51 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

25.0 - 82.0 SAND AND GRAVEL, FINE SAND TO MEDIUM PEBBLES; TILL STRINGERS FROM 25 TO 40 AND 62 TO 82 FEET

\* \* \* \*

TEST HOLE NUMBER: 670  
LOCATION: 112N-51W-09BABB  
LEGAL LOCATION: NW NW NE NW SEC. 09, T. 112 N., R. 51 W.

1.0 - 11.0 SAND, BROWN, FINE  
11.0 - 21.0 GRAVEL, BROWN, FINE

\* \* \* \*

TEST HOLE NUMBER: 671  
LOCATION: 112N-51W-09CCCD  
LEGAL LOCATION: SE SW SW SW SEC. 09, T. 112 N., R. 51 W.

2.0 - 5.0 GRAVEL, BROWN, MEDIUM, CLAYEY, SANDY;  
VERY MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 672  
LOCATION: 112N-51W-10BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 10, T. 112 N., R. 51 W.

5.0 - 24.0 SAND, BROWN, MEDIUM TO COARSE, SILTY;  
MOIST, OXIDIZED, SATURATED AT 9 FEET

\* \* \* \*

TEST HOLE NUMBER: 673  
LOCATION: 112N-51W-11BCCC  
LEGAL LOCATION: SW SW SW NW SEC. 11, T. 112 N., R. 51 W.

2.0 - 6.0 SAND, BROWN, MEDIUM, PEBBLY; DRY,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 674  
LOCATION: 112N-51W-13DDBD  
LEGAL LOCATION: SE NW SE SE SEC. 13, T. 112 N., R. 51 W.

1.0 - 12.0 SAND, FINE TO MEDIUM  
12.0 - 18.0 GRAVEL  
18.0 - 61.0 GRAVEL AND SAND, FINE TO MEDIUM

\* \* \* \*

TEST HOLE NUMBER: 675  
LOCATION: 112N-51W-15DDDD  
LEGAL LOCATION: SE SE SE SE SEC. 15, T. 112 N., R. 51 W.

2.0 - 7.0 SAND AND GRAVEL, MEDIUM SAND TO FINE  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 676  
LOCATION: 112N-51W-16BAAA  
LEGAL LOCATION: NE NE NE NW SEC. 16, T. 112 N., R. 51 W.

5.0 - 11.0 SAND, BROWN, MEDIUM, POORLY SORTED; VERY  
MOIST, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 677  
LOCATION: 112N-51W-16CCDD  
LEGAL LOCATION: SE SE SW SW SEC. 16, T. 112 N., R. 51 W.

21.0 - 31.0 GRAVEL, BROWN, COARSE; SATURATED

\* \* \* \*

TEST HOLE NUMBER: 678  
LOCATION: 112N-51W-16CDCC  
LEGAL LOCATION: SW SW SE SW SEC. 16, T. 112 N., R. 51 W.

2.0 - 58.0 SAND AND GRAVEL, FINE TO COARSE SAND AND  
FINE TO COARSE GRAVEL, SILTY, CLAYEY;  
COBBLES AT 8 FEET, COARSER AFTER 30  
FEET, CLAY IS LIGHT-BROWN TO GRAY

\* \* \* \*

TEST HOLE NUMBER: 679  
LOCATION: 112N-51W-18CBCB  
LEGAL LOCATION: NW SW NW SW SEC. 18, T. 112 N., R. 51 W.

6.0 - 10.0 SAND, REDDISH-BROWN, MEDIUM, GRAVELLY,  
POORLY SORTED; DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 680  
LOCATION: 112N-51W-19BBBB  
LEGAL LOCATION: NW NW NW NW SEC. 19, T. 112 N., R. 51 W.

0 - 2.0 SAND

\* \* \* \*

TEST HOLE NUMBER: 681  
LOCATION: 112N-51W-24AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 24, T. 112 N., R. 51 W.

2.0 - 25.0 GRAVEL  
25.0 - 41.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 682  
LOCATION: 112N-51W-24ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 24, T. 112 N., R. 51 W.

