SAND AND GRAVEL RESOURCES IN
KINGSBURY COUNTY, SOUTH DAKOTA

by

Dennis W. Tomhaye

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United States Geological Survey,
East Dakota Water Development District,
South Dakota Department of Transportation,
and Kingsbury County

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INTRODUCTION

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

Other reports in the series include:


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.

GEOLLOGIC OVERVIEW

Most of the sand and gravel deposits found in Kingsbury County were deposited by glacial ice or meltwater, which 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 Kingsbury County, picking up earth debris as they went. Some of this debris, a mixture of clay, silt, sand, gravel, and boulders was redeposited directly from the ice. Till, the term used to describe this mixture, is also often called "blue clay" or "boulder clay." In the Kingsbury County area the till is made up of primarily 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 that 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 during deposition and the type of material. Deposits left by slow flowing streams are made up of primarily 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 the major sources of sand and gravel in Kingsbury 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 that determine grain size of 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 that formed them have since cut their channels deeper and developed new flood plains at lower levels. Some of the sand and gravel found in Kingsbury 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 Kingsbury 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 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
Test-hole data are shown on the map using three 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. These two types of symbols are numbered and the pertinent test-hole information is listed in table 1. The third symbol is an open hole (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 (X). 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 photograph interpretation, and field observations. Areas with "good" and "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 very large continuous body of outwash sand and gravel, encompassing about 45 square miles within the drainage area of the East Fork Vermillion River. The thickness of the deposit exceeds 50 feet in many spots along the western edge of the area. Overall, Area "A" averages about 30 feet in thickness for all the test holes drilled. The amount of overburden is quite variable over the area, but averages about 3 feet in thickness for all the test holes drilled. A great deal of mining for sand and gravel has occurred and is occurring in this area.

Areas "B" and "D," designated as "fair," are northwest–southeast trending ridges of discontinuous sand and gravel. Isolated
knobs might contain as much as 30 feet of sand and gravel. A fair amount of mining for sand and gravel has occurred in these areas but there are many of the isolated knobs that remain untouched.

Area "G," designated as "fair," represents sand and gravel deposits within the Rock Creek valley. The outwash deposits here remain as thin terrace remnants along the valley walls. Several old exhausted gravel pits are located in this area.

Area "E," designated as "fair," contains sand and gravel deposits within the Redstone Creek valley. The outwash deposits here are very thin and discontinuous. Terrace remnants are found along the valley walls and a thin deposit of sand and gravel occupies the valley floor. The southerns end of the area contains many gravel pits and is the most promising portion of the area.

Area "F," designated as "fair," represents outwash deposits within the South Fork Pearl Creek valley. The sand and gravel is found as isolated terrace remnants along the valley walls. Thin and discontinuous deposits are also found along the valley floor. Very little mining for sand and gravel has occurred in this area.

Area "G," designated as "fair," contains sand and gravel deposits within the valley of an intermittent unnamed creek, which connects Lake Albert and Lake Preston. The outwash deposits are thin and discontinuous in the southern portion of the area, but become thicker and more continuous to the north. Several test holes encountered in excess of 15 feet of sand and gravel, with little overburden.

Area "H," designated as "good," is a thick, continuous terrace deposit. Sand and gravel thicknesses of up to 26 feet were encountered in the test holes drilled. A great deal of mining for sand and gravel has occurred in this area.

Area "I," designated as "fair," is a small portion of an area which was mapped in the Clark County and Hamlin County sand and gravel pamphlets. Very isolated terrace remnants are all that occur in Kingsbury County.

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 KINGSBURY 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-54W-34ABA
LEGAL LOCATION: NE NW NE NE SEC. 34, T. 109 N., R. 54 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SAND</td>
</tr>
</tbody>
</table>

TEST HOLE NUMBER: 2
LOCATION: 109N-55W-07CDD
LEGAL LOCATION: SE SW SE SW SEC. 07, T. 109 N., R. 55 W.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>GRAVEL, BROWN, MEDIUM TO COARSE, SANDY; OXIDIZED, DRY</td>
</tr>
<tr>
<td>7</td>
<td>SAND, BROWN, FINE, SILTY; OXIDIZED, DRY</td>
</tr>
<tr>
<td>14</td>
<td>SAND, BROWN, VERY FINE, SILTY; OXIDIZED, MOIST</td>
</tr>
</tbody>
</table>

TEST HOLE NUMBER: 3
LOCATION: 109N-55W-08CCCC
LEGAL LOCATION: SW SW SW SW SEC. 08, T. 109 N., R. 55 W.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>GRAVEL, LIGHT-BROWN, MEDIUM TO COARSE, SANDY; OXIDIZED, DRY</td>
</tr>
<tr>
<td>5</td>
<td>SAND, BROWN, MEDIUM, PEBBLY; OXIDIZED, MOIST, SOME GRAVEL</td>
</tr>
</tbody>
</table>

TEST HOLE NUMBER: 4
LOCATION: 109N-55W-16AAAA
LEGAL LOCATION: NE NE NE NE SEC. 16, T. 109 N., R. 55 W.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>SAND, LIGHT-BROWN, MEDIUM, VERY CLAYEY, SILTY; OXIDIZED, MOIST</td>
</tr>
</tbody>
</table>

* * *
TEST HOLE NUMBER: 5  
LOCATION: 109N-55W-18DDAD  
LEGAL LOCATION: SE NE SE SE SEC. 18, T. 109 N., R. 55 W.  

2 -  5 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY; OXIDIZED, DRY  
5 -  10 GRAVEL, BROWN, FINE, SANDY; OXIDIZED, DRY, SOME CUBBLES  
10 - 26 SAND, BROWN, VERY FINE, SILTY; OXIDIZED, MOIST  

***

TEST HOLE NUMBER: 6  
LOCATION: 109N-55W-20ABBA  
LEGAL LOCATION: NE NW NW NE SEC. 20, T. 109 N., R. 55 W.  

0 -  1 SAND, BROWN, FINE; DRY, OXIDIZED  
1 -  5 SAND, ORANGISH-YELLOW, FINE; MOIST, OXIDIZED  
8 - 33 SAND, GRAY, CLAYEY, FINE, WELL-SORTED; SATURATED, UNOXIDIZED  

***

TEST HOLE NUMBER: 7  
LOCATION: 109N-55W-21AAAA  
LEGAL LOCATION: NE NE NE NE SEC. 21, T. 109 N., R. 55 W.  

0 -  1 SAND, BROWN, FINE TO MEDIUM, SILTY; DRY, OXIDIZED  
4 -  7 SAND, REDDISH-BROWN, MEDIUM, SATURATED, OXIDIZED  
8 - 12 SAND, GRAY, MEDIUM; SATURATED, UNOXIDIZED  

***

TEST HOLE NUMBER: 8  
LOCATION: 109N-55W-21BABA  
LEGAL LOCATION: NE NW NW NW SEC. 21, T. 109 N., R. 55 W.  

0 -  1 SAND, REDDISH-BROWN, FINE, WELL-SORTED; DRY, OXIDIZED  
1 -  4 SAND, BROWN, FINE, CLAYEY, MODERATELY SORTED; MOIST, OXIDIZED  
4 - 11 SAND, BROWN, MEDIUM, MODERATELY SORTED; MOIST, SATURATED AT 6 FEET, OXIDIZED  

6
TEST HOLE NUMBER:  9
LOCATION:  109N-55W-21CCCC
LEGAL LOCATION:  SW SW SW SW SEC. 21, T. 109 N., R. 55 W.
   4 - 12  SAND, BROWN, MEDIUM, SILTY; OXIDIZED, MOIST, SATURATED AT 7 FEET
   12 - 23  SAND, GRAY, FINE, CLAYEY, SILTY; UNOXIDIZED, SATURATED

TEST HOLE NUMBER:  10
LOCATION:  109N-55W-27CDCC
LEGAL LOCATION:  SW SW SE SW SEC. 27, T. 109 N., R. 55 W.
   3 -  5  SAND, REDDISH-BROWN, MEDIUM; MOIST, OXIDIZED

TEST HOLE NUMBER:  11
LOCATION:  109N-55W-33BABA
LEGAL LOCATION:  NE NW NE NW SEC. 33, T. 109 N., R. 55 W.
   5 -  12  SAND, BROWN, MEDIUM, SILTY; OXIDIZED, SATURATED
   12 - 20  SAND, GWAY, MEDIUM, CLAYEY, SILTY; UNOXIDIZED, SATURATED

TEST HOLE NUMBER:  12
LOCATION:  109N-55W-34BBBB
LEGAL LOCATION:  NW NW NW NW SEC. 34, T. 109 N., R. 55 W.
   2 -  11  SAND, DARK-BROWN, SILTY, GRAVELLY, POORLY SORTED; MOIST, SATURATED AT 11 FEET, OXIDIZED
   11 - 12  SAND, BROWN, MEDIUM, MODERATELY SORTED; SATURATED, OXIDIZED
   12 - 21  SAND, GRAY, MEDIUM, MODERATELY SORTED; SATURATED, UNOXIDIZED

TEST HOLE NUMBER:  13
LOCATION: 109N-56W-36BBBB
LEGAL LOCATION: NW NW NW NW SEC. 36, T. 109 N., R. 55 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

14 - 18 SAND, FINE TO COARSE
* * * *

TEST HOLE NUMBER: 14
LOCATION: 109N-56W-03CCCD
LEGAL LOCATION: SE SW SE SW SEC. 03, T. 109 N., R. 56 W.

16 - 19 SAND, BROWN, MEDIUM, WELL-SORTED; OXIDIZED, SATURATED
* * * *

TEST HOLE NUMBER: 15
LOCATION: 109N-56W-10AAAB
LEGAL LOCATION: NW NE NE NE SEC. 10, T. 109 N., R. 56 W.

5 - 7 GRAVEL, REDDISH-BROWN, MEDIUM, CLAYEY, POORLY SORTED; DRY, OXIDIZED
* * * *

TEST HOLE NUMBER: 16
LOCATION: 109N-56W-10DDCD
LEGAL LOCATION: SE SW SE SE SEC. 10, T. 109 N., R. 56 W.

1a - 43 GRAVEL, DARK-BROWN, VERY CLAYEY WITH PEBBLES, SANDY, POORLY SORTED; OXIDIZED, MOIST, SATURATED AT 22 FEET
* * * *

TEST HOLE NUMBER: 17
LOCATION: 109N-56W-11CCDD
LEGAL LOCATION: SE SE SW SW SEC. 11, T. 109 N., R. 56 W.

0 - 5 SAND, BROWN, MEDIUM, SILTY; OXIDIZED DRY
* * * *

TEST HOLE NUMBER: 18
LOCATION: 109N-56W-12AADA
LEGAL LOCATION: NE NE NE NE SEC. 12, T. 109 N., R. 56 W.
3 - 11 SAND, BROWN, MEDIUM; OXIDIZED, DRY, SOME GRAVEL

** **

TEST HOLE NUMBER: 19
LOCATION: 109N-56W-23BABB
LEGAL LOCATION: NW NW NE NW SEC. 23, T. 109 N., R. 56 W.

5 - 10 SAND, BROWN, MEDIUM, SILTY; OXIDIZED, DRY
10 - 44 GRAVEL, BROWN, COARSE, SANDY; OXIDIZED, DRY, SATURATED AT 26 FEET

** **

TEST HOLE NUMBER: 20
LOCATION: 109N-56W-23DCDC
LEGAL LOCATION: SW SE SW SE SEC. 23, T. 109 N., R. 56 W.

4 - 8 SAND, BROWN, FINE, VERY CLAYEY, POORLY SORTED; MOIST, OXIDIZED
8 - 10 GRAVEL, BROWN, COARSE; MOIST, OXIDIZED

** **

TEST HOLE NUMBER: 21
LOCATION: 109N-56W-24CCCD
LEGAL LOCATION: SE SW SW SW SEC. 24, T. 109 N., R. 56 W.

2 - 3 SAND, LIGHT-BROWN, MEDIUM, CLAYEY, POORLY SORTED; DRY, OXIDIZED
3 - 6 SAND, REDDISH-BROWN, FINE, CLAYEY, POORLY SORTED; DRY, OXIDIZED
6 - 7 GRAVEL, DARK-BROWN, MEDIUM, VERY CLAYEY, POORLY SORTED; MOIST, OXIDIZED
7 - 17 GRAVEL, BROWN, MEDIUM, CLAYEY, MODERATELY SORTED; SATURATED, OXIDIZED

** **

TEST HOLE NUMBER: 22
LOCATION: 109N-56W-25DDCC
LEGAL LOCATION: SW SW SE SE SEC. 26, T. 109 N., R. 56 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

2 - 32 SAND, FINE TO MEDIUM; MINOR GRAVEL

** **
TEST HOLE NUMBER: 23
LOCATION: 109N-56W-28CCCC 1
LEGAL LOCATION: SW SW SW SW SEC. 28, T. 109 N., R. 56 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

18 - 21 GRAVEL, FINE

TEST HOLE NUMBER: 24
LOCATION: 109N-56W-35AAAA
LEGAL LOCATION: NE NE NE NE SEC. 35, T. 109 N., R. 56 W.

4 - 7 GRAVEL, DARK-BROWN, COARSE, POORLY SORTED; DRY, OXIDIZED
7 - 9 GRAVEL, REDDISH-BROWN, MEDIUM, CLAYETY, POORLY SORTED; MOIST, OXIDIZED

TEST HOLE NUMBER: 25
LOCATION: 109N-56W-35DDDD

4 - 10 GRAVEL, LIGHT-BROWN, FINE, VERY CLAYETY; SATURATED, OXIDIZED
10 - 13 GRAVEL, DARK-BROWN, COARSE, CLAYETY; SATURATED, OXIDIZED

TEST HOLE NUMBER: 26
LOCATION: 109N-57W-08DDCC
LEGAL LOCATION: SW SW SE SE SEC. 08, T. 109 N., R. 57 W.

4 - 11 GRAVEL, MEDIUM-BROWN, COARSE, CLAYETY, POORLY SORTED; OXIDIZED, MOIST

TEST HOLE NUMBER: 27
LOCATION: 109N-57W-17DDCD
LEGAL LOCATION: SE SW SE SE SEC. 17, T. 109 N., R. 57 W.

