

**STATE OF SOUTH DAKOTA
George S. Mickelson, Governor**

**DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES
Robert E. Roberts, Secretary**

**DIVISION OF GEOLOGICAL SURVEY
Merlin J. Tipton, State Geologist**

Information Pamphlet IP-44

**SAND AND GRAVEL RESOURCES IN
CODINGTON COUNTY, SOUTH DAKOTA**

by

Layne D. Schulz

**Prepared in cooperation with the
United States Geological Survey,
South Dakota Department of Transportation,
East Dakota Water Development District,
and Codington County**

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ILLUSTRATION

Plate

(Plate is in pocket)

1. Test holes, sand and gravel pits, numbered land tracts and sand and gravel deposits in Codington County, SD

INTRODUCTION

Codington County has a vast resource of sand and gravel and this pamphlet is designed to aid in the exploration for sources of these deposits. Specific areas have been delineated by the use of test drilling, sand and gravel pit locations, soil-survey information, topographic maps, aerial-photo interpretation, and field observations.

The quality of the material was not analyzed. This would require prior knowledge of the material specifications for each intended use, and more extensive sampling. This report is written to accompany the illustration at the end of this report which presents the main results of this survey.

Other reports in this series which discuss the geology and hydrology of Codington County include:

- a. *Major aquifers in Codington and Grant Counties, South Dakota*: South Dakota Geological Survey Information Pamphlet, Amundson, F. D., and Hansen, D. S. (in preparation)
- b. *Water resources of Codington and Grant Counties, South Dakota*: U.S. Geological Survey Water Resources Investigations Report, Hansen, D. S., and Amundson, F. D. (in preparation)
- c. *Geology of Codington and Grant Counties, South Dakota*: South Dakota Geological Survey Bulletin, Gilbertson, J. P. (in preparation)

Report (a.) describes the yield, quality and location of major aquifers (water-bearing deposits) in a short, nontechnical pamphlet. Report (b.) is a more technical and more exhaustive investigation of the water resources of the counties. Report (c.) is a detailed description of the overall geology of Codington and Grant Counties.

GEOLOGIC OVERVIEW

Most of the sand and gravel deposits found in Codington County were deposited either directly or indirectly by glacial ice that covered the area thousands of years ago. Other deposits have resulted from stream deposition since the retreat of the glaciers. A short description of geologic terms used to describe glacial deposits in this text follows.

Till

The glaciers were large masses of ice that carried with them debris that was picked up earlier in their routes. Some of this debris, a mixture of clay, silt, sand, gravel and boulders was deposited directly from the ice and not subjected to the action of running water. Till, the term used to describe this mixture, is locally called "blue clay" or "boulder clay." The majority of Codington County is covered by till which 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 within till deposits.

End Moraine

An actively flowing glacier brings debris to its terminus or lower margin. If the terminus remains stationary for a few years, a distinct end moraine, or ridge of till, is piled up along the front edge of the ice. These ridges are generally large and irregular in shape. A terminal moraine is an end moraine marking the farthest advance of a glacier. When the debris brought to the terminus is composed mainly of sand and gravel, these end moraines or terminal moraines may be a source for coarse aggregate.

Glacial Outwash

Glacial outwash is the term used to describe any deposit of glacial debris that has been washed and sorted by flowing glacial meltwater. The material type and grain size of these deposits depend on the velocity of the water that sorted them. Deposits left by slow-flowing streams are made up primarily of silts and clays. Very fast flowing streams may have left stream beds composed entirely of boulders. Most glacial outwash is made up of an assortment of sand and gravel, with minor amounts of silts, clays, and boulders. Two important types of glacial outwash found in Codrington County are collapsed outwash and valley-train deposits.

Collapsed outwash is glacial debris that has been washed and sorted by meltwater and was originally deposited on a layer of ice. As the underlying ice melts out from under these deposits they collapse, or are let down into their positions.

Valley-train deposits are long, narrow bodies of outwash, deposited by meltwater streams far beyond the terminal moraine or the margin of an active glacier. These deposits are confined within the walls of a valley below the limit of the glacier.

Alluvium

Alluvium consists of a mixture of clay, silt, sand, and gravel that has been deposited by present-day streams since the retreat of the glaciers. The grain size of the material deposited is dependent on the same factors that govern the grain size in glacial-outwash deposits and may vary from place to place within the stream valley. Where these deposits consist primarily of sand and gravel, they may be mined as a coarse-aggregate source.