5.0 - 25.0 SAND AND GRAVEL  
25.0 - 35.0 SAND

\* \* \* \*

TEST HOLE NUMBER: 683  
LOCATION: 112N-51W-24ACCC  
LEGAL LOCATION: SW SW SW NE SEC. 24, T. 112 N., R. 51 W.

2.0 - 28.0 SAND, FINE TO MEDIUM

\* \* \* \*

TEST HOLE NUMBER: 684  
LOCATION: 112N-51W-24ADBB  
LEGAL LOCATION: NW NW SE NE SEC. 24, T. 112 N., R. 51 W.

5.0 - 18.0 SAND, VERY COARSE  
18.0 - 31.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 685  
LOCATION: 112N-51W-24DBDD  
LEGAL LOCATION: SE SE NW SE SEC. 24, T. 112 N., R. 51 W.

2.0 - 7.0 SAND  
7.0 - 55.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 686  
LOCATION: 112N-51W-25AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 25, T. 112 N., R. 51 W.

2.0 - 25.0 SAND AND GRAVEL  
25.0 - 35.0 SAND

\* \* \* \*

TEST HOLE NUMBER: 687  
LOCATION: 112N-51W-25ABAB  
LEGAL LOCATION: NW NE NW NE SEC. 25, T. 112 N., R. 51 W.

5.0 - 25.0 SAND AND GRAVEL  
25.0 - 40.0 SAND; SOME GRAVEL

\* \* \* \*



TEST HOLE NUMBER: 688  
LOCATION: 112N-51W-25ABDA  
LEGAL LOCATION: NE SE NW NE SEC. 25, T. 112 N., R. 51 W.

2.0 - 5.0 SAND, MEDIUM TO COARSE  
5.0 - 41.0 GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 689  
LOCATION: 112N-51W-28CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 28, T. 112 N., R. 51 W.

0 - 4.0 SAND, DARK-YELLOWISH-ORANGE, VERY COARSE,  
SILTY, GRAVELLY

\* \* \* \*

TEST HOLE NUMBER: 690  
LOCATION: 112N-51W-32BBAB  
LEGAL LOCATION: NW NE NW NW SEC. 32, T. 112 N., R. 51 W.

24.0 - 27.0 SAND, BROWN, MEDIUM, MODERATELY SORTED;  
DRY, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 691  
LOCATION: 112N-51W-33ABBB  
LEGAL LOCATION: NW NW NW NE SEC. 33, T. 112 N., R. 51 W.

5.0 - 12.0 GRAVEL, FINE TO COARSE, SANDY; GRAINS  
ANGULAR TO SUBANGULAR AND CONSIST OF  
CARBONATE AND BLACK CRYSTALLINE ROCK  
FRAGMENTS, SAND, MOSTLY QUARTZ

\* \* \* \*

TEST HOLE NUMBER: 692  
LOCATION: 112N-51W-33CBBB  
LEGAL LOCATION: NW NW NW SW SEC. 33, T. 112 N., R. 51 W.

3.0 - 5.0 SAND, DUSKY-YELLOW, VERY CLAYEY

\* \* \* \*

TEST HOLE NUMBER: 693  
LOCATION: 112N-51W-33CBCA  
LEGAL LOCATION: NE SW NW SW SEC. 33, T. 112 N., R. 51 W.

3.0 - 5.0 GRAVEL, COARSE; TO FINE SAND

\* \* \* \*

TEST HOLE NUMBER: 694  
LOCATION: 112N-51W-33CBCA 1  
LEGAL LOCATION: NE SW NW SW SEC. 33, T. 112 N., R. 51 W.

5.0 - 10.0 SAND, POCKETS OF WELL-SORTED SAND WITHIN  
COARSE SAND; SOME SILTY CLAY PIECES AND  
PEBBLES; SOME GRAVEL  
10.0 - 12.0 SAND, LIGHT-GREENISH-BROWN, SILTY; CLAY;  
GRAVEL AND PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 695  
LOCATION: 112N-51W-33CBCA 2  
LEGAL LOCATION: NE SW NW SW SEC. 33, T. 112 N., R. 51 W.