1 - 5 SAND, CLAYETY, POORLY SORTED; WITH PEBBLES
5 - 10 SAND AND GRAVEL, COARSE SAND, RED-BROWN, MEDIUM GRAVEL; OXIDIZED, MOIST
TEST HOLE NUMBER: 28
LOCATION: 109N-57W-20DDCC
LEGAL LOCATION: SW SW SE SE SEC. 20, T. 109 N., R. 57 W.

10 - 14 SAND AND GRAVEL, BROWN, COARSE SAND, MEDIUM GRAVEL, CLAYEY; OXIDIZED, SATURATED

* * * *

TEST HOLE NUMBER: 29
LOCATION: 109N-57W-27DDDD
LEGAL LOCATION: SE SE SE SE SEC. 27, T. 109 N., R. 57 W.

1 - 4 SAND, BROWN, MEDIUM, CLAYEY
6 - 8 SAND, BROWN, MEDIUM-COARSE, VERY CLAYEY; OXIDIZED

* * * *

TEST HOLE NUMBER: 30
LOCATION: 109N-57W-29ADDD
LEGAL LOCATION: SE SE SE NE SEC. 29, T. 109 N., R. 57 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

4 - 6 SAND, BROWN, MEDIUM, GRAVELLY FROM 5 TO 6 FEET; MOIST
9 - 11 SAND, DARK-BROWN, MEDIUM, CLAYEY; SATURATED

* * * *

TEST HOLE NUMBER: 31
LOCATION: 109N-57W-32AAAA
LEGAL LOCATION: NE NE NE NE SEC. 32, T. 109 N., R. 57 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

0 - 4 GRAVEL, COARSE; AND COBBLES

* * * *

TEST HOLE NUMBER: 32
LOCATION: 109N-57W-33BBBB
LEGAL LOCATION: NW NW NW SW SEC. 33, T. 109 N., R. 57 W.

4 - 11 SAND AND GRAVEL, BROWN, COARSE SAND, MEDIUM GRAVEL, CLAYEY; OXIDIZED

* * * *
TEST HOLE NUMBER: 33
LOCATION: 109N-57W-32C0DC
LEGAL LOCATION: SW SE SE SW SEC. 33, T. 109 N., R. 57 W.

6 - 15 SAND, BROWN, COARSE, VERY SILTY; SATURATED; GETTING MORE GRAVELLY WITH DEPTH

*** *

TEST HOLE NUMBER: 34
LOCATION: 109N-58W-21C0DC
LEGAL LOCATION: SW SE SW SW SEC. 21, T. 109 N., R. 58 W.

0 - 2 GRAVEL, COARSE, CLAYEY; OXIDIZED, MOIST (ROADFILL?)

*** *

TEST HOLE NUMBER: 35
LOCATION: 110N-53W-01B0CD
LEGAL LOCATION: SE SW NE NW SEC. 01, T. 110 N., R. 53 W.

6 - 8 SAND, BROWN, FINE, SILTY; OXIDIZED

*** *

TEST HOLE NUMBER: 36
LOCATION: 110N-53W-19A0DC
LEGAL LOCATION: SW SE NW NE SEC. 19, T. 110 N., R. 53 W.

0 - 1 SAND, BROWN, MEDIUM, SILTY; MOIST, OXIDIZED, SOME PEBBLES
3 - 15 SAND, DARK-BROWN, FINE, VERY SILTY, VERY CLAYEY, PEBBLY; MOIST, OXIDIZED

*** *

TEST HOLE NUMBER: 37
LOCATION: 110N-53W-26B0CB
LEGAL LOCATION: NW SW NW SW SEC. 28, T. 110 N., R. 53 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

17 - 19 SAND, MEDIUM

*** *

TEST HOLE NUMBER: 38
LOCATION: 110N-54W-04C0BB

12
LEGAL LOCATION: NW NW NW SW SEC. 04, T. 110 N., R. 58 W.

0 - 1 GRAVEL, BROWN, MEDIUM, SANDY; MOIST, OXIDIZED

TEST HOLE NUMBER: 39
LOCATION: 110N-55W-07BCCB
LEGAL LOCATION: NW SW NW SW SEC. 07, T. 110 N., R. 55 W.

8 - 11 SAND, YELLOWISH-BROWN, MEDIUM; FAIRLY CLEAN, SATURATED
11 - 14 SAND, GRAY, MEDIUM; SATURATED

TEST HOLE NUMBER: 40
LOCATION: 110N-55W-08CCCC
LEGAL LOCATION: SW SW SW SW SEC. 08, T. 110 N., R. 55 W.

1 - 5 SAND, RED-BROWN, FINE, CLAYEY; OXIDIZED

TEST HOLE NUMBER: 41
LOCATION: 110N-55W-17DCCD
LEGAL LOCATION: SE SW SW SE SEC. 17, T. 110 N., R. 55 W.

0 - 7 SAND, MEDIUM, VERY CLAYEY; DRY
9 - 11 SAND, BROWN, MEDIUM, CLAYEY; DRY
11 - 20 SAND, YELLOWISH-BROWN, MEDIUM, CLAYEY, SATURATED

TEST HOLE NUMBER: 42
LOCATION: 110N-55W-19DBBB
LEGAL LOCATION: NW NW SE SE SEC. 19, T. 110 N., R. 55 W.

0 - 5 SAND, RED-BROWN, COARSE, CLAYEY, PEBBLY, MODERATELY SORTED; OXIDIZED, MOIST

TEST HOLE NUMBER: 43
LOCATION: 110N-55W-20ABAA
LEGAL LOCATION: NE NE NW NE SEC. 20, T. 110 N., R. 55 W.

0 - 3 GRAVEL, LIGHT-GRAY, SANDY, PEBBLY; DRY (ROADFILL?)

***

TEST HOLE NUMBER: 44
LOCATION: 110N-55W-20BCCD
LEGAL LOCATION: SE SW SW NW SEC. 20, T. 110 N., R. 55 W.

5 - 13 SAND, YELLOWISH-BROWN, GRAVELLY, VERY CLAYEY; DRY
13 - 23 SAND, BROWN, MEDIUM; SOME CLAY, SATURATED
23 - 30 SAND, GRAY, COARSE; MUCH CLAY, AMOUNT OF CLAY INCREASED WITH DEPTH

***

TEST HOLE NUMBER: 46
LOCATION: 110N-55W-20BDAC
LEGAL LOCATION: SW NE SE NW SEC. 20, T. 110 N., R. 55 W.

0 - 16 SAND AND GRAVEL, RED-BROWN, FINE GRAVEL; OXIDIZED, MOIST, MOSTLY CLEAN
16 - 20 SAND AND GRAVEL, GRAYISH, COARSE SAND, FINE GRAVEL; SATURATED AT 20 FEET

***

TEST HOLE NUMBER: 46
LOCATION: 110N-55W-20BDBB
LEGAL LOCATION: NW NW SE NW SEC. 20, T. 110 N., R. 55 W.

1 - 7 SAND, BROWN, MEDIUM; DRY
7 - 17 SAND, BROWN, MEDIUM; SOME PEBBLES, SOME COBBLES, DRY
17 - 22 SAND, BROWN, MEDIUM; FAIRLY CLEAN, SATURATED
22 - 40 SAND, BROWN, MEDIUM TO COARSE; SOME CLAY, SATURATED

***

TEST HOLE NUMBER: 47
LOCATION: 110N-55W-30BBB
LEGAL LOCATION: NW NW NW NW SEC. 30, T. 110 N., R. 55 W.
1 -  5  GRAVEL, LIGHT-BROWN, MEDIUM, VERY CLAYEY; DRY, OXIDIZED
5 -  7  GRAVEL, REDDISH-BROWN, FINE TO MEDIUM, SANDY, POORLY SORTED; MOIST, OXIDIZED

** **

TEST HOLE NUMBER:  48
LOCATION:  110N-56W-01CC
LEGAL LOCATION:  SW SE SW SE SEC. 01, T. 110 N., R. 56 W.

12 -  24  SAND, YELLOWISH-BROWN, MEDIUM; SATURATED
24 -  34  SAND, GRAY, MEDIUM; MUCH CLAY, SATURATED

** **

TEST HOLE NUMBER:  49
LOCATION:  110N-56W-02BAAA
LEGAL LOCATION:  NE NE NE NW SEC. 02, T. 110 N., R. 56 W.

3 -  5  GRAVEL, BROWN, FINE, SANDY; DRY, OXIDIZED

** **

TEST HOLE NUMBER:  50
LOCATION:  110N-56W-03AAA
LEGAL LOCATION:  NE NE NE NE SEC. 03, T. 110 N., R. 56 W.

2 -  13  SAND, BROWN, FINE, WELL-SORTED; MOIST, OXIDIZED (OUTWASH)
13 -  14  SAND, DARK-BROWN, FINE; VERY MOIST, SLIGHTLY OXIDIZED
14 -  21  SAND, DARK-BROWN, FINE, VERY SILTY; VERY MOIST, SATURATED AT 16 FEET, OXIDIZED

** **

TEST HOLE NUMBER:  51
LOCATION:  110N-56W-03BBB
LEGAL LOCATION:  NW NW NW NW SEC. 03, T. 110 N., R. 56 W.

5 -  16  SAND, GRAY, MEDIUM TO COARSE, CLAYEY, MODERATELY SORTED; SATURATED, UNOXIDIZED

** **

TEST HOLE NUMBER:  52
LOCATION:  110N-56W-03CADD
LEGAL LOCATION: SE NE NE SW SEC. 03, T. 110 N., R. 56 W.

22 - 57 SAND AND GRAVEL, GRAY, FINE; SOME CLAY, SATURATED

** **

TEST HOLE NUMBER: 53
LOCATION: 11ON-56W-03DAAA
LEGAL LOCATION: NE NE SE SEC. 03, T. 110 N., R. 56 W.

0 - 5 GRAVEL, YELLOWISH-BROWN, MEDIUM; DRY
5 - 25 SAND AND GRAVEL, YELLOWISH-BROWN, FINE; DRY
25 - 48 SAND, YELLOWISH-BROWN, VERY FINE; MUCH CLAY, VISCIOUS, SATURATED

** **

TEST HOLE NUMBER: 54
LOCATION: 11ON-56W-04BABB
LEGAL LOCATION: NW NW NE NW SEC. 04, T. 110 N., R. 56 W.

0 - 9 GRAVEL, BROWN, MEDIUM, VERY SANDY; DRY OXIDIZED

** **

TEST HOLE NUMBER: 55
LOCATION: 11ON-56W-09AAAA
LEGAL LOCATION: NE NE NE SEC. 09, T. 110 N., R. 56 W.

1 - 3 SAND, BROWN, FINE, CLAYEY, POORLY SORTED; MOIST, OXIDIZED
3 - 19 GRAVEL, BROWN, COARSE, CLAYEY, MODERATELY SORTED; MOIST, OXIDIZED

** **

TEST HOLE NUMBER: 56
LOCATION: 11ON-56W-10AAAA
LEGAL LOCATION: NE NE NE SEC. '0, T. 110 N., R. 56 W.

5 - 7 GRAVEL, YELLOWISH-BROWN, COBBLY; DRY
10 - 11 SAND, YELLOWISH-BROWN, VERY FINE; MOIST
15 - 19 SAND, YELLOWISH-BROWN, VERY FINE; SLIGHTLY MOIST, COMPACT
19 - 35 SAND, YELLOWISH-BROWN, MEDIUM; SOME CLAY,
SATURATED

** **

TEST HOLE NUMBER: 57
LOCATION: 110W-56W-1CADD
LEGAL LOCATION: SE SE NE SEC. 10, T. 110 N., R. 56 W.

15 - 20 SAND, GRAY, FINE; VISCOS, SATURATED
20 - 55 SAND, GRAY, COARSE, GRAVELY; SOME CLAY, SOME COAL, SATURATED

** **

TEST HOLE NUMBER: 58
LOCATION: 110W-56W-1OBBB
LEGAL LOCATION: NW NW NW NW SEC. 10, T. 110 N., R. 56 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 8 SAND AND GRAVEL, RUSTY-BROWN SAND, MEDIUM TO COARSE (OUTWASH)
8 - 21 SAND AND GRAVEL, MEDIUM TO COARSE

** **

TEST HOLE NUMBER: 59
LOCATION: 110W-56W-11AAAD
LEGAL LOCATION: SE NE NE NE SEC. 11, T. 110 N., R. 56 W.

1 - 4 SAND, LIGHT-BROWN, MEDIUM, MODERATELY SORTED; MOIST, OXIDIZED
4 - 6 GRAVEL, BROWN, COARSE, CLAYEY; MOIST, OXIDIZED

** **

TEST HOLE NUMBER: 60
LOCATION: 110W-56W-11BAAA
LEGAL LOCATION: NE NE NE NW SEC. 11, T. 110 N., R. 56 W.

9 - 16 SAND, YELLOWISH-BROWN, VERY FINE; MOIST
16 - 24 SAND, DARK-BROWN, FINE; MUCH CLAY, SOME COAL, SATURATED
24 - 46 SAND, GRAY, FINE; SOME CLAY, SOME COAL, SATURATED

** **

TEST HOLE NUMBER: 61
LOCATION: 110W-56W-11BBCB

17
<table>
<thead>
<tr>
<th>Test Hole Number</th>
<th>Location</th>
<th>Legal Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>62</td>
<td>110N-56W-11CCCC</td>
<td>SW SW SW NW Sec. 11, T. 110 N., R. 56 W.</td>
</tr>
<tr>
<td>63</td>
<td>110N-56W-11CDDD</td>
<td>SE SE SE SW Sec. 11, T. 110 N., R. 56 W.</td>
</tr>
<tr>
<td>64</td>
<td>110N-56W-11DDDDD</td>
<td>SE SE SE SE Sec. 11, T. 110 N., R. 56 W.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Sand, Brown, Fine, Well-Sorted; Moist, Oxidized</td>
</tr>
<tr>
<td>3</td>
<td>Sand, Reddish-Brown, Fine, Well-Sorted; Moist, Oxidized</td>
</tr>
<tr>
<td>11</td>
<td>Gravel, Brown, Fine to Medium, Sandy, Poorly Sorted; Moist, Oxidized</td>
</tr>
<tr>
<td>15</td>
<td>Sand, Brown, Medium, Moderately Sorted; Moist, Oxidized</td>
</tr>
<tr>
<td>20</td>
<td>Gravel, Brown, Medium, Sandy, Poorly Sorted; Moist, Oxidized, Abandoned Hole</td>
</tr>
<tr>
<td>0</td>
<td>Sand and Gravel, Yellowish-Brown; Dry</td>
</tr>
<tr>
<td>1</td>
<td>Sand, Reddish-Brown, Fine, Moderately Sorted; Dry, Oxidized</td>
</tr>
<tr>
<td>7</td>
<td>Sand, Brown, Vert Fine, Silty Well-Sorted; Moist, Oxidized</td>
</tr>
<tr>
<td>17</td>
<td>Gravel, Brown, Medium; Dry, Oxidized</td>
</tr>
<tr>
<td>18</td>
<td>Sand, Dark-Brown, Fine, Well-Sorted; Moist, Oxidized</td>
</tr>
<tr>
<td>19</td>
<td>Sand, Dark-Brown, Medium, Moderately Sorted; Saturated, Oxidized</td>
</tr>
<tr>
<td>4</td>
<td>Sand, Yellowish-Brown; Much Clay, Dry</td>
</tr>
<tr>
<td>10</td>
<td>Sand, Yellowish-Brown, Fine; Much Clay, Moist, Saturated at 12 Feet</td>
</tr>
</tbody>
</table>
TEST HOLE NUMBER: 65
LOCATION: 110N-56W-12AAAB
LEGAL LOCATION: NW NE NE NE SEC. 12, T. 110 N., R. 56 W.