Terrace Deposits

Terrace deposits are flat-topped alluvial or outwash deposits that are remnants of former flood plains. The streams which originally deposited the material have since cut their channels deeper and developed new flood plains at lower levels. Much of the sand and gravel in Codrington County occurs as this type of deposit.

EXPLANATION OF APPENDICES

Appendices A and B are a compilation of test holes which encountered sand or gravel in the upper 25 feet. These appendices list: (a) location of the test hole, (b) depth, and (c) description of sand and gravel intervals. Locations in appendix B are followed by an "R" which indicates they lie within the boundary of the Lake Traverse Indian Reservation. The complete set of drill logs is on file at the office of the South Dakota Geological Survey in Vermillion. The South Dakota Geological Survey, U.S. Geological Survey, South Dakota Division of Water Rights, U.S. Bureau of Reclamation, and private drillers contributed to this list.

Appendix C is a compilation of land tracts that have been tested for sand and gravel by the Department of Transportation or have been bonded with the intent to mine sand and gravel at the Office of Minerals and Mining, Department of Environment and Natural Resources. Both of these departments are located in Pierre, South Dakota. The owner, material type, and where possible, thickness of overburden and aggregate being mined, have been included. The actual thickness of a deposit may be greater than that mined, because of the depth to the water table, changing material characteristics, or the limitations of mining methods.

EXPLANATION OF THE ILLUSTRATION

Plate 1 shows the location of test holes and sand and gravel pits plus numbered land tracts, as listed in appendix C. It also shows towns, major highways, major lakes, rivers, and creeks.

Test holes are represented by three different symbols. A closed circle (●) represents a location in which sand or gravel was encountered in the upper 25 feet with overburden of 5 feet or less. A square (■) indicates a location at which sand or gravel was encountered in the upper 25 feet, but the overburden exceeds 5 feet. The accompanying map on the illustration is an index of where to find the pertinent information for the symbols described above. Each set of numbers refer to corresponding numbers in appendices A and B which are listed by location. An unfilled circle (○) indicates a location where no sand or gravel was encountered in the upper 25 feet. These are not numbered as they are not listed in the appendices.

Gravel pits are designated by (×). Land tracts listed in appendix C are designated by (◇◇) and are numbered. Additional information is on file at the Department of Transportation and the Office of Minerals and Mining, Department of Environment and Natural Resources, both located at Pierre, South Dakota. No attempt has been made to differentiate the active pits from inactive pits.

To illustrate the areas of highest probability for locating sand and gravel, the map has been divided into three area types indicating a "good," "fair," or "poor" probability of locating sand and gravel. Areas with "good" and "fair" probability of finding sand and gravel have been assigned a letter on the map and are described in the following section.

Sand and gravel deposits in areas labeled as "good" are generally thick, with thin overburden, and cover a broad area. Areas designated as "fair" are comparatively thinner, have more overburden,

or are laterally discontinuous. Some sand and gravel occurs in the area labeled as "poor" as indicated by the test-hole data and numbered land tracts on the map. Although some of these deposits may be productive, they are generally limited and difficult to locate.

Sand and Gravel

The areas marked with the letter A are valley train outwash deposits which are found in the valleys of creeks draining into the Big Sioux River from the east. Associated with these valley-train deposits are high- and low-level terraces. Deposits in area A have been subdivided into two separate units (A¹ - A²) based on the probability of locating sand and gravel deposits.

A¹ (designated fair): Individual drainage areas in this unit contain deposits of sand and gravel but are limited in areal extent, have high average overburden thicknesses, or are discontinuous in nature giving the overall probability of A¹ as fair.

A² (designated good): This unit displays high probabilities for locating sand and gravel. The area can be further divided into three separate areas based on their geographic locations. These are Willow Creek, Mud Creek, and Soo Creek.

Valley-train deposits and high- and low-level terraces cover approximately 6 square miles along Willow Creek with an average overburden of 3 feet. The average thickness of the deposit is 16.5 feet as calculated from test-hole data, but varies depending on location. Water-table levels range from 9 feet below land surface on the valley floor to 19 feet on the terraces where the majority of present pits are located.

Deposits along Mud Creek cover approximately 5 square miles with thicknesses of 20 feet common. A maximum of over 40 feet of sand and gravel was encountered in test hole 473. The average overburden is under 3 feet, but high water-table conditions may inhibit pit development.

Sand and gravel deposits along the valley of Soo Creek and its tributary are discontinuous, but have an overburden of 2 feet and a average thickness of 23 feet. Test holes 678 and 679 show a small terrace of very coarse gravel along the main creek and pits have been developed in other terraces throughout the valley.