5.0 - 10.0 SAND, POCKETS OF WELL-SORTED SAND WITHIN  
COARSE SAND; SOME SILTY CLAY PIECES AND  
PEBBLES; SOME GRAVEL  
10.0 - 12.0 SAND, LIGHT-GREENISH-BROWN, SILTY; CLAY;  
GRAVEL AND PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 696  
LOCATION: 112N-51W-33CBCA 3  
LEGAL LOCATION: NE SW NW SW SEC. 33, T. 112 N., R. 51 W.

5.0 - 10.0 SAND, POCKET OF WELL-SORTED SAND WITHIN  
COARSE SAND; SOME SILTY CLAY PIECES AND  
PEBBLES; SOME GRAVEL  
10.0 - 12.0 SAND, LIGHT-GREENISH-BROWN, SILTY; CLAY;  
GRAVEL AND PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 697  
LOCATION: 112N-51W-33CBCC 1  
LEGAL LOCATION: SW SW NW SW SEC. 33, T. 112 N., R. 51 W.

11.0 - 13.0 SAND, FINE TO COARSE, POORLY SORTED;  
LITTLE GRAVEL AND FINES

\* \* \* \*

TEST HOLE NUMBER: 698  
LOCATION: 112N-51W-33CBCC 2  
LEGAL LOCATION: SW SW NW SW SEC. 33, T. 112 N., R. 51 W.

11.0 - 13.0 SAND, FINE TO COARSE, POORLY SORTED;  
LITTLE GRAVEL AND FINES

\* \* \* \*

TEST HOLE NUMBER: 699  
LOCATION: 112N-51W-33CCAB 1  
LEGAL LOCATION: NW NE SW SW SEC. 33, T. 112 N., R. 51 W.

2.0 - 3.0 SAND, LIGHT-BROWN, MEDIUM, FAIRLY WELL-SORTED; LITTLE PEBBLES

\* \* \* \*

TEST HOLE NUMBER: 700  
LOCATION: 112N-51W-33CCAB 2  
LEGAL LOCATION: NW NE SW SW SEC. 33, T. 112 N., R. 51 W.

5.0 - 7.0 SAND, COARSE; GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 701  
LOCATION: 112N-51W-33CCBB 2  
LEGAL LOCATION: NW NW SW SW SEC. 33, T. 112 N., R. 51 W.

2.0 - 5.0 SAND, LIGHT-BROWN, FINE; SILT, CLAY  
10.0 - 14.0 SAND, COARSE; WET  
14.0 - 26.0 SAND, COARSE; GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 702  
LOCATION: 112N-51W-33CCBB 4  
LEGAL LOCATION: NW NW SW SW SEC. 33, T. 112 N., R. 51 W.

7.0 - 13.0 SAND, FINE TO COARSE, POORLY SORTED

\* \* \* \*

TEST HOLE NUMBER: 703  
LOCATION: 112N-51W-33CCBB 5  
LEGAL LOCATION: NW NW SW SW SEC. 33, T. 112 N., R. 51 W.

7.0 - 13.0 SAND, FINE TO COARSE, POORLY SORTED

\* \* \* \*

TEST HOLE NUMBER: 704  
LOCATION: 112N-51W-33CCBD  
LEGAL LOCATION: SE NW SW SW SEC. 33, T. 112 N., R. 51 W.

6.0 - 9.0 SAND, LIGHT-BROWN, FINE TO MEDIUM, WELL-SORTED AT 7 FEET; SOME FINE TO COARSE GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 705

LOCATION: 112N-51W-33CCCA  
LEGAL LOCATION: NE SW SW SW SEC. 33, T. 112 N., R. 51 W.

7.0 - 8.0 SAND; SOME GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 706  
LOCATION: 112N-51W-33CCCC  
LEGAL LOCATION: SW SW SW SW SEC. 33, T. 112 N., R. 51 W.