3 - 13 SAND, RED-BROWN, FINE, CLAYEY, MODERATELY TO POORLY SORTED; OXIDIZED, MOIST, WITH PEBBLES, VERY CLAYEY AT 10 FEET

** **

TEST HOLE NUMBER: 66
LOCATION: 110N-56W-12BAB
LEGAL LOCATION: NW NE NW NE SEC. 12, T. 110 N., R. 56 W.

1 - 14 SAND, RED-BROWN, MEDIUM, CLAYEY, POORLY SORTED; OXIDIZED, MOIST, SATURATED AT 10 FEET
14 - 21 SAND, RED-BROWN, COARSE, POORLY SORTED; OXIDIZED

** **

TEST HOLE NUMBER: 67
LOCATION: 110N-56W-12CABD
LEGAL LOCATION: SE SW NE SW SEC. 12, T. 110 N., R. 56 W.

0 - 10 SAND, BROWN, FINE; MOIST, SATURATED AT 8 FEET

** **

TEST HOLE NUMBER: 68
LOCATION: 110N-56W-12DABB
LEGAL LOCATION: NW NW NW SE SEC. 12, T. 110 N., R. 56 W.

0 - 7 SAND AND GRAVEL, YELLOWISH-BROWN, FINE TO MEDIUM SAND, VERY CLAYEY; DRY
7 - 24 SAND, YELLOWISH-BROWN, MEDIUM, CLAYEY; SOME FINE GRAVEL, SATURATED
24 - 36 SAND, GRAY, MEDIUM, CLAYEY; SATURATED

** **

TEST HOLE NUMBER: 69
LOCATION: 110N-56W-12DCD
LEGAL LOCATION: SE SW SW SE SEC. 12, T. 110 N., R. 56 W.

4 - 9 SAND AND GRAVEL, YELLOWISH-BROWN, VERY
9 - 15 SAND, BROWN, FINE TO MEDIUM; MUCH CLAY, SATURATED
15 - 20 SAND, BROWN, MEDIUM, CLAYEY; FAIRLY CLEAN, SATURATED
20 - 29 SAND, GRAY, MEDIUM, CLAYEY; AMOUNT OF CLAY INCREASES WITH DEPTH, SATURATED

TEST HOLE NUMBER: 70
LOCATION: 110N-56W-13CCC
LEGAL LOCATION: SW SW SW SW SEC. 13, T. 110 N., R. 56 W.

0 - 8 SAND AND GRAVEL, BROWN; DRY
8 - 16 SAND, YELLOW, FINE; CLEAN, DRY
16 - 23 GRAVEL, BROWN, COARSE, SANDY
23 - 32 SAND, BROWN, MEDIUM; SOME CLAY, SATURATED

TEST HOLE NUMBER: 71
LOCATION: 110N-56W-14BBBB
LEGAL LOCATION: NW NW NW NW SEC. 14, T. 110 N., R. 56 W.

2 - 20 SAND AND GRAVEL, MEDIUM TO COARSE
20 - 25 SAND, FINE

TEST HOLE NUMBER: 72
LOCATION: 110N-56W-14DDDD
LEGAL LOCATION: SE SE SE SE SEC. 14, T. 110 N., R. 56 W.

1 - 5 GRAVEL, BROWN, FINE TO MEDIUM, SANDY; OXIDIZED, DRY
5 - 27 SAND, BROWN, VERY FINE, SILTY; OXIDIZED, MOIST, SATURATED AT 21 FEET; CONTAINS CLAY LENSES

TEST HOLE NUMBER: 73
LOCATION: 110N-56W-15ABAA
LEGAL LOCATION: NE NE NW NE SEC. 15, T. 110 N., R. 56 W.

15 - 18 SAND, BROWN, MEDIUM, PEBBLY; OXIDIZED, DRY
25 - 39 GRAVEL, BROWN, MEDIUM, SANDY; OXIDIZED,
DRY

TEST HOLE NUMBER: 74
LOCATION: 110N-56W-15CDCC
LEGAL LOCATION: SW SE SE SW SEC. 15, T. 110 N., R. 56 W.

1 - 19 GRAVEL, BROWN, COARSE, CLAYEY, POORLY SORTED; DRY, OXIDIZED

TEST HOLE NUMBER: 75
LOCATION: 110N-56W-15DDDD
LEGAL LOCATION: SE SE SE SE SEC. 15, T. 110 N., R. 56 W.

4 - 7 SAND, YELLOW, MEDIUM, GRAVELLY, CLAYEY; DRY
7 - 14 SAND, BROWN, COARSE, GRAVELLY, VERY CLAYEY; DRY
14 - 57 SAND, YELLOWISH-BROWN, VERY CLAYEY; TURNS GRAY AT 30 FEET, FAIRLY CLEAN FROM 40 TO 50 FEET, SATURATED

TEST HOLE NUMBER: 76
LOCATION: 110N-56W-22ADD
LEGAL LOCATION: SE SE SE NE SEC. 22, T. 110 N., R. 56 W.

1 - 6 GRAVEL, BROWN, COARSE, CLAYEY, POORLY SORTED; DRY, OXIDIZED
6 - 11 SAND, REDDISH-BROWN, MEDIUM, MODERATELY SORTED; DRY, OXIDIZED
11 - 15 GRAVEL, BROWN, COARSE, MODERATELY SORTED; DRY, OXIDIZED
15 - 17 SAND, BROWN, MEDIUM, MODERATELY SORTED; DRY, OXIDIZED
19 - 20 SAND, LIGHT-BROWN, FINE, WELL-SORTED; VERY MOIST, OXIDIZED

TEST HOLE NUMBER: 77
LOCATION: 110N-56W-24BADA
LEGAL LOCATION: NE SE NE NW SEC. 24, T. 110 N., R. 56 W.

0 - 8 SAND, BROWN, MEDIUM; CLEAN, DRY
8 – 10  SAND, BROWN; SOME GRAVEL, DRY
10 – 32  SAND, YELLOWISH-BROWN, FINE; SOME GRAVEL, SOME CLAY, SATURATED, VISCOUS, BECOMES GRAY AND VERY CLAYEY AFTER 25 FEET

** **

TEST HOLE NUMBER: 78
LOCATION: 110N-56W-24CCC
LEGAL LOCATION: SW SW SW SW SEC. 24, T. 110 N., R. 56 W.

0 – 5  SAND AND GRAVEL, YELLOWISH-BROWN; DRY
5 – 15  SAND, YELLOW, VERY FINE; CLEAN, DRY; SATURATED AFTER 12 FEET
15 – 52  SAND, BROWN, VERY FINE, CLAYEY; TURNS TO GRAY AT 20 FEET, FAIRLY CLEAN FROM 35 TO 45 FEET, VERY CLAYEY AFTER 45 FEET, SATURATED

** **

TEST HOLE NUMBER: 79
LOCATION: 110N-56W-25BAAA
LEGAL LOCATION: NE NE NE NE NW SEC. 25, T. 110 N., R. 56 W.

1 – 5  GRAVEL
5 – 17  SAND, COARSE
17 – 30  SAND, MEDIUM; SAMPLLED AT 20 FEET

** **

TEST HOLE NUMBER: 80
LOCATION: 110N-56W-26BAAA
LEGAL LOCATION: NE NE NW NW SEC. 26, T. 110 N., R. 56 W.

2 – 11  SAND, BROWN, MEDIUM, PEBBLY; OXIDIZED, MOIST

** **

TEST HOLE NUMBER: 81
LOCATION: 110N-56W-26BBBB
LEGAL LOCATION: NW NW NW NW NW SEC. 26, T. 110 N., R. 56 W.

1 – 7  SAND, BROWN, MEDIUM, GRAVELY; OXIDIZED, DRY
7 – 12  GRAVEL, BROWN, COARSE, SANDY; OXIDIZED, DRY
12 – 20  GRAVEL, BROWN, MEDIUM, SANDY; OXIDIZED,
** DRY **

* * * *

** TEST HOLE NUMBER: 82 **
** LOCATION: 110N-56W-26CDDC **
** LEGAL LOCATION: SE SW SE SW SEC. 26, T. 110 N., R. 56 W. **

<table>
<thead>
<tr>
<th>1 -</th>
<th>4</th>
<th>GRAVEL, BROWN, COARSE, MODERATELY SORTED; MOIST, OXIDIZED</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 -</td>
<td>7</td>
<td>SAND, BROWN, MEDIUM, WELL-SORTED; MOIST, OXIDIZED</td>
</tr>
<tr>
<td>7 -</td>
<td>11</td>
<td>GRAVEL, BROWN, COARSE, MODERATELY SORTED; MOIST, OXIDIZED</td>
</tr>
<tr>
<td>11 -</td>
<td>15</td>
<td>SAND, BROWN, MEDIUM TO COARSE, MODERATELY SORTED; MOIST, OXIDIZED</td>
</tr>
<tr>
<td>25 -</td>
<td>29</td>
<td>GRAVEL, REDDISH-BROWN, MEDIUM, VERY CLAYETY, SANDY, POORLY SORTED; MOIST, OXIDIZED</td>
</tr>
</tbody>
</table>

* * * *

** TEST HOLE NUMBER: 83 **
** LOCATION: 110N-56W-26DDDD **
** LEGAL LOCATION: SE SE SE SE SEC. 26, T. 110 N., R. 56 W. **

<table>
<thead>
<tr>
<th>0 -</th>
<th>10</th>
<th>GRAVEL, MEDIUM TO COARSE, SANDY; OXIDIZED, DRY</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 -</td>
<td>45</td>
<td>SAND, LIGHT-BROWN, VERY FINE; OXIDIZED, DRY, MOIST AT 14 FEET, SOME CLAY LENSES AFTER 23 FEET</td>
</tr>
</tbody>
</table>

* * * *

** TEST HOLE NUMBER: 84 **
** LOCATION: 110N-56W-26DDDD 1 **
** LEGAL LOCATION: SE SE SE SE SEC. 26, T. 110 N., R. 56 W. **
** PRELIMINARY LOG -- SUBJECT TO CHANGE **

<table>
<thead>
<tr>
<th>0 -</th>
<th>15</th>
<th>SAND AND GRAVEL, FINE SAND TO COARSE GRAVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 -</td>
<td>32</td>
<td>SAND, FINE</td>
</tr>
</tbody>
</table>

* * * *

** TEST HOLE NUMBER: 85 **
** LOCATION: 110N-56W-30BAAB **
** LEGAL LOCATION: NW NE NE NW SEC. 30, T. 110 N., R. 56 W. **

<table>
<thead>
<tr>
<th>1 -</th>
<th>6</th>
<th>SAND, COARSE, POORLY SORTED; OXIDIZED,</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>** 23 **</td>
</tr>
</tbody>
</table>
MOIST, CLEAN

* * * *

TEST HOLE NUMBER: 86
LOCATION: 110N-56W-32CCCD
LEGAL LOCATION: SE SW SW SW SEC. 32, T. 110 N., R. 56 W.

1 - 5 SAND, REDDISH-BROWN, COARSE, CLAYEY, POORLY SORTED; OXIDIZED, MOIST
* * * *

TEST HOLE NUMBER: 87
LOCATION: 110N-56W-35ADDA
LEGAL LOCATION: NE SE NE NE SEC. 35, T. 110 N., R. 56 W.

1 - 5 GRAVEL, COARSE
5 - 11 SAND, FINE TO COARSE, POORLY SORTED; SOME MEDIUM GRAVEL
24 - 31 SAND, VERY FINE, WELL-SORTED
* * * *

TEST HOLE NUMBER: 88
LOCATION: 118N-56W-35DDDD
LEGAL LOCATION: SE SE SE SE SEC. 35, T. 110 N., R. 56 W.

0 - 3 SAND, BROWN, MEDIUM TO COARSE; MOIST, SOME FINE GRAVEL
3 - 7 SAND, LIGHT-BROWN, MEDIUM; MOIST, SOME PEBBLES
7 - 10 SAND AND GRAVEL, BROWN, MEDIUM SAND, COARSE GRAVEL, POORLY SORTED; MOIST
* * * *

TEST HOLE NUMBER: 89
LOCATION: 110N-57W-08CDDD
LEGAL LOCATION: SE SE SW SW SEC. 08, T. 110 N., R. 57 W.

0 - 1 GRAVEL, SANDY (ROADFILL)
5 - 8 SAND AND GRAVEL, RED-BROWN, COARSE, VERY CLAYEY; OXIDIZED
* * * *

TEST HOLE NUMBER: 90
LOCATION: 110N-57W-12ABBA

24
LEGAL LOCATION: NE NW NW NE SEC. 12, T. 110 N., R. 57 W.

1 - 3 GRAVEL, BROWN, COARSE, SUBOUNDED, WELL-SORTED; DRY

* * * *

TEST HOLE NUMBER: 91
LOCATION: 110N-57W-13AAA
LEGAL LOCATION: NE NE NE NE SEC. 13, T. 110 N., R. 57 W.

2 - 3 GRAVEL, REDDISH, MEDIUM; OXIDIZED

* * * *

TEST HOLE NUMBER: 92
LOCATION: 110N-57W-1TCD
LEGAL LOCATION: SE SE SE SW SE SEC. 17, T. 110 N., R. 57 W.