5.0 - 12.0 SAND AND GRAVEL, FINE TO COARSE SAND AND  
FINE TO MEDIUM GRAVEL; 1.5 INCH FINE  
SAND SEAM AT 5.5 FEET, MEDIUM SAND AND  
TRACE GRAVEL AT 10 TO 11 FEET, COARSE  
SAND AND GRAVEL AT 11.5 TO 11.75 FEET;  
WET AT 6 FEET, RAIN FOR 2 TO 3 DAYS  
PRECEDING SAMPLE

\* \* \* \*

TEST HOLE NUMBER: 707  
LOCATION: 112N-51W-33CCDA  
LEGAL LOCATION: NE SE SW SW SEC. 33, T. 112 N., R. 51 W.

3.0 - 8.0 SAND, MEDIUM TO COARSE; FINE TO MEDIUM  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 708  
LOCATION: 112N-51W-33CCDD  
LEGAL LOCATION: SE SE SW SW SEC. 33, T. 112 N., R. 51 W.

5.0 - 8.0 SAND AND GRAVEL, AT 5 TO 6 FEET FINE TO  
COARSE, AT 6 TO 6.5 FEET FINE TO MEDIUM  
SAND WITH SILT AND CLAY AND PEBBLES, AT  
6.5 TO 7 FEET FINE TO COARSE SAND AND  
GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 709  
LOCATION: 112N-51W-33CDDD  
LEGAL LOCATION: SE SE SE SW SEC. 33, T. 112 N., R. 51 W.

4.0 - 7.0 GRAVEL, FINE TO COARSE, SANDY; GRAINS  
VERY ANGULAR BLACK SILICATE ROCK  
FRAGMENTS

\* \* \* \*

TEST HOLE NUMBER: 710  
LOCATION: 112N-51W-35DDDD

LEGAL LOCATION: SE SE SE SE SEC. 35, T. 112 N., R. 51 W.

0	-	12.0	SAND, FINE TO MEDIUM, ROUNDED
12.0	-	18.0	GRAVEL, MEDIUM-COARSE, ROUNDED
18.0	-	27.0	SAND, FINE TO MEDIUM, SUBROUNDED TO ROUND

\* \* \* \*

TEST HOLE NUMBER: 711

LOCATION: 112N-51W-36CCCC

LEGAL LOCATION: SW SW SW SW SEC. 36, T. 112 N., R. 51 W.

4.0	-	6.0	SAND, TAN, SILTY
6.0	-	9.0	GRAVEL, TAN, CLAYEY; UNABLE TO DRILL, ABANDONED HOLE

\* \* \* \*

TEST HOLE NUMBER: 712

LOCATION: 112N-51W-36DDDD

LEGAL LOCATION: SE SE SE SE SEC. 36, T. 112 N., R. 51 W.

3.0	-	30.0	SAND AND GRAVEL
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\* \* \* \*

TEST HOLE NUMBER: 713

LOCATION: 112N-52W-19BBBC

LEGAL LOCATION: SW NW NW NW SEC. 19, T. 112 N., R. 52 W.

5.0	-	9.0	SAND, DARK-BROWN, FINE, WELL SORTED; MOIST, OXIDIZED
9.0	-	17.0	SAND, BROWN, COARSE, MODERATELY SORTED; SATURATED, OXIDIZED
17.0	-	24.0	GRAVEL, DARK-BROWN, MEDIUM, SANDY, MODERATELY SORTED; SATURATED, OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 714

LOCATION: 112N-52W-34DAAD

LEGAL LOCATION: SE NE NE SE SEC. 34, T. 112 N., R. 52 W.

1.0	-	2.0	GRAVEL, REDDISH-BROWN, COARSE, SANDY, POORLY SORTED; VERY MOIST, OXIDIZED
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\* \* \* \*

TEST HOLE NUMBER: 715

LOCATION: 112N-52W-35ABBB

LEGAL LOCATION: NW NW NW NE SEC. 35, T. 112 N., R. 52 W.

2.0	-	24.0	GRAVEL, BROWN, MEDIUM, SANDY, POORLY
-----	---	------	--------------------------------------

SORTED; MOIST, OXIDIZED, SATURATED AT  
11 FEET

\* \* \* \*

TEST HOLE NUMBER: 716  
LOCATION: 112N-52W-36BABB  
LEGAL LOCATION: NW NW NE NW SEC. 36, T. 112 N., R. 52 W.

4.0 - 11.0 SAND, REDDISH-BROWN, MEDIUM, VERY  
GRAVELLY; DRY, OXIDIZED  
11.0 - 30.0 SAND, BROWN, MEDIUM TO COARSE; SATURATED,  
OXIDIZED

\* \* \* \*

TEST HOLE NUMBER: 717  
LOCATION: 112N-52W-36BBBA 1  
LEGAL LOCATION: NE NW NW NW SEC. 36, T. 112 N., R. 52 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

0 - 3.0 SAND AND GRAVEL

\* \* \* \*

TEST HOLE NUMBER: 718  
LOCATION: 112N-52W-36BBBA 2  
LEGAL LOCATION: NE NW NW NW SEC. 36, T. 112 N., R. 52 W.  
PRELIMINARY LOG -- SUBJECT TO CHANGE

17.0 - 32.0 SAND AND GRAVEL, VERY FINE SAND TO COARSE  
PEBBLES

\* \* \* \*

TABLE 2. List of sand and gravel pits in Brookings County, South Dakota, which are on file at the Department of Transportation, Division of Highways, Pierre, South Dakota.

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Explanation:

Column description

- a. Landowner and address
  - b. Location - given as half and quarter sections, section number, township, and range
  - c. Aggregate type
  - d. Average thickness of deposits in feet
  - e. Average thickness of overburden in feet
- 

**Pit 1**

- a. Landowner: George Bain - Elkton
- b. Location: SE 1/4 sec. 7, T. 109 N., R. 47 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 14.6
- e. Overburden thickness (ft): 3.7

**Pit 2**

- a. Landowner: unknown
- b. Location: NW 1/4 sec. 9, T. 109 N., R. 47 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 3**

- a. Landowner: Willie Steufen - Elkton
- b. Location: NE 1/4 sec. 17, T. 109 N., R. 47 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 12.0
- e. Overburden thickness (ft): 3.0

**Pit 4**

- a. Landowner: SD Department of Highways - Brookings
- b. Location: SW 1/4 sec. 1, T. 109 N., R. 48 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 9.4
- e. Overburden thickness (ft): 3.8

**Pit 5**

- a. Landowner: unknown
- b. Location: NW 1/4 sec. 2, T. 109 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 6**

- a. Landowner: Mannerud Construction Company
- b. Location: SW 1/4 sec. 6, T. 109 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 7**

- a. Landowner: Brookings County Highway Department
- b. Location: SE 1/4 SW 1/4 sec. 1, T. 109 N., R. 50 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 5.0
- e. Overburden thickness (ft) 1.7

**Pit 8**

- a. Landowner: Loren Vockrodt - Brookings
- b. Location: NE 1/4 sec. 13, T. 109 N., R. 50 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 6.3
- e. Overburden thickness (ft): 2.4

**Pit 9**

- a. Landowner: Tom Martinson - Brookings
- b. Location: SE 1/4 sec. 24, T. 109 N., R. 50 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 11.0
- e. Overburden thickness (ft): 2.5

**Pit 10**

- a. Landowner: Colesta Mannerud - Volga
- b. Location: NE 1/4 sec. 23, T. 109 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 19.0
- e. Overburden thickness (ft): 3.0

**Pit 11**

- a. Landowner: Chicago-Rock Island-Pacific RR - Chicago, IL
- b. Location: NE 1/4 sec. 1, T. 110 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 9.9
- e. Overburden thickness (ft): 4.8



**Pit 12**

- a. Landowner: David Wheeler - Aurora
- b. Location: NE 1/4 sec. 12, T. 110 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 16.0
- e. Overburden thickness (ft): 2.0

**Pit 13**

- a. Landowner: Art Benson - Volga
- b. Location: NE 1/4 sec. 11, T. 110 N., R. 50 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 14**

- a. Landowner: Holger E. Peterson - Volga
- b. Location: NE 1/4 sec. 2, T. 110 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 15**

- a. Landowner: Melvin Vanderberg & Metropolitan Life Ins. -  
Volga
- b. Location: N 1/2 NW 1/4 sec. 2, T. 110 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 7.8
- e. Overburden thickness (ft): 2.4