5 - 16 SAND, DARK-BROWN, COARSE, CLAYEY, POORLY SORTED; OXIDIZED, SATURATED

* * * *

TEST HOLE NUMBER: 93
LOCATION: 110N-57W-2ODCD
LEGAL LOCATION: SE SW SE SE SEC. 20, T. 110 N., R. 57 W.

4 - 8 SAND, BROWN, FINE, VERY CLAYEY; SATURATED AT 5 FEET

* * * *

TEST HOLE NUMBER: 94
LOCATION: 110N-57W-29BAAA
LEGAL LOCATION: NE NE NE NW SEC. 29, T. 110 N., R. 57 W.

6 - 8 GRAVEL, LIGHT-BROWN, COARSE, CLAYEY, POORLY SORTED; OXIDIZED

* * * *

TEST HOLE NUMBER: 95
LOCATION: 110N-57W-29DCCC
LEGAL LOCATION: SW SW SE SEC. 29, T. 110 N., R. 57 W.

6 - 2z SAND, BROWN, COARSE, VERY CLAYEY, POORLY
SORTED; OXIDIZED, SATURATED

* * * *

TEST HOLE NUMBER:  96
LOCATION: 110N-57W-32AAA
LEGAL LOCATION: NE NE NE NE SEC. 32, T. 110 N., R. 57 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

0 - 3 SAND AND GRAVEL; COVERED BY SOIL

* * * *

TEST HOLE NUMBER:  97
LOCATION: 110N-58W-06BAAA
LEGAL LOCATION: NW NE NE NW SEC. 06, T. 110 N., R. 58 W.

7 - 9 GRAVEL, RED-BROWN, SILTY, SANDY

* * * *

TEST HOLE NUMBER:  98
LOCATION: 110N-58W-26CCCC
LEGAL LOCATION: SE SE SW SW SEC. 26, T. 110 N., R. 58 W.

0 - 1 GRAVEL, COARSE, CLAYEY; MOIST (ROADFILL?)

* * * *

TEST HOLE NUMBER:  99
LOCATION: 110N-59W-12DDDD
LEGAL LOCATION: SE SE SE SE SEC. 12, T. 110 N., R. 59 W.

11 - 20 GRAVEL, FINE TO MEDIUM, ANGULAR;
SATURATED

* * * *

TEST HOLE NUMBER:  100
LOCATION: 111N-53W-09AADD
LEGAL LOCATION: SE SE NE NE SEC. 09, T. 111 N., R. 53 W.

2 - 4 SAND, BROWN, COARSE, GRAVELLY; DRY, OXIDIZED

4 - 7 SAND, BROWN, FINE, WELL-SORTED; MOIST, OXIDIZED

7 - 10 SAND, DARK-BROWN, MEDIUM TO COARSE, CLAYEY; SATURATED, OXIDIZED, LENSES OF CLAY
16 - 26 GRAVEL, GRAY, FINE, SANDY; SATURATED, UNOXIDIZED

* * *

TEST HOLE NUMBER:  101
LOCATION:  111N-53W-10BABA
LEGAL LOCATION:  NE NW NE NW SEC. 10, T. 111 N., R. 53 W.

1 - 5 SAND, BROWN, COARSE, GRAVELLY, POORLY SORTED; DRY, OXIDIZED
14 - 17 SAND, BROWN, MEDIUM, WELL-SORTED; MOIST, OXIDIZED
19 - 22 SAND, REDDISH-BROWN, COARSE, GRAVELLY, MODERATELY SORTED; SATURATED, OXIDIZED

* * *

TEST HOLE NUMBER:  102
LOCATION:  111N-53W-19ADAD
LEGAL LOCATION:  SE NE SE NE SEC. 19, T. 111 N., R. 53 W.

10 - 16 SAND, GRAY-BROWN, FINE, CLAYEY; SATURATED

* * *

TEST HOLE NUMBER:  103
LOCATION:  111N-55W-12CCCC
LEGAL LOCATION:  SW SW SW SW SEC. 12, T. 111 N., R. 55 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

11 - 21 SAND, FINE TO MEDIUM

* * *

TEST HOLE NUMBER:  104
LOCATION:  111N-56W-04BBBB
LEGAL LOCATION:  NW NW NW NW SEC. 04, T. 111 N., R. 56 W.

2 - 6 SAND, LIGHT-BROWN, MEDIUM
6 - 10 SAND, BROWN, SILTY
10 - 18 SAND, BROWN, COARSE, SILTY
18 - 34 GRAVEL, GRAY, FINE TO MEDIUM, SILTY

* * *

TEST HOLE NUMBER:  105
LOCATION:  111N-56W-04CCCC
LEGAL LOCATION:  SW SW SW NW SEC. 04, T. 111 N., R. 56 W.
6 - 11 SAND, LIGHT-BROWN, MEDIUM, CLAYEY
   * * *

TEST HOLE NUMBER: 106
LOCATION: 111N-56W-04DCCC
LEGAL LOCATION: SW SW SW SE SEC. 04, T. 111 N., R. 56 W.

1 - 4 GRAVEL, BROWN, FINE, CLAYEY, POORLY SORTED; DRY, OXIDIZED
4 - 5 SAND, DARK-BROWN, MEDIUM, CLAYEY, POORLY SORTED; MOIST, OXIDIZED
5 - 16 GRAVEL, BROWN, MEDIUM, CLAYEY, POORLY SORTED; MOIST, SATURATED AT 6 FEET, OXIDIZED
16 - 26 SAND, BROWN, COARSE, WELL SORTED; SATURATED, OXIDIZED
   * * *

TEST HOLE NUMBER: 107
LOCATION: 111N-56W-05ABAA
LEGAL LOCATION: NE NE NW NE SEC. 05, T. 111 N., R. 56 W.

4 - 7 GRAVEL, REDDISH-BROWN, MEDIUM, SANDY, POORLY SORTED; MOIST, OXIDIZED
7 - 11 GRAVEL, REDDISH-BROWN, MEDIUM, CLAYEY, SANDY, POORELY SORTED; VERY MOIST, OXIDIZED
   * * *

TEST HOLE NUMBER: 108
LOCATION: 111N-56W-05ACCC
LEGAL LOCATION: SW SW SW NE SEC. 05, T. 111 N., R. 56 W.

22 - 31 SAND AND GRAVEL, BROWN
   * * *

TEST HOLE NUMBER: 109
LOCATION: 111N-56W-05BAAA
LEGAL LOCATION: NE NE NE NW SEC. 05, T. 111 N., R. 56 W.

1 - 7 SAND, LIGHT-BROWN, FINE, SILTY
7 - 9 SAND, BROWN, FINE, SILTY
14 - 23 SAND, BROWN, MEDIUM TO COARSE, SILTY, PEBBLY
   * * *

28
<table>
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<th>TEST HOLE NUMBER:</th>
<th>110</th>
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<tbody>
<tr>
<td>LOCATION: NW NE SW NW SEC. 05, T. 111 N., R. 56 W.</td>
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</tr>
<tr>
<td>2 - 5</td>
<td>SAND, BROWN, FINE, SILTY</td>
</tr>
<tr>
<td>5 - 13</td>
<td>GRAVEL, BROWN, SANDY, SILTY</td>
</tr>
<tr>
<td>13 - 28</td>
<td>SAND, BROWN, MEDIUM TO COARSE, SILTY</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER:</th>
<th>111</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCATION: SW SW SW NW SEC. 05, T. 111 N., R. 56 W.</td>
<td></td>
</tr>
<tr>
<td>5 - 10</td>
<td>SAND, BROWN, COARSE, SILTY, PEBBLY</td>
</tr>
<tr>
<td>10 - 16</td>
<td>SAND, BROWN, VERY SILTY</td>
</tr>
<tr>
<td>16 - 24</td>
<td>SAND, BROWN, MEDIUM, VERY SILTY</td>
</tr>
<tr>
<td>24 - 27</td>
<td>SAND, GRAY, COARSE; SOME FINE GRAVEL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER:</th>
<th>112</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCATION: NW NW SW SW SEC. 05, T. 111 N., R. 56 W.</td>
<td></td>
</tr>
<tr>
<td>1 - 12</td>
<td>SAND, BROWN, MEDIUM TO COARSE; SOME GRAVEL</td>
</tr>
<tr>
<td>12 - 17</td>
<td>SAND, BROWN, COARSE; SOME GRAVEL</td>
</tr>
<tr>
<td>17 - 21</td>
<td>SAND, BROWN, COARSE, SILTY; SOME GRAVEL</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER:</th>
<th>113</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCATION: NE NE NE NW SEC. 06, T. 111 N., R. 56 W.</td>
<td></td>
</tr>
<tr>
<td>2 - 7</td>
<td>SAND, FINE, SILTY</td>
</tr>
<tr>
<td>7 - 10</td>
<td>SAND, LIGHT-BROWN, MEDIUM, GRAVELLY</td>
</tr>
<tr>
<td>10 - 13</td>
<td>GRAVEL, COARSE; SOME MEDIUM SAND, HIT ROCK, ABANDONED HOLE</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TEST HOLE NUMBER:</th>
<th>114</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOCATION: NE NE NE NW SEC. 06, T. 111 W., R. 56 W.</td>
<td></td>
</tr>
<tr>
<td>5 - 25</td>
<td>GRAVEL AND SAND, BROWN</td>
</tr>
</tbody>
</table>

29
TEST HOLE NUMBER: 115
LOCATION: 111N-56W-06BBB
LEGAL LOCATION: NW NW NW NW SEC. 06, T. 111 N., R. 56 W.

11 - 29 SAND, BROWN, MEDIUM, VERY SILTY

TEST HOLE NUMBER: 116
LOCATION: 111N-56W-06BBBB
LEGAL LOCATION: NW NW NW SE SEC. 06, T. 111 N., R. 56 W.

21 - 25 SAND, MEDIUM TO COARSE, CLAYEY
25 - 88 GRAVEL AND SAND

TEST HOLE NUMBER: 117
LOCATION: 111N-56W-06DBDD
LEGAL LOCATION: SE SE NW SE SEC. 06, T. 111 N., R. 56 W.

1 - 4 SAND, LIGHT-BROWN, FINE
4 - 20 GRAVEL, BROWN, MEDIUM TO COARSE, SILTY;
   SOME FINE SAND
20 - 42 GRAVEL, BROWN, FINE TO MEDIUM, CLAYEY

TEST HOLE NUMBER: 118
LOCATION: 111N-56W-06DCCC
LEGAL LOCATION: SW SW SW SE SEC. 06, T. 111 N., R. 56 W.

12 - 13 GRAVEL, BROWN, MEDIUM TO COARSE, CLAYEY,
   SAND, POORLY SORTED; MOIST
25 - 28 GRAVEL, GRAY, COARSE; ROCK, ABANDONED
   HOLE

TEST HOLE NUMBER: 119
LOCATION: 111N-56W-05DDDD
LEGAL LOCATION: SE SE SE SE SEC. 06, T. 111 N., R. 56 W.

3 - 9 SAND, RED-BROWN, MEDIUM; OXIDIZED, WITH
   SOME PEBBLES
TEST HOLE NUMBER: 120
LEGAL LOCATION: SE SE SE NE SEC. 07, T. 111 N., R. 56 W.

1 - 4 SAND, LIGHT-BROWN, FINE
4 - 7 SAND, BROWN, MEDIUM, SILTY, PEBBLY
7 - 10 SAND, BROWN, MEDIUM, CLEAN
17 - 23 SAND, BROWN, MEDIUM, CLAYEY

TEST HOLE NUMBER: 121
LEGAL LOCATION: NE NE SE SEC. 08, T. 111 N., R. 56 W.

0 - 19 SAND, BROWN, FINE, SILTY; OXIDIZED, DRY, BECOMING LESS SILTY AT 4 FEET
19 - 24 SAND AND GRAVEL, PEA-SIZE GRAVEL

TEST HOLE NUMBER: 122
LEGAL LOCATION: NE NW NE NW SEC. 08, T. 111 N., R. 56 W.

4 - 9 SAND, GRAY, MEDIUM TO COARSE, SILTY
9 - 36 SAND, GRAY, COARSE; SOME FINÉ GRAVEL

TEST HOLE NUMBER: 123
LEGAL LOCATION: NE NW NW NW SEC. 08, T. 111 N., R. 56 W.

5 - 49 SAND, MEDIUM TO COARSE, PEBBLY; SOME GRAVEL

TEST HOLE NUMBER: 124
LOCATION: NW NW NW NW SEC. 08, T. 111 N., R. 56 W.
3 - 12 SAND, LIGHT-BROWN, FINE, SILTY, PEBBLY
17 - 28 SAND, BROWN, SILTY, PEBBLY

** * * *

TEST HOLE NUMBER: 125
LOCATION: 111N-56W-08BCAD
LEGAL LOCATION: SE NE SW NW SEC. 08, T. 111 N., R. 56 W.

2 - 8 SAND, LIGHT-BROWN, FINE, GRAVELLY
8 - 14 SAND, BROWN, MEDIUM, SILTY, GRAVELLY
14 - 21 SAND, BROWN, MEDIUM, SILTY, VERY GRAVELLY
21 - 37 SAND, DARK-BROWN, MEDIUM TO COARSE, SILTY, GRAVELLY

** * * *

TEST HOLE NUMBER: 126
LOCATION: 111N-56W-08BDCC
LEGAL LOCATION: SW SW SE NW SEC. 08, T. 111 N., R. 56 W.

2 - 18 SAND, BROWN, FINE TO MEDIUM
18 - 35 GRAVEL, BROWN, MEDIUM TO COARSE, SANDY

** * * *

TEST HOLE NUMBER: 127
LOCATION: 111N-56W-08CDCD
LEGAL LOCATION: SE SW SE SW SEC. 08, T. 111 N., R. 56 W.

23 - 28 SAND, LIGHT-BROWN, CLAYEY

** * * *

TEST HOLE NUMBER: 128
LOCATION: 111N-56W-08DCCD
LEGAL LOCATION: SW SW SE SE SEC. 08, T. 111 N., R. 56 W.