**Pit 16**

- a. Landowner: Melvin Vandenberg - Volga
- b. Location: NE 1/4 SW 1/4 sec. 2, T. 110 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 13.6
- e. Overburden thickness (ft): 5.4

**Pit 17**

- a. Landowner: Arne Nelson - Volga
- b. Location: NW 1/4 sec. 27, T. 110 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 11.9
- e. Overburden thickness (ft): 3.4

**Pit 18**

- a. Landowner: William Manns - Volga
- b. Location: NE 1/4 sec. 29, T. 110 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 7.3
- e. Overburden thickness (ft): 2.9

**Pit 19**

- a. Landowner: R. J. Ziegler - Volga
- b. Location: NE 1/4 sec. 30, T. 110 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 9.9
- e. Overburden thickness (ft): 3.9

**Pit 20**

- a. Landowner: Case Wagemaar
- b. Location: SE 1/4 sec. 1, T. 110 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 11.0
- e. Overburden thickness (ft): 2.0

**Pit 21**

- a. Landowner: C. E. Mannerud - Brookings
- b. Location: SE 1/4 sec. 1, T. 110 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 12.0
- e. Overburden thickness (ft): 1.3

**Pit 22**

- a. Landowner: unknown
- b. Location: NW 1/4 sec. 2, T. 110 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 23**

- a. Landowner: Buller Estate - Hendricks, MN
- b. Location: SW 1/4 sec. 5, T. 111 N., R. 47 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 13.5
- e. Overburden thickness (ft): 1.5

**Pit 24**

- a. Landowner: Joe Lutgen - White
- b. Location: NE 1/4 sec. 6, T. 111 N., R. 47 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 14.5
- e. Overburden thickness (ft): 1.0

**Pit 25**

- a. Landowner: Merwyn Pierce - White
- b. Location: NE 1/4 sec. 7, T. 111 N., R. 47 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 18.5
- e. Overburden thickness (ft): 1.0

**Pit 26**

- a. Landowner: Eldon Felton - Hendricks, MN
- b. Location: SW 1/4 sec. 8, T. 111 N., R. 47 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 10.6
- e. Overburden thickness (ft): 3.1

**Pit 27**

- a. Landowner: Mrs. Leo Puhr - Brookings
- b. Location: SE 1/4 sec. 26, T. 111 N., R. 48 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 7.3
- e. Overburden thickness (ft): 1.8

**Pit 28**

- a. Landowner: Dean and Lois Duff - White
- b. Location: NE 1/4 sec. 7, T. 111 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 29**

- a. Landowner: Dean Duff - White
- b. Location: SW 1/4 sec. 7, T. 111 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 13.4
- e. Overburden thickness (ft): 2.5

**Pit 30**

- a. Landowner: Winston Ullman - Brookings
- b. Location: SE 1/4 sec. 7, T. 111 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 7.3
- e. Overburden thickness (ft): 1.0

**Pit 31**

- a. Landowner: Richard Lucas - White
- b. Location: SE 1/4 NE 1/4 sec. 10, T. 111 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 10.8
- e. Overburden thickness (ft): 2.2

**Pit 32**

- a. Landowner: N. A. Tellinghuisen - White
- b. Location: SE 1/4 sec. 10, T. 111 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 11.0
- e. Overburden thickness (ft): 2.0

**Pit 33**

- a. Landowner: Erwin Jerred - White
- b. Location: S 1/2 sec. 11, T. 111 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 12.0
- e. Overburden thickness (ft): 3.5

**Pit 34**

- a. Landowner: Marie Nelson
- b. Location: NW 1/4 sec. 14, T. 111 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 35**

- a. Landowner: Richard Kendall - Brookings
- b. Location: W 1/2 NW 1/4 sec. 18, T. 111 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 9.2
- e. Overburden thickness (ft): 3.4

**Pit 36**

- a. Landowner: Mannerud Construction Company
- b. Location: NW 1/4 sec. 18, T. 111 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 37**