6 - 12 SAND, GRAY, FINE TO MEDIUM, SILTY
12 - 23 SAND, GRAY, MEDIUM TO COARSE, SILTY
23 - 36 SAND, MEDIUM, SLIGHTLY SILTY; SOME FINE GRAVEL

** * * *

TEST HOLE NUMBER: 129
LOCATION: 111N-56W-08DDED
LEGAL LOCATION: SE SE SE SE SEC. 08, T. 111 N., R. 56 W.
<table>
<thead>
<tr>
<th>Test Hole Number</th>
<th>Location</th>
<th>Legal Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>130</td>
<td>111N-56W-08DDDD</td>
<td>SE SE SE SE Sec. 08, T. 111 N., R. 56 W.</td>
</tr>
<tr>
<td>131</td>
<td>111N-56W-09BBBB</td>
<td>NW NW NW NW Sec. 09, T. 111 N., R. 56 W.</td>
</tr>
<tr>
<td>132</td>
<td>111N-56W-09BBBB</td>
<td>NW NW NW SW Sec. 09, T. 111 N., R. 56 W.</td>
</tr>
<tr>
<td>133</td>
<td>111N-56W-09CCCC</td>
<td>SW SW SW SW Sec. 09, T. 111 N., R. 56 W.</td>
</tr>
</tbody>
</table>

**Test Hole Number: 130**
- **Location:** 111N-56W-08DDDD 1
- **Legal Location:** SE SE SE SE Sec. 08, T. 111 N., R. 56 W.
- **Preliminary Log:** Subject to change

1 - 30 Sand, reddish-brown, fine, becomes coarse with depth, well-sorted; oxidized, moist, saturated at 15 feet

**Test Hole Number: 131**
- **Location:** 111N-56W-09BBBB
- **Legal Location:** NW NW NW NW Sec. 09, T. 111 N., R. 56 W.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>10 SAND, BROWN, SILTY</td>
</tr>
<tr>
<td>10</td>
<td>22 SAND, BROWN, COARSE, SILTY</td>
</tr>
<tr>
<td>22</td>
<td>29 SAND, GRAY, COARSE, SILTY</td>
</tr>
</tbody>
</table>

**Test Hole Number: 132**
- **Location:** 111N-56W-09BBBB
- **Legal Location:** NW NW NW SW Sec. 09, T. 111 N., R. 56 W.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>11 SAND, BROWN, MEDIUM, GRAVELLY</td>
</tr>
<tr>
<td>11</td>
<td>16 SAND, BROWN, MEDIUM TO COARSE, GRAVELLY</td>
</tr>
<tr>
<td>16</td>
<td>21 SAND, BROWN, MEDIUM, SILTY</td>
</tr>
<tr>
<td>21</td>
<td>26 SAND, GRAY, MEDIUM, SILTY</td>
</tr>
</tbody>
</table>

**Test Hole Number: 133**
- **Location:** 111N-56W-09CCCC
- **Legal Location:** SW SW SW SW Sec. 09, T. 111 N., R. 56 W.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>17 SAND, BROWN, SILTY</td>
</tr>
<tr>
<td>17</td>
<td>20 SAND, BROWN, COARSE, SILTY</td>
</tr>
<tr>
<td>20</td>
<td>28 SAND, GRAY, COARSE, SILTY, CLAYEY</td>
</tr>
</tbody>
</table>

**Test Hole Number: 134**
- **Location:** 111N-56W-10CCCC
LEGAL LOCATION: SW SW SW SW SEC. 10, T. 111 N., R. 56 W.

<table>
<thead>
<tr>
<th>Test Hole</th>
<th>Sand, Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 6</td>
<td>SAND, BROWN, COARSE, SILTY</td>
</tr>
<tr>
<td>6 - 11</td>
<td>SAND, BROWN, SILTY, PEBBLY</td>
</tr>
<tr>
<td>11 - 12</td>
<td>GRAVEL, BROWN, SANDY, SILTY</td>
</tr>
<tr>
<td>12 - 21</td>
<td>SAND, BROWN, COARSE, SILTY</td>
</tr>
<tr>
<td>21 - 42</td>
<td>SAND, CLAYEY</td>
</tr>
</tbody>
</table>

TEST HOLE NUMBER: 135
LOCATION: 111N-56W-15CBBB
LEGAL LOCATION: NW NW NW SW SEC. 15, T. 111 N., R. 56 W.

<table>
<thead>
<tr>
<th>Test Hole</th>
<th>Sand, Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 - 8</td>
<td>SAND, REDDISH-BROWN, MEDIUM, PEBBLY</td>
</tr>
<tr>
<td>8 - 14</td>
<td>SAND, REDDISH-BROWN, MEDIUM TO COARSE, CLAYEY</td>
</tr>
</tbody>
</table>

TEST HOLE NUMBER: 136
LOCATION: 111N-56W-15DDDD
LEGAL LOCATION: SE SE SE SE SEC. 15, T. 111 N., R. 56 W.

<table>
<thead>
<tr>
<th>Test Hole</th>
<th>Sand, Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 24</td>
<td>SAND, BROWN, FINE TO COARSE, CLAYEY WITH DEPTH, WELL-SORTED; OXIDIZED, MOIST, SATURATED AT 15 FEET</td>
</tr>
</tbody>
</table>

TEST HOLE NUMBER: 137
LOCATION: 111N-56W-16AAAA
LEGAL LOCATION: NE NE NE NE SEC. 16, T. 111 N., R. 56 W.

<table>
<thead>
<tr>
<th>Test Hole</th>
<th>Sand, Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 - 12</td>
<td>SAND, REDDISH-BROWN, MEDIUM, WELL-SORTED; MOIST, OXIDIZED</td>
</tr>
<tr>
<td>12 - 26</td>
<td>GRAVEL, REDDISH-BROWN, FINE, MODERATELY SORTED; MOIST, OXIDIZED</td>
</tr>
</tbody>
</table>

TEST HOLE NUMBER: 138
LOCATION: 111N-56W-16BBCC
LEGAL LOCATION: SW SW SW NW SEC. 16, T. 111 N., R. 56 W.

<table>
<thead>
<tr>
<th>Test Hole</th>
<th>Sand, Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 - 5</td>
<td>SAND, BROWN, VERY FINE, SILTY</td>
</tr>
<tr>
<td>5 - 7</td>
<td>SAND, BROWN, MEDIUM, VERY SILTY</td>
</tr>
<tr>
<td>7 - 11</td>
<td>SAND, GRAY, COARSF. SILTY</td>
</tr>
</tbody>
</table>

34
11 - 15 SAND, SLIGHTLY SILTY; SOME FINE GRAVEL
15 - 30 SAND, MEDIUM TO COARSE; CLEAN

TEST HOLE NUMBER: 139
LOCATION: 111N-56W-17DDBD
LEGAL LOCATION: SE SE SE SE SEC. 17, T. 111 N., R. 56 W.

0 - 11 GRAVEL, RED-BROWN, COARSE, SANDY, SILTY; OXIDIZED, WOIST, SOME COBBLES
14 - 20 GRAVEL, RED-BROWN, COARSE
23 - 60 SAND, COARSE, WELL-SORTED; UNOXIDIZED

TEST HOLE NUMBER: 140
LOCATION: 111N-56W-20AAAA
LEGAL LOCATION: NE NE NE NE SEC. 20, T. 111 N., R. 56 W.

0 - 6 GRAVEL, BROWN, COARSE, SANDY
6 - 9 SAND, BROWN, COARSE, GRAVELLY
9 - 36 SAND AND GRAVEL, BROWN

TEST HOLE NUMBER: 141
LOCATION: 111N-56W-22B BBC
LEGAL LOCATION: SW NW NW NW SEC. 22, T. 111 N., R. 56 W.

0 - 21 SAND AND GRAVEL, MEDIUM TO COARSE

TEST HOLE NUMBER: 142
LOCATION: 111N-56W-22BBBC 1
LEGAL LOCATION: SW NW NW NW SEC. 22, T. 111 N., R. 56 W.

4 - 6 SAND, BROWN, SILTY
6 - 11 SAND, DARK-BROWN, SILTY
11 - 16 SAND, DARK-BROWN; SOME FINE GRAVEL
16 - 21 SAND, GRAY, FINE TO MEDIUM; CLEAN
21 - 36 SAND, GRAY, MEDIUM TO COARSE; CLEAN

TEST HOLE NUMBER: 143
LOCATION: 111N-56W-22CBCB
LEGAL LOCATION: NW SW NW SW SEC. 22, T. 111 N., R. 56 W.

35
5 - 9  SAND, BROWN, MEDIUM TO COARSE, SILTY
9 - 11  SAND, GRAY, MEDIUM TO VERY COARSE, SILTY
11 - 35  SAND, GRAY, COARSE, SILTY; SOME GRAVEL

***

TEST HOLE NUMBER: 144
LOCATION: 111N-55W-27AAAA
LEGAL LOCATION: NE NE NE NE SEC. 27, T. 111 N., R. 56 W.

9 - 27  SAND, GRAY, MEDIUM; SATURATED, WITH CLAY

***

TEST HOLE NUMBER: 145
LOCATION: 111N-55W-27BBBB
LEGAL LOCATION: NE NW NW NW SEC. 27, T. 111 N., R. 56 W.

0 - 9  SAND, BROWN, COARSE, CLAYEY, MODERATELY SORTED; OXIDIZED, MOIST
9 - 17  SAND, REDDISH-BROWN, FINE, WELL-SORTED; OXIDIZED, MOIST, SATURATED AT 14 FEET
17 - 45  SAND, LIGHT-GRAY, COARSE, WELL-SORTED; PARTIALLY OXIDIZED, SATURATED

***

TEST HOLE NUMBER: 146
LOCATION: 111N-55W-28BBBB
LEGAL LOCATION: NW NW NW NW SEC. 28, T. 111 N., R. 56 W.

1 - 4  GRAVEL, DARK-BROWN, COARSE, CLAYEY, POORLY SORTED; OXIDIZED, MOIST
18 - 55  GRAVEL, GRAY, COARSE, CLAYEY, POORLY SORTED; UNOXIDIZED

***

TEST HOLE NUMBER: 147
LOCATION: 111N-55W-33AAAA
LEGAL LOCATION: NE NE NE NW SEC. 33, T. 111 N., R. 56 W.

17 - 20  GRAVEL, MEDIUM
20 - 24  SAND, RED-BROWN, MEDIUM, WELL-SORTED; OXIDIZED
24 - 25  GRAVEL, COARSE, CLAYEY; ABANDONED HOLE

***
TEST HOLE NUMBER: 148
LOCATION: 111N-56W-34AASA
LEGAL LOCATION: NE NW NE NE SEC. 34, T. 111 N., R. 56 W.

1 - 3 SAND, LIGHT-BROWN, FINE, CLAYEY, WELL-SORTED; OXIDIZED

** **

TEST HOLE NUMBER: 149
LOCATION: 111N-56W-34ACAD
LEGAL LOCATION: SE NE SW NE SEC. 34, T. 111 N., R. 56 W.

0 - 5 SAND, BROWN, VERY FINE; DRY

** **

TEST HOLE NUMBER: 150
LOCATION: 111N-56W-34CBBCC
LEGAL LOCATION: SW SW NW SW SEC. 34, T. 111 N., R. 56 W.

10 - 46 SAND, GRAY, FINE, MODERATELY SORTED; SATURATED, CLEAN, PROGRESSES TO COARSE SAND AT 28 FEET

** **

TEST HOLE NUMBER: 151
LOCATION: 111N-56W-34CDDDD
LEGAL LOCATION: SE SE SE SW SEC. 34, T. 111 N., R. 56 W.

4 - 17 SAND AND GRAVEL, FINE; MUCH CLAY, DRY
17 - 20 SAND, YELLOWISH-BROWN, FINE; SOME CLAY, VERY MOIST
20 - 64 SAND AND GRAVEL, YELLOWISH-BROWN, FINE; SOME CLAY, FAIRLY CLEAN, TURNS TO GRAY AT 50 FEET

** **

TEST HOLE NUMBER: 152
LOCATION: 111N-56W-34DBBBD
LEGAL LOCATION: SE NW NW SE SEC. 34, T. 111 N., R. 56 W.

4 - 16 SAND, MEDIUM; SAMPLED AT 12 FEET

** **
TEST HOLE NUMBER: 153
LOCATION: 111N-56W-34DBCC
LEGAL LOCATION: SW SW NW SE SEC. 34, T. 111 N., R. 56 W.

0 - 5 SAND, LIGHT-BROWN, VERY FINE; DRY
5 - 8 SAND, BROWN, VERY FINE; SOME CLAY, SLIGHTLY MOIST
8 - 24 SAND, YELLOWISH-BROWN, FINE; SOME CLAY, FAIRLY CLEAN, SLIGHTLY MOIST

* * *

TEST HOLE NUMBER: 154
LOCATION: 111N-56W-34DDDD
LEGAL LOCATION: SE SE SE SE SEC. 34, T. 111 N., R. 56 W.

9 - 20 SAND, BROWN, FINE, VERY CLAYEY; MOIST, SATURATED AT 16 FEET
20 - 25 SAND, GRAY, FINE, VERY CLAYEY; SATURATED

* * *

TEST HOLE NUMBER: 155
LOCATION: 111N-56W-36CCCB
LEGAL LOCATION: NW SW SW SW SEC. 36, T. 111 N., R. 56 W.

1 - 6 SAND, REDDISH-BROWN, COARSE, MODERATELY SORTED; OXIDIZED, MOIST, LITTLE CLAY

* * *

TEST HOLE NUMBER: 156
LOCATION: 111N-56W-36CCCC
LEGAL LOCATION: SW SW SW SW SEC. 36, T. 111 N., R. 56 W.

10 - 19 SAND, GRAY, FINE TO MEDIUM, UNSORTED, VERY CLAYEY; VISCOUS, SATURATED

* * *

TEST HOLE NUMBER: 157
LOCATION: 111N-57W-04DCCD
LEGAL LOCATION: SE SW SW SE SEC. 04, T. 111 N., R. 57 W.

4 - 5 GRAVEL, FINE, VERY CLAYEY, SANDY, POORLY SORTED; OXIDIZED
13 - 21 GRAVEL, BROWN, COARSE, CLAYEY, POORLY SORTED; SATURATED

38
23 - 28 SAND, GRAY, FINE TO MEDIUM, MODERATELY WELL-SORTED; SATURATED

* * *

TEST HOLE NUMBER: 158
LOCATION: 111N-57W-16AABB
LEGAL LOCATION: NW NW NE NE SEC. 16, T. 111 N., R. 57 W.

3 - 5 GRAVEL, MEDIUM TO COARSE, VERY CLAYEY; SOME SAND
5 - 7 SAND, BROWN, MEDIUM, VERY CLAYEY; MOIST, SOME GRAVEL
7 - 24 GRAVEL, COARSE, VERY CLAYEY, SANDY; OXIDIZED, MOIST, SATURATED AT 14 FEET
24 - 34 SAND, GRAY, FINE TO MEDIUM; SATURATED

* * *

TEST HOLE NUMBER: 159
LOCATION: 111N-57W-16ABBA
LEGAL LOCATION: NE NW NW NE SEC. 16, T. 111 N., R. 57 W.

3 - 5 SAND, BROWN, FINE; MOIST
9 - 13 SAND, BROWN, MEDIUM, CLAYEY; SATURATED

* * *

TEST HOLE NUMBER: 160
LOCATION: 111N-57W-16DDDA
LEGAL LOCATION: NE SE SE SE SEC. 16, T. 111 N., R. 57 W.

5 - 6 GRAVEL, MEDIUM TO COARSE, VERY CLAYEY, POORLY SORTED; OXIDIZED, MOIST

* * *

TEST HOLE NUMBER: 161
LOCATION: 111N-57W-25DDAA
LEGAL LOCATION: NE NE SE SE SEC. 25, T. 111 N., R. 57 W.

2 - 4 GRAVEL, BROWN, MEDIUM; OXIDIZED

* * *

TEST HOLE NUMBER: 162
LOCATION: 111N-57W-25DDDD
LEGAL LOCATION: SE SE SE SE SEC. 25, T. 111 N., R. 57 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

39
TEST HOLE NUMBER: 163
LOCATION: 111N-57W-27DDDD
LEGAL LOCATION: SE SE SE SE SEC. 27, T. 111 N., R. 57 W.

4 - 8 SAND, BROWN, FINE, CLAYEY, MODERATELY SORTED; OXIDIZED, SATURATED

TEST HOLE NUMBER: 164
LOCATION: 111N-57W-27DDDD 1
LEGAL LOCATION: SE SE SE SE SEC. 27, T. 111 N., R. 57 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

3 - 14 SAND AND GRAVEL, MEDIUM TO COARSE, CLAYEY

TEST HOLE NUMBER: 165
LOCATION: 111N-57W-31AAAB
LEGAL LOCATION: NW NE NE NE SEC. 31, T. 111 N., R. 57 W.

5 - 6 SAND, DARK-BROWN, MEDIUM, CLAYEY, SILTY; OXIDIZED, SATURATED

6 - 9 SAND AND GRAVEL, DARK-BROWN, COARSE SAND, MEDIUM GRAVEL, VERY CLAYEY; OXIDIZED

TEST HOLE NUMBER: 166
LOCATION: 111N-57W-32BBB
LEGAL LOCATION: NW NW NW SW SEC. 32, T. 111 N., R. 57 W.

16 - 20 SAND, GRAY, FINE, CLAYEY, POORLY SORTED; UNOXIDIZED, MOIST

TEST HOLE NUMBER: 167
LOCATION: 111N-58W-06BB
LEGAL LOCATION: NW NW NW NE SEC. 06, T. 111 N., R. 58 W.

19 - 24 GRAVEL, BROWN, MEDIUM, CLAYEY, SANDY, POORLY SORTED; OXIDIZED, MOIST
TEST HOLE NUMBER:  168
LOCATION:  111N-58W-06DDCD
LEGAL LOCATION:  SE SW SE SW SEC. 06, T. 111 N., R. 58 W.

1 -  11  GRAVEL, LIGHT-BROWN, COARSE, CLAYEY, POORLY SORTED; OXIDIZED, DRY, REDDISH-BROWN COLOR AFTER 3 FEET
11 -  22  SAND, REDDISH-BROWN, COARSE, CLAYEY, POORLY SORTED; OXIDIZED, MOIST

* * * *

TEST HOLE NUMBER:  169
LOCATION:  111N-58W-07DDCD
LEGAL LOCATION:  NW NW NW NE SEC. 07, T. 111 N., R. 58 W.

8 -  13  SAND, BROWN, MEDIUM, SILTY, POORLY SORTED; OXIDIZED
13 -  21  GRAVEL, BROWN, MEDIUM; OXIDIZED, MOIST, WITH CLAY

* * * *

TEST HOLE NUMBER:  170
LOCATION:  111N-58W-07DDCD
LEGAL LOCATION:  SE SW SW SEC. 07, T. 111 N., R. 58 W.

1 -  6  SAND, BROWN, COARSE, CLAYEY, POORLY SORTED; DRY, MOIST AT 5 FEET, WITH PEBBLES
8 -  17  GRAVEL, GRAY, MEDIUM, POORLY SORTED; UNOXIDIZED, SATURATED, CLEAN

* * * *

TEST HOLE NUMBER:  171
LOCATION:  111N-58W-23DDCD
LEGAL LOCATION:  SE SW SW SE SEC. 23, T. 111 N., R. 58 W.

1 -  3  SAND AND GRAVEL, LIGHT-BROWN, FINE SAND, POORLY SORTED; OXIDIZED, DRY

* * * *

TEST HOLE NUMBER:  172
LOCATION:  111N-58W-26DDCD
LEGAL LOCATION:  SE SW SE SW SEC. 26, T. 111 N., R. 58 W.

41
1 - 3 SAND AND GRAVEL, LIGHT-BROWN, FINE SAND, CLAYEY; POORLY SORTED, OXIDIZED, DRY

TEST HOLE NUMBER: 173
LOCATION: 111N-58W-30BABA
LEGAL LOCATION: NE NW NE NW SEC. 30, T. 111 N., R. 58 W.

25 - 30 SAND, GRAY, MEDIUM, MODERATELY SORTED; CLEAN

TEST HOLE NUMBER: 174
LOCATION: 111N-58W-30CCDD
LEGAL LOCATION: SE SE SW SW SEC. 30, T. 111 N., R. 58 W.

15 - 16 GRAVEL

TEST HOLE NUMBER: 175
LOCATION: 111N-58W-30CDDD
LEGAL LOCATION: SE SE SE SW SEC. 30, T. 111 N., R. 58 W.

1 - 5 SAND, RED-BROWN, COARSE, CLAYFY, POORLY SORTED; SOME FINE GRAVEL

5 - 11 SAND AND GRAVEL, RED-BROWN, COARSE SAND, MEDIUM GRAVEL, CLAYFY; OXIDIZED, SATURATED AT 7 FEET

TEST HOLE NUMBER: 176
LOCATION: 111N-58W-31BDAA
LEGAL LOCATION: NE NE SE NW SEC. 31, T. 111 N., R. 58 W.

5 - 11 GRAVEL, MEDIUM GRADING TO SAND

TEST HOLE NUMBER: 177
LOCATION: 111N-58W-31BDDD
LEGAL LOCATION: SE SE SE NW SEC. 31, T. 111 N., R. 58 W.

5 - 9 GRAVEL, MEDIUM GRADING TO FINE, SANDY
TEST HOLE NUMBER: 178
LOCATION: 112N-53W-02CAAD
LEGAL LOCATION: SE NE NE SW SEC. 02, T. 112 N., R. 53 W.

   2 - 3   GRAVEL, BROWN, MEDIUM; OXIDIZED, DRY

       * * * *

TEST HOLE NUMBER: 179
LOCATION: 112N-53W-12CCCC
LEGAL LOCATION: SW SW SW SW SEC. 12, T. 112 N., R. 53 W.

   10 - 14   SAND, MEDIUM

       * * * *

TEST HOLE NUMBER: 180
LOCATION: 112N-53W-12CDDD
LEGAL LOCATION: SE SE SW SW SEC. 12, T. 112 N., R. 53 W.

   6 - 20   GRAVEL, REDDISH-BROWN, MEDIUM, CLAYEY,
           SANDY, POORLY SORTED; SATURATED,
           OXIDIZED

   23 - 27   GRAVEL, COARSE, MODERATELY SORTED;
           SATURATED

       * * * *

TEST HOLE NUMBER: 181
LOCATION: 112N-53W-12CDDD
LEGAL LOCATION: SE SE SE SW SEC. 12, T. 112 N., R. 53 W.

   2 - 19   SAND, REDDISH-BROWN, FINE, WELL SORTED;
           DRY, OXIDIZED

       * * * *

TEST HOLE NUMBER: 182
LOCATION: 112N-53W-25BAAA
LEGAL LOCATION: NE NE NE NW SEC. 25, T. 112 N., R. 53 W.

   5 - 7   SAND, BROWN, FINE TO MEDIUM, CLAYEY;
           MOIST, OXIDIZED

       * * * *

TEST HOLE NUMBER: 183
LOCATION: 112N-53W-25CBAC

43
17 - 19  SAND, BROWN, MEDIUM, CLAYEY; SATURATED, OXIDIZED
19 - 23  GRAVEL, BROWN, COARSE, CLAYEY; SATURATED, OXIDIZED

TEST HOLE NUMBER: 184
LOCATION: 112N-53W-29DCDC
LEGAL LOCATION: SW SE SW SE SEC. 28, T. 112 N., R. 53 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

7 - 12  SAND, FINE TO COARSE

TEST HOLE NUMBER: 185
LOCATION: 112N-53W-34CDDC
LEGAL LOCATION: SW SE SW SW SEC. 34, T. 112 N., R. 53 W.

1 - 4  SAND, BROWN, FINE, GRAVELLY, POORLY SORTED; OXIDIZED
4 - 7  GRAVEL, REDDISH-BROWN, COARSE, CLAYEY, SANDY, POORLY SORTED; MOIST, OXIDIZED
7 - 11  SAND, BROWN, FINE, WELL-SORTED; MOIST, OXIDIZED
11 - 14  GRAVEL, BROWN, COARSE; MOIST, OXIDIZED, ABANDONED HOLE

TEST HOLE NUMBER: 186
LOCATION: 112N-53W-35BCCC
LEGAL LOCATION: SW SW NW SEC. 35, T. 112 N., R. 53 W.

2 - 10  GRAVEL, BROWN, COARSE, CLAYEY; DRY, OXIDIZED, ABANDONED HOLE

TEST HOLE NUMBER: 187
LOCATION: 112N-53W-35CDBA
LEGAL LOCATION: NE NW SE SW SEC. 35, T. 112 N., R. 53 W.

4 - 21  SAND, GRAYISH-BROWN, FINE, VERY SILTY; SATURATED, CLAY LAYER FROM 10 TO 11 FEET
TEST HOLE NUMBER: 188
LOCATION: 112N-54W-02B8C
LEGAL LOCATION: NW SW NW NW SEC. 02, T. 112 N., R. 54 W.

9 - 11 SAND, BROWN, FINE, VERY CLAYEY; SATURATED
11 - 19 GRAVEL, BROWN, MEDIUM, MODERATELY SORTED;
     SATURATED, OXIDIZED
19 - 35 GRAVEL, BROWN, COARSE, MODERATELY SORTED;
     CLEAN, SATURATED, OXIDIZED

TEST HOLE NUMBER: 189
LOCATION: 112N-54W-02C8C
LEGAL LOCATION: SW NW NW SW SEC. 02, T. 112 N., R. 54 W.

4 - 29 GRAVEL, BROWN, MEDIUM TO COARSE, CLAYEY,
     MODERATELY SORTED; SATURATED, OXIDIZED

TEST HOLE NUMBER: 190
LOCATION: 112N-54W-08D8C
LEGAL LOCATION: SW SW SW SE SEC. 08, T. 112 N., R. 54 W.

25 - 26 SAND, BROWN, FINE, CLAYEY; OXIDIZED,
     SATURATED

TEST HOLE NUMBER: 191
LOCATION: 112N-54W-09A8D
LEGAL LOCATION: SE NE SE NE SEC. 09, T. 112 N., R. 54 W.

5 - 10 GRAVEL, BROWN, MEDIUM, SILTY, VERY SANDY;
     OXIDIZED, DRY
10 - 17 GRAVEL, BROWN, COARSE, SILTY, VERY SANDY;
     OXIDIZED, DRY, ABANDONED HOLE

TEST HOLE NUMBER: 192
LOCATION: 112N-54W-09CADD
LEGAL LOCATION: SE SE NE SW SEC. 09, T. 112 N., R. 54 W.

45
4 - 6 GRAVEL, BROWN, FINE TO MEDIUM, SANDY; DRY, OXIDIZED
6 - 8 GRAVEL, BROWN, COARSE; DRY, OXIDIZED, ABANDONED HOLE

** **

TEST HOLE NUMBER: 193
LOCATION: 112N-54W-09DCCD
LEGAL LOCATION: SE SW SW SE SEC. 09, T. 112 N., R. 54 W.

6 - 7 SAND, DARK-BROWN, FINE, SILTY; OXIDIZED, DRY

** **

TEST HOLE NUMBER: 194
LOCATION: 112N-54W-10ABB
LEGAL LOCATION: NW NW NW NE SEC. 10, T. 112 N., R. 54 W.

0 - 9 GRAVEL, BROWN, FINE, SANDY; DRY, OXIDIZED
9 - 15 GRAVEL, BROWN, COARSE, SANDY; MOIST, OXIDIZED

** **

TEST HOLE NUMBER: 195
LOCATION: 112N-55W-01ABB
LEGAL LOCATION: NW NW NW NE SEC. 01, T. 112 N., R. 56 W.

3 - 15 GRAVEL, REDDISH-BROWN, COARSE, COBBLY, POORLY SORTED; WITH SAND AND CLAY

** **

TEST HOLE NUMBER: 196
LOCATION: 112N-55W-07CSCB
LEGAL LOCATION: NW SW NW SW SEC. 07, T. 112 N., R. 56 W.

4 - 16 SAND, BROWN; COARSE, CLAYEY, POORLY SORTED; OXIDIZED, SATURATED, COARSER WITH DEPTH

** **

TEST HOLE NUMBER: 197
LOCATION: 112N-56W-30AABD
LEGAL LOCATION: SE NW NR NE SEC. 30, T. 112 N., R. 56 W.
1 - 15 SAND, BROWN, COARSE, CLAYEY, MODERATELY SORTED; OXIDIZED, MOIST, SATURATED AT 10 FEET
15 - 65 SAND, BROWN, FINE, WELL-SORTED; PARTIALLY OXIDIZED, OXIDIZED AT 24 FEET, CLEAN, BECOMES COARSE WITH DEPTH

TEST HOLE NUMBER: 198
LOCATION: 112N-56W-30BDB
LEGAL LOCATION: NW SE NE NW SEC. 30, T. 112 N., R. 56 W.