- a. Landowner: R. Sloan - Aurora
- b. Location: SE 1/4 sec. 27, T. 111 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 9.4
- e. Overburden thickness (ft): 3.7

**Pit 38**

- a. Landowner: Marcia Eberle - Sioux Falls and  
Ronald E. Searls - Downey, California
- b. Location: NE 1/4 SE 1/4 sec. 13, T. 111 N., R. 50 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 8.5
- e. Overburden thickness (ft): 3.9

**Pit 39**

- a. Landowner: SD Department of Game, Fish & Parks - Pierre
- b. Location: NW 1/4 sec. 8, T. 111 N., R. 51 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 12.2
- e. Overburden thickness (ft): 2.2

**Pit 40**

- a. Landowner: unknown
- b. Location: NW 1/4 sec. 13, T. 111 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 41**

- a. Landowner: unknown
- b. Location: SE 1/4 sec. 4, T. 112 N., R. 47 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 42**

- a. Landowner: unknown
- b. Location: NE 1/4 sec. 30, T. 112 N., R. 47 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 43**

- a. Landowner: unknown
- b. Location: NW 1/4 sec. 13, T. 112 N., R. 48 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 44**

- a. Landowner: Albert Frykman - Bruce
- b. Location: NE 1/4 sec. 7, T. 112 N., R. 49 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 8.5
- e. Overburden thickness (ft): 2.8

**Pit 45**

- a. Landowner: State of South Dakota
- b. Location: W 1/2 SE 1/4 sec. 7, T. 112 N., R. 50 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 46**

- a. Landowner: unknown
- b. Location: NE 1/4 sec. 24, T. 112 N., R. 50 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 47**

- a. Landowner: George Feldhaus - Bruce
- b. Location: NE 1/4 sec. 34, T. 112 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 7.0
- e. Overburden thickness (ft): 1.9

**Pit 48**




- a. Landowner: George Feldhaus - Bruce
- b. Location: SE 1/4 sec. 34, T. 112 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 7.0
- e. Overburden thickness (ft): 3.0

**Pit 49**

- a. Landowner: K. R. Fredrickson - Arlington
- b. Location: SE 1/4 NE 1/4 sec. 36, T. 112 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): ----
- e. Overburden thickness (ft): ----

**Pit 50**

- a. Landowner: K. R. Fredrickson - Arlington
- b. Location: E 1/2 sec. 36, T. 112 N., R. 52 W.
- c. Aggregate type: Gravel
- d. Deposit thickness (ft): 14.6
- e. Overburden thickness (ft): 4.3

-  Good probability of finding sand or gravel deposits.
-  Fair probability of finding sand or gravel deposits.
-  Poor probability of finding sand or gravel deposits.

Letters A through M designate areas described in the text.

117 ● Test hole containing sand or gravel within 25 feet of the land surface with 0-5 feet of overburden.

118 ■ Test hole containing sand or gravel within 25 feet of the land surface with greater than 5 feet of overburden.

122-134 ● Multiple test holes containing sand or gravel within 25 feet of the land surface.

○ Test hole containing no sand or gravel within 25 feet of the land surface.

(7) ✕ Sand and gravel pits - those with a number are listed in Table 2.

- - - Approximate boundary



Lake



Slough

Number refers to Table 1.