0 - 12 SAND AND GRAVEL, RED-BROWN, COARSE, POORLY SORTED SAND, COARSE GRAVEL; OXIDIZED, COBBLES AT SURFACE
12 - 26 SAND AND GRAVEL, BROWN, COARSE SAND, FINE GRAVEL, CLAYEY; SATURATED AT 11 FEET

TEST HOLE NUMBER: 199
LOCATION: 112N-56W-31ABB
LEGAL LOCATION: NW NW NW NE SEC. 31, T. 112 N., R. 56 W.

0 - 11 SAND, MEDIUM TO COARSE
11 - 26 SAND, COARSE

TEST HOLE NUMBER: 200
LOCATION: 112N-56W-31ACDB
LEGAL LOCATION: NW SE SW NE SEC. 31, T. 112 N., R. 56 W.

2 - 12 GRAVEL, MEDIUM TO COARSE, SANDY
12 - 21 GRAVEL, BROWN, FINE, SILTY, SANDY
21 - 23 GRAVEL, COARSE
23 - 26 GRAVEL, BROWN, MEDIUM, CLAYEY

TEST HOLE NUMBER: 201
LOCATION: 112N-56W-31BBAB
LEGAL LOCATION: NW NE NW NW SEC. 31, T. 112 N., R. 56 W.

11 - 45 SAND, MEDIUM TO COARSE, GRAVELLY, SLIGHTLY CLAYEY
TEST HOLE NUMBER: 202
LOCATION: 112N-56W-31BBBB
LEGAL LOCATION: NW NW NW NW SEC. 31, T. 112 N., R. 56 W.

2 - 17 SAND AND GRAVEL, REDDISH-BROWN, COARSE SAND TO FINE GRAVEL
17 - 51 GRAVEL, BROWN, MEDIUM

***

TEST HOLE NUMBER: 203
LOCATION: 112N-56W-31BDCC
LEGAL LOCATION: SW SW SE NW SEC. 31, T. 112 N., R. 56 W.

6 - 11 GRAVEL AND SAND, MEDIUM TO COARSE GRAVEL, MEDIUM TO COARSE SAND
11 - 36 SAND AND GRAVEL, COARSE

***

TEST HOLE NUMBER: 204
LOCATION: 112N-56W-31CBBC
LEGAL LOCATION: SW NW NW SW SEC. 31, T. 112 N., R. 56 W.

5 - 9 SAND, BROWN, FINE TO MEDIUM
9 - 12 GRAVEL, BROWN, COARSE

***

TEST HOLE NUMBER: 205
LOCATION: 112N-56W-31CBBB
LEGAL LOCATION: NW NW SE SW SEC. 31, T. 112 N., R. 56 W.

13 - 14 GRAVEL, COARSE
14 - 34 SAND, MEDIUM TO COARSE

***

TEST HOLE NUMBER: 206
LOCATION: 112N-56W-31CDDC
LEGAL LOCATION: SW SE SE SW SEC. 31, T. 112 N., R. 56 W.

0 - 1 SAND, LIGHT-BROWN, SILTY; OXIDIZED, DRY
1 - 25 SAND AND GRAVEL, RED-BROWN, COARSE SAND, MEDIUM GRAVEL; OXIDIZED

***
TEST HOLE NUMBER: 207
LOCATION: 112N-56W-310BCC
LEGAL LOCATION: SW SW NW SE SEC. 31, T. 112 N., R. 56 W.

1 -  3  SAND, LIGHT-BROWN, GRAVELLY
3 -  5  SAND AND GRAVEL, BROWN, SILTY
5 - 18  SAND, BROWN, COARSE, GRAVELLY
18 - 23  SAND, DARK-BROWN, COARSE, GRAVELLY
23 - 27  SAND, BROWN, COARSE, SILTY

TEST HOLE NUMBER: 208
LOCATION: 112N-56W-310DDD
LEGAL LOCATION: SE SE SE SE SEC. 31, T. 112 N., R. 56 W.

1 -  15  GRAVEL, LIGHT-BROWN, COARSE, CLAYEY, SANDY, MODERATELY SORTED; OXIDIZED, DRY, WITH COBBLES
15 - 41  SAND, REDDISH-BROWN, COARSE, CLAYEY, MODERATELY SORTED; OXIDIZED, MOIST, SATURATED AT 21 FEET

TEST HOLE NUMBER: 209
LOCATION: 112N-56W-310DDD 1
LEGAL LOCATION: SE SE SE SE SEC. 31, T. 112 N., R. 56 W.

3 -  5  GRAVEL, GRAY, SILTY
5 - 24  SAND AND GRAVEL, BROWN
24 - 34  SAND, BROWN, COARSE, GRAVELLY, SILTY

TEST HOLE NUMBER: 210
LOCATION: 112N-56W-32BBB
LEGAL LOCATION: NW NW NW NW SEC. 32, T. 112 N., R. 56 W.

6 -  18  SAND AND GRAVEL, RED-BROWN, COARSE SAND, MEDIUM GRAVEL; OXIDIZED

TEST HOLE NUMBER: 211
LOCATION: 112N-56W-32BBB 1
LEGAL LOCATION: NW NW NW NW SEC. 32, T. 112 N., R. 56 W.

49
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<thead>
<tr>
<th>Depth</th>
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<tbody>
<tr>
<td>7 - 11</td>
<td>SAND AND GRAVEL, BROWN, SILTY</td>
</tr>
<tr>
<td>11 - 18</td>
<td>SAND, BROWN, SILTY, CLAYEY</td>
</tr>
<tr>
<td>18 - 22</td>
<td>SAND, BROWN, SILTY; SOME FINE GRAVEL</td>
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<tr>
<td>22 - 25</td>
<td>SAND, GRAY, SILTY; SOME FINE GRAVEL</td>
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** TEST HOLE NUMBER: 212 **
LOCATION: 112N-56W-32BDBB
LEGAL LOCATION: NW NW SE NW SEC. 32, T. 112 N., R. 56 W.

<table>
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<tr>
<th>Depth</th>
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<tr>
<td>1 - 4</td>
<td>SAND, BROWN, MEDIUM, PEBBLY</td>
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<tr>
<td>4 - 12</td>
<td>SAND, BROWN, MEDIUM TO COARSE, PEBBLY</td>
</tr>
<tr>
<td>12 - 18</td>
<td>SAND, BROWN, MEDIUM TO COARSE, PEBBLY</td>
</tr>
<tr>
<td>24 - 32</td>
<td>SAND, GRAY, VERY FINE, VERY SILTY</td>
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** TEST HOLE NUMBER: 213 **
LOCATION: 112N-56W-32BDDBA
LEGAL LOCATION: NE SE SE NW SEC. 32, T. 112 N., R. 56 W.

<table>
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<tr>
<th>Depth</th>
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<tbody>
<tr>
<td>6 - 9</td>
<td>SAND, BROWN, COARSE, SILTY</td>
</tr>
<tr>
<td>9 - 12</td>
<td>SAND, GRAY, COARSE, SILTY</td>
</tr>
<tr>
<td>12 - 13</td>
<td>GRAVEL, SANDY, SILTY</td>
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</tbody>
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** TEST HOLE NUMBER: 214 **
LOCATION: 112N-56W-32CBDBB
LEGAL LOCATION: NW NW NW SW SEC. 32, T. 112 N., R. 56 W.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
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<tbody>
<tr>
<td>1 - 20</td>
<td>SAND, COARSE; SOME FINE GRAVEL</td>
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</tbody>
</table>

** ***

** TEST HOLE NUMBER: 215 **
LOCATION: 112N-56W-32CDBDD
LEGAL LOCATION: SE SE SE SE SEC. 32, T. 112 N., R. 56 W.

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
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<tbody>
<tr>
<td>4 - 7</td>
<td>GRAVEL</td>
</tr>
<tr>
<td>7 - 9</td>
<td>SAND, MEDIUM</td>
</tr>
<tr>
<td>9 - 12</td>
<td>GRAVEL</td>
</tr>
<tr>
<td>12 - 45</td>
<td>SAND, FINE TO MEDIUM, SAMPLED AT 18 FEET</td>
</tr>
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</table>

** ***

** TEST HOLE NUMBER: 216 **

50
LOCATION: 112N-57W-01CD
LEGAL LOCATION: SE SE SE SW Sec. 01, T. 112 N., R. 57 W.

1 - 5 GRAVEL, LIGHT-BROWN, CLAYEY, SANDY, POORLY SORTED; OXIDIZED, DRY, WITH COBBLES
5 - 13 SAND, REDDISH-BROWN, COARSE, CLAYEY, MODERATELY SORTED; OXIDIZED, DRY, WITH SMALL PEBBLES
15 - 32 GRAVEL, BROWN, MEDIUM TO COARSE, CLAYEY, POORLY SORTED; SATURATED

** **

TEST HOLE NUMBER: 217
LOCATION: 112N-57W-02AABA
LEGAL LOCATION: NE NW NE NE Sec. 02, T. 112 N., R. 57 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 5 SAND, MEDIUM TO COARSE, VERY PEBBLY
5 - 30 SAND, MEDIUM TO COARSE, SILTY, VERY PEBBLY; SATURATED

** **

TEST HOLE NUMBER: 218
LOCATION: 112N-57W-05BBBA
LEGAL LOCATION: NE NW NW NW Sec. 05, T. 112 N., R. 57 W.

3 - 5 SAND, RED-BROWN, MEDIUM; WELL-SORTED; OXIDIZED, MOIST, SATURATED AT 7 FEET

** **

TEST HOLE NUMBER: 219
LOCATION: 112N-57W-08BA
LEGAL LOCATION: NE NE NE NW Sec. 08, T. 112 N., R. 57 W.

1 - 12 GRAVEL, LIGHT-BROWN, COARSE, CLAYEY, POORLY SORTED; OXIDIZED, DRY, WITH COBBLES
12 - 28 GRAVEL, BROWN, COARSE, CLAYEY, POORLY SORTED; PARTIALLY OXIDIZED, SATURATED

** **

TEST HOLE NUMBER: 220
LOCATION: 112N-57W-11DDDD
LEGAL LOCATION: SE SE SE SE Sec. 11, T. 112 N., R. 57 W.

51
16 - 18 SAND; WITH COBBLES

* * * *

TEST HOLE NUMBER: 221
LOCATION: 112N-57W-13BDCC 1
LEGAL LOCATION: SW SW SE NW SEC. 13, T. 112 N., R. 57 W.

0 - 30 SAND AND GRAVEL, REDDISH-BROWN, COARSE SAND TO FINE GRAVEL; OXIDIZED

* * * *

TEST HOLE NUMBER: 222
LOCATION: 112N-57W-13BDCC 2
LEGAL LOCATION: SW SW SE NW SEC. 13, T. 112 N., R. 57 W.

0 - 30 SAND AND GRAVEL, REDDISH-BROWN, COARSE SAND TO FINE GRAVEL; OXIDIZED

* * * *

TEST HOLE NUMBER: 223
LOCATION: 112N-57W-17ABAB
LEGAL LOCATION: NW NE NW NE SEC. 17, T. 112 N., R. 57 W.

13 - 26 GRAVEL, DARK-BROWN, COARSE, CLAYEY, POORLY SORTED; OXIDIZED, SATURATED

* * * *

TEST HOLE NUMBER: 224
LOCATION: 112N-57W-17DDCD
LEGAL LOCATION: SE SW SE SE SEC. 17, T. 112 N., R. 57 W.

1 - 8 SAND, FINE, WELL-SORTED; DRY
12 - 20 SAND, GRAY, FINE, VERY SILTY; UNOXIDIZED, SATURATED AT 13 FEET

* * * *

TEST HOLE NUMBER: 225
LOCATION: 112N-57W-25AADA
LEGAL LOCATION: NE SE NE NE SEC. 25, T. 112 N., R. 57 W.

0 - 5 GRAVEL, COARSE, SANDY
5 - 10 SAND, LIGHT-BROWN, MEDIUM, PEBBLY
10 - 15 GRAVEL, SILTY

52
15 - 20  SAND, COARSE, SILTY; SOME FINE GRAVEL
20 - 26  SAND, MEDIUM TO COARSE, SILTY

***

TEST HOLE NUMBER: 226
LOCATION: 112N-57W-25DAAA
LEGAL LOCATION: NE NE NE SE SEC. 25, T. 112 N., R. 57 W.

5 - 8  SAND, MEDIUM, SILTY
8 - 16  SAND, BROWN, MEDIUM TO COARSE, SILTY
16 - 32  SAND, BROWN, COARSE, VERY SILTY

***

TEST HOLE NUMBER: 227
LOCATION: 112N-57W-25DCCC
LEGAL LOCATION: SW SW SW SE SEC. 25, T. 112 N., R. 57 W.

4 - 11  SAND, MEDIUM TO COARSE; SOME COARSE GRAVEL

***

TEST HOLE NUMBER: 228
LOCATION: 112N-57W-28BBCB
LEGAL LOCATION: NW SW NW NW SEC. 28, T. 112 N., R. 57 W.

0 - 12  GRAVEL, BROWN, MODERATELY COARSE, SANDY, POORLY SORTED; DRY, MOIST AT 3 FEET, VERY COARSE 7 TO 12 FEET

***

TEST HOLE NUMBER: 229
LOCATION: 112N-57W-29DAAA
LEGAL LOCATION: NE NE NE SE SEC. 29, T. 112 N., R. 57 W.

1 - 8  GRAVEL, BROWN, MEDIUM TO COARSE, VERY SANDY; MOIST
8 - 11  SAND, BROWN, COARSE; MOIST, SOME GRAVEL

***

TEST HOLE NUMBER: 230
LOCATION: 112N-57W-33CDDD
LEGAL LOCATION: SE SE SE SW SEC. 33, T. 112 N., R. 57 W.
3 -  12 GRAVEL, BROWN, COARSE, SANDY, CLAYEY;
       MOIST, SATURATED AT 11 FEET
14 -  21 GRAVEL, BROWN, COARSE, SANDY, CLAYEY;
       SATURATED
       * * *

TEST HOLE NUMBER: 231
LOCATION: 112N-57W-36AAAA
LEGAL LOCATION: NE NE NE NE SEC. 36, T. 112 N., R. 57 W.

3 -  18 SAND, BROWN, GRAVELLY
       * * *

TEST HOLE NUMBER: 232
LOCATION: 112N-57W-36ADD
LEGAL LOCATION: SE SE NE NE SEC. 36, T. 112 N., R. 57 W.

1 -  9 GRAVEL, VERY COARSE
       * * *

TEST HOLE NUMBER: 233
LOCATION: 112N-58W-01CCCD
LEGAL LOCATION: SE SW SW SEC. 01, T. 112 N., R. 58 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 -  3 SAND; TAN, FINE, CLAYEY, POORLY SORTED;
       OXIDIZED, DRY
       * * *

TEST HOLE NUMBER: 234
LOCATION: 112N-58W-02AAAB
LEGAL LOCATION: NW NE NE NE SEC. 02, T. 112 N., R. 58 W.

5 -  7 SAND, BROWN, COARSE, SLIGHTLY CLAYEY,
       MODERATELY SORTED; SATURATED AT 5 FEET
7 -  11 SAND AND GRAVEL, BROWN, COARSE SAND, FINE
       GRAVEL, VERY CLAYEY; OXIDIZED
       * * *

TEST HOLE NUMBER: 235
LOCATION: 112N-58W-05CDDC
LEGAL LOCATION: SE SW SE SW SEC. 05, T. 112 N., R. 58 W.

1 -  7 SAND AND GRAVEL, LIGHT-BROWN, FINE SAND,
CLAYEY, POORLY SORTED; OXIDIZED, DRY

* * *

TEST HOLE NUMBER: 236
LOCATION: 112N-58W-08CCD
LEGAL LOCATION: SE SE SW SW SEC. 08, T. 112 N., R. 58 W.

1 - 6 SAND AND GRAVEL, LIGHT-BROWN, FINE SAND, COARSE GRAVEL, FLEMBL; OXIDIZED, DRY; COLOR CHANGES TO REDDISH-BROWN WITH DEPTH

* * *

TEST HOLE NUMBER: 237
LOCATION: 112N-58W-12CCD
LEGAL LOCATION: SW SE SW SE SEC. 12, T. 112 N., R. 58 W.

6 - 7 SAND, COARSE, VERY CLAYEY, POORLY SORTED; OXIDIZED, MOIST

* * *

TEST HOLE NUMBER: 238
LOCATION: 112N-58W-13CCC
LEGAL LOCATION: SW SW SW SE SEC. 13, T. 112 N., R. 58 W.

1 - 5 SAND, BROWN, FINE, CLAYEY, MODERATELY SORTED; OXIDIZED, MOIST

* * *

TEST HOLE NUMBER: 239
LOCATION: 112N-58W-17CCC
LEGAL LOCATION: SW SW SE SW SEC. 17, T. 112 N., R. 58 W.

0 - 3 GRAVEL, MEDIUM TO COARSE, SANDY, SUB-ANGULAR; DRY

* * *

TEST HOLE NUMBER: 240
LOCATION: 112N-58W-18DDDD
LEGAL LOCATION: SE SE SE SE SEC. 18, T. 112 N., R. 58 W.

0 - 4 GRAVEL, REDDISH-BROWN, MEDIUM TO COARSE, SILTY, SANDY, POORLY SORTED,
SUBROUNDED; OXIDIZED, DRY

TEST HOLE NUMBER: 281
LOCATION: 112N-58W-20BCCC
LEGAL LOCATION: SW SW SW NW SEC. 20, T. 112 N., R. 58 W.

7 - 9 GRAVEL, BROWN, FINE TO MEDIUM, POORLY SORTED; SATURATED, SOME COARSE SAND

13 - 21 GRAVEL, BROWN, FINE; SATURATED, SOME COARSE SAND

TEST HOLE NUMBER: 242
LOCATION: 112N-58W-30AABBA
LEGAL LOCATION: NE NW NW NE SEC. 30, T. 112 N., R. 58 W.

15 - 21 GRAVEL, FINE TO MEDIUM, SILTY; SATURATED, SOME COARSE SAND

TEST HOLE NUMBER: 243
LOCATION: 112N-58W-300DDD
LEGAL LOCATION: SE SE SE SE SEC. 30, T. 112 N., R. 58 W.

15 - 21 GRAVEL, BROWN, FINE, VERY CLAYEY, POORLY SORTED; SATURATED

TEST HOLE NUMBER: 244
LOCATION: 112N-58W-36ADD
LEGAL LOCATION: SE SE SE NE SEC. 36, T. 112 N., R. 58 W.

10 - 20 GRAVEL, TAM, COARSE, VERY CLAYEY, POORLY SORTED; OXIDIZED, SATURATED

56
### TABLE 2. List of sand and gravel pits in Kingsbury County, South Dakota, on file at Department of Transportation, Division of Highways, in Pierre, South Dakota.

**EXPLANATION:**
- 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

<table>
<thead>
<tr>
<th>Pit</th>
<th>Landowner</th>
<th>Location</th>
<th>Aggregate type</th>
<th>Deposit thickness (ft)</th>
<th>Overburden thickness (ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gene Gruenhagen</td>
<td>NW 1/4 sec. 7, T. 109 N., R. 55 W.</td>
<td>Gravel</td>
<td>6.08</td>
<td>1.33</td>
</tr>
<tr>
<td>2</td>
<td>Gene Gruenhagen</td>
<td>W 1/2 NW 1/4 sec. 7, T. 109 N., R. 55 W.</td>
<td>Gravel</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>3</td>
<td>Roy Bitner</td>
<td>E 1/2 NW 1/4 sec. 18, T. 109 N., R. 55 W.</td>
<td>Gravel</td>
<td>5.4</td>
<td>2.6</td>
</tr>
<tr>
<td>4</td>
<td>John O'Hara</td>
<td>NE 1/4 sec. 12, T. 109 N., R. 56 W.</td>
<td>Gravel</td>
<td>8.25</td>
<td>1.68</td>
</tr>
<tr>
<td>5</td>
<td>Green and Green,</td>
<td>NE 1/4 sec. 20, T. 109 N., R. 57 W.</td>
<td>Gravel</td>
<td>----</td>
<td>----</td>
</tr>
<tr>
<td>6</td>
<td>James Driscoll</td>
<td>SW 1/4 NE 1/4 sec. 29, T. 109 N., R. 57 W.</td>
<td>Gravel</td>
<td>5.6</td>
<td>2.3</td>
</tr>
</tbody>
</table>

57
Pit 7
a. Landowner: Unknown
b. Location: SW 1/4 sec. 32, T. 109 N., R. 57 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 8
a. Landowner: Mrs. C. E. Bartlett
b. Location: SE 1/4 sec. 32, T. 109 N., R. 57 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 9
a. Landowner: E. J. Vanderaniok - Carthage
b. Location: NW 1/4 sec. 33, T. 109 N., R. 57 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 10
a. Landowner: Dept. of Game, Fish & Parks - Pierre
b. Location: SW 1/4 sec. 33, T. 109 N., R. 57 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 11
a. Landowner: Miner County
b. Location: SW 1/4 sec. 34, T. 109 N., R. 57 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 12
a. Landowner: Ethol B. Warren - DeSmet
b. Location: SW 1/4 sec. 3, T. 110 N., R. 56 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): 9.64
e. Overburden thickness (ft): 1.37

Pit 13
a. Landowner: Joe M. Braun - DeSmet
b. Location: SE 1/4 sec. 3, T. 110 N., R. 56 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): 11.9
e. Overburden thickness (ft): 1.8
Pit 14
a. Landowner: Richard Halverson - DeSmet  
b. Location: NE 1/4 sec. 10, T. 110 N., R. 56 W.  
c. Aggregate type: Gravel  
d. Deposit thickness (ft): 7.1  
e. Overburden thickness (ft): 1.4

Pit 15
a. Landowner: Roy Johnson - DeSmet  
b. Location: SE 1/4 sec. 22, T. 110 N., R. 56 W.  
c. Aggregate type: Gravel  
d. Deposit thickness (ft): 11.2  
e. Overburden thickness (ft): 1.5

Pit 16
a. Landowner: Ralph Schriner - DeSmet  
b. Location: SW 1/4 sec. 24, T. 110 N., R. 56 W.  
c. Aggregate type: Gravel  
d. Deposit thickness (ft): 10.4  
e. Overburden thickness (ft): 2.0

Pit 17
a. Landowner: Dale C. Johnson and Ralph Schriner - DeSmet  
b. Location: SW 1/4 sec. 28, T. 110 N., R. 56 W.  
c. Aggregate type: Gravel  
d. Deposit thickness (ft): 8.2  
e. Overburden thickness (ft): 1.9

Pit 18
a. Landowner: Elmer Forsburg - DeSmet  
b. Location: SE 1/4 sec. 26, T. 110 N., R. 56 W.  
c. Aggregate type: Gravel  
d. Deposit thickness (ft): 7.13  
e. Overburden thickness (ft): 1.13

Pit 19
a. Landowner: O. C. Johnson - DeSmet  
b. Location: NE 1/4 sec. 35, T. 110 N., R. 56 W.  
c. Aggregate type: Gravel  
d. Deposit thickness (ft): --  
e. Overburden thickness (ft): --

Pit 20
a. Landowner: Unknown  
b. Location: NW 1/4 sec. 5, T. 110 N., R. 57 W.  
c. Aggregate type: Gravel  
d. Deposit thickness (ft): --  
e. Overburden thickness (ft): --
Pit 21
a. Landowner: LaVerne Converse - Badger
b. Location: NW 1/4 sec. 3, T. 111 N., R. 53 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): 11.7
e. Overburden thickness (ft): 4.3

Pit 22
a. Landowner: Selmer Stenson - Badger
b. Location: E 1/2 SW 1/4 sec. 9, T. 111 N., R. 53 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): 6.29
e. Overburden thickness (ft): 2.66

Pit 23
a. Landowner: Kingsbury County
b. Location: NW 1/4 sec. 10, T. 111 N., R. 53 W.
c. Aggregate type: Sand
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 24
a. Landowner: Unknown
b. Location: NW 1/4 sec. 3, T. 111 N., R. 56 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 25
a. Landowner: Unknown
b. Location: NE 1/4 SE 1/4 sec. 4, T. 111 N., R. 56 W.
c. Aggregate type: Gravel and sand
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 26
a. Landowner: Elmer Stubbe - DeSmet
b. Location: NW 1/4 sec. 5, T. 111 N., R. 56 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): 12.0
e. Overburden thickness (ft): 1.11

Pit 27
a. Landowner: Charles Cummings - DeSmet
b. Location: NE 1/4 sec. 21, T. 111 N., R. 56 W.
c. Aggregate type: Sand
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----
Pit 28
a. Landowner: Robert Cummings - DeSmet
b. Location: NW 1/4 sec. 21, T. 111 N., R. 56 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): 12.6
e. Overburden thickness (ft): 1.3

Pit 29
a. Landowner: Kingsbury County
b. Location: NE 1/4 sec. 28, T. 111 N., R. 56 W.
c. Aggregate type: Sand and gravel
d. Deposit thickness (ft): 8.1
e. Overburden thickness (ft): 2.8

Pit 30
a. Landowner: Kingsbury County
b. Location: NE 1/4 sec. 28, T. 111 N., R. 56 W.
c. Aggregate type: Sand and gravel
d. Deposit thickness (ft): 7.0
e. Overburden thickness (ft): 2.0

Pit 31
a. Landowner: Andy Close - DeSmet
b. Location: NW 1/4 sec. 28, T. 111 N., R. 56 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): 8.8
e. Overburden thickness (ft): 2.0

Pit 32
a. Landowner: Jarvis Wallum - DeSmet
b. Location: NW 1/4 sec. 28, T. 111 N., R. 56 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): 14.0
e. Overburden thickness (ft): 2.0

Pit 33
a. Landowner: Unknown
b. Location: NE 1/4 SE 1/4 sec. 28, T. 111 N., R. 56 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 34
a. Landowner: Cyril (Vaughan) Johnson - DeSmet
b. Location: NW 1/4 sec. 30, T. 111 N., R. 56 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----
Pit 35
a. Landowner: Lloyd Halverson - DeSmet
b. Location: SW 1/4 NE 1/4 sec. 35, T. 111 N., R. 56 W.
c. Aggregate type: Clay
d. Deposit thickness (ft): 5.0
e. Overburden thickness (ft): 0.8

Pit 36
a. Landowner: LaVerve Converse - Badger
b. Location: SW 1/4 sec. 34, T. 112 N., R. 53 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 37
a. Landowner: Donald Smith - Badger
b. Location: E 1/2 NE 1/4 sec. 9, T. 112 N., R. 54 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): 5.9
e. Overburden thickness (ft): 3.2

Pit 38
a. Landowner: Donald Smith - Badger
b. Location: SW 1/4 NE 1/4 sec. 9, T. 112 N., R. 54 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 39
a. Landowner: Mrs. Minnie Mohres - Erwin
b. Location: NW 1/4 NE 1/4 sec. 10, T. 112 N., R. 54 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): 10.15
e. Overburden thickness (ft): 2.3

Pit 40
a. Landowner: Mrs. Mary Stolpe - Erwin
b. Location: NW 1/4 sec. 10, T. 112 N., R. 54 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): 10.0
e. Overburden thickness (ft): 4.0

Pit 41
a. Landowner: Cyril Vaughan - Brookings
b. Location: NW 1/4 sec. 30, T. 112 N., R. 56 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

62
Pit 42
a. Landowner: Oliver Seefeldt - DeSmet
b. Location: SW 1/4 sec. 12, T. 112 N., R. 57 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): 7.9
e. Overburden thickness (ft): 1.7

Pit 43
a. Landowner: Otto Poppen
b. Location: NW 1/4 sec. 13, T. 112 N., R. 57 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 44
a. Landowner: Harold Steemple - Lake Benton, Minnesota
b. Location: W 1/2 NE 1/4 sec. 17, T. 112 N., R. 57 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 45
a. Landowner: Sherman Williams - DeSmet
b. Location: W 1/2 NW 1/4 sec. 35, T. 112 N., R. 57 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----

Pit 46
a. Landowner: A. M. Wilbur - Brookings
b. Location: SE 1/4 SE 1/4 sec. 18, T. 112 N., R. 58 W.
c. Aggregate type: Gravel
d. Deposit thickness (ft): ----
e. Overburden thickness (ft): ----
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 I designate areas described in the text.

Test hole containing sand or gravel within 25 feet of the land surface with 0-5 feet of overburden.

Test hole containing sand or gravel within 25 feet of the land surface with greater than 5 feet of overburden.

Test hole containing no sand or gravel within 25 feet of the land surface.

Sand and gravel pits—those with a number are listed in Table 2.

Map showing test holes, sand and gravel pits, and sand and gravel deposits in Kingsbury County.