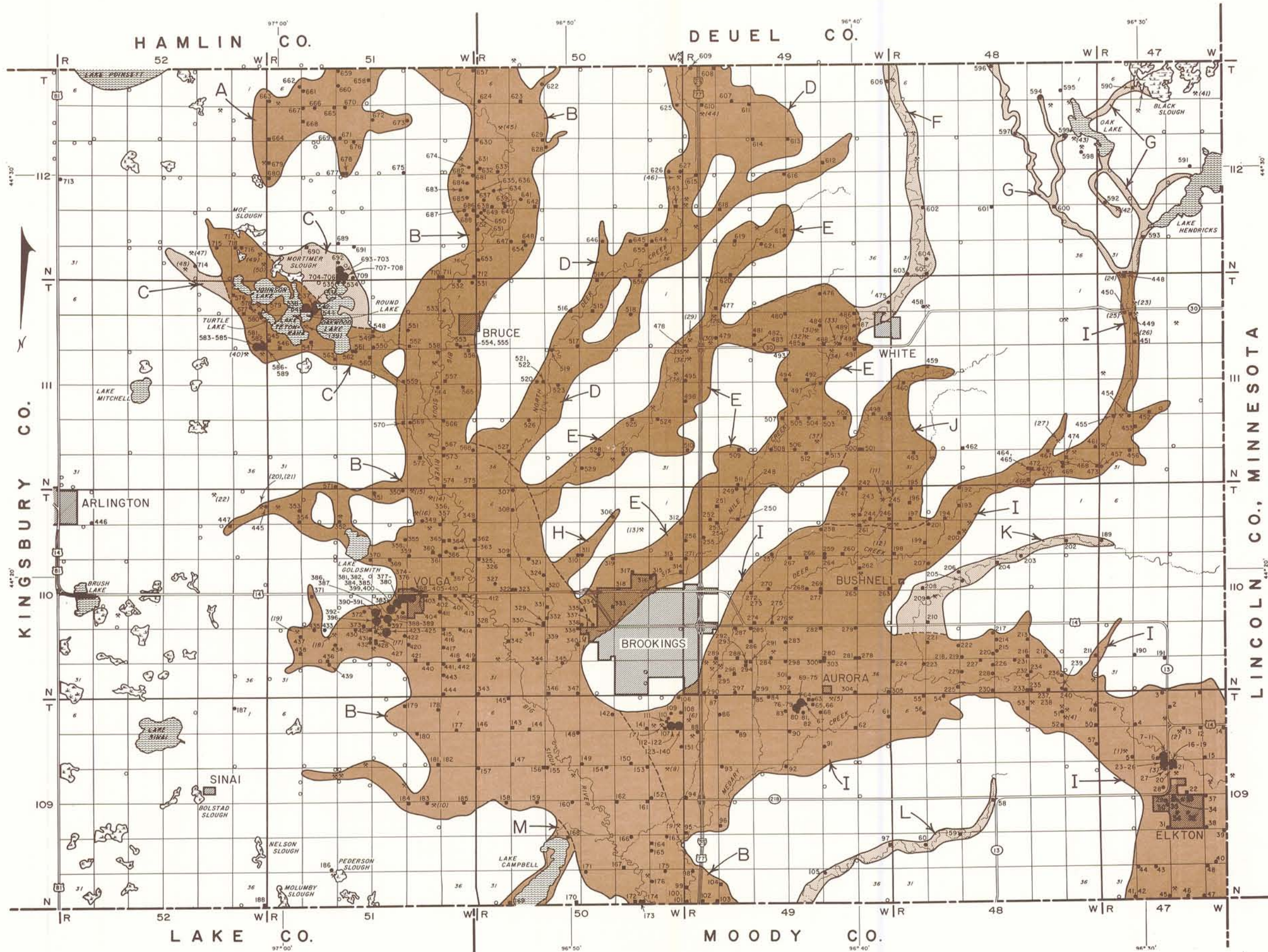
Index map of South Dakota showing location of Brookings County.

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

Sectionized township

Map showing test holes, sand and gravel pits, and sand and gravel deposits in Brookings County.





HAMLIN CO.

DEUEL CO.

KINGSBURY CO.

LINCOLN CO., MINNESOTA

LAKE CO.

MOODY CO.

BRUCE

WHITE

BROOKINGS

BUSHNELL

AURORA

ELKTON

MOE SLOUGH

MORTIMER SLOUGH

ROUNDA LAKE

TURTLE LAKE

LAKE MITCHELL

ARLINGTON

BRUSH LAKE

LAKE GOLDSMITH

VOLGA

SINAI

BOLSTAD SLOUGH

NELSON SLOUGH

PEDERSON SLOUGH

MOLUMBY SLOUGH

LAKE CAMPBELL

OAK LAKE

BLACK SLOUGH

LAKE HENDRICKS



R 52 W R 51 W R 50 W R 49 W R 48 W R 47 W

T 112 T 111 T 110 T 109 T 108