Area B (designated good): Deposits found in this area make up the largest body of outwash found in Codington County covering approximately 85 square miles. This large valley-train deposit with its associated terraces and outwash plains has a low overburden thickness of under 5 feet. The thickness of the deposit varies depending on location, but thicknesses of over 40 feet are common in the test-hole data. The average water-table depth was calculated from the South Dakota Division of Water Rights observation wells and was found to be 10 feet according to the latest data. The water-table level will fluctuate with wet and dry year cycles. The deposit is found mainly in the valley of the Big Sioux River with a large outwash plain located along Mud Creek to the east of the main valley. Many smaller outwash plains occur in the lower reaches of tributaries draining into the main river from the east.

Area C (designated good): Sand and gravel located in this area are collapsed-outwash deposits that can be characterized topographically by numerous small closed depressions. The nature of the deposits are variable, but substantial amounts of sand and gravel occur in these two deposits. Area C has been divided into two separate units (C¹ and C²) which are described below.

In area C¹ the overburden thickness is inconsistent and ranges from 0 to 8 feet. The thickness of the deposit is also variable with a range from 2 feet to over 43 feet in test hole 120. Only one test hole has water-table information. It was found to be 16 feet in test hole 120.

Area C² represents a collapsed-outwash plain with an average overburden of 4 feet. The thickness of the deposit averages 28 feet with many test holes showing thicknesses of over 40 feet. The deposit is fairly continuous and many pits have been developed in area C².

Area D (designated fair): Sand and gravel in this area is found in a series of long discontinuous ridges which are part of the Bemis end moraine. The overburden ranges from 1 to 12 feet, depending on location and the thickness ranges from 1 to 34 feet. Many pits have been developed in this area.

Area E (designated good): Sand and gravel in this area occurs as collapsed-outwash deposits. A large gravel terrace lies west of Highway 20 and to the northeast of Horseshoe Lake where land tracts 85 through 90, 95, and 96 are located. The average overburden thickness for the entire area is 3 feet and the thickness of the deposit is variable ranging from 1 foot to over 70 feet. Thicknesses of over 30 feet are common with water-table levels generally below 11 feet, but these may vary depending on location.

Area F (designated fair): This area is a narrow ridge of sand and gravel separating Long Lake from an unnamed lake to the southwest. The test-hole data shows overburden of 2 feet or less and reveals a maximum thickness of 36 feet in test hole 456.

Area G (designated good): This area represents a small portion of an outwash plain situated in Antelope valley. The entire deposit trends northwest to southeast and parallels a ridge known as the Altamont moraine. The portion of outwash occurring in Codington County has an average overburden of 2 feet and an average thickness of 25 feet.

Area H (designated fair): Sand and gravel deposits in this area are discontinuous bodies of glacial outwash with a highly variable nature. Test-hole data shows conflicting reports between several tests drilled only a few feet apart. The average overburden was calculated to be 5 feet over the entire area, but here again the values vary greatly. Thicknesses range from just 1 foot to over 30 feet. Most of the pits developed here are located in terrace deposits.

Area I (designated good): This deposit is a collapsed-outwash feature known as a disintegration ridge. There is less than 1 foot of overburden on average and the thickness reaches a maximum of over 40 feet in test hole 644.

Area J (designated fair): Sand and gravel deposits located in this area are associated with a ridge known as the Dakota moraine. The deposits are encompassed within the ridge and are a combination of clay, silt, sand, gravel, and large boulders. The overburden is generally less than 5 feet with

thicknesses being quite variable. Accurate test drilling was difficult in this area due to the ruggedness of the terrain and the nature of the deposit.

The remainder of Codington County has been mapped as "poor," although isolated areas of sand and gravel deposits occur. One such example is located 4 miles west of Goose Lake along State Highway 22 where test-hole data and a number of small pits indicate scattered sand and gravel deposits. Due to the random occurrence of such features, exploration efforts should be concentrated in areas designated as "good" and "fair."

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 in Codington County. The development of a specific site will depend upon material specifications for the desired use, development costs, transportation costs, and future markets.

APPENDIX A. List of test holes in Codington County, South Dakota, which encountered 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, 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: 116N-51W-01DA
LEGAL LOCATION: NE SE sec. 01, T. 116 N., R. 51 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

4 - 30 Gravel

TEST HOLE NUMBER: 2
LOCATION: 116N-51W-07DDDD
LEGAL LOCATION: SE SE SE SE sec. 07, T. 116 N., R. 51 W.

3 - 4 Gravel, fine to coarse, clayey, sandy
9 - 33 Sand, brown, medium to coarse, very clayey; oxidized, saturated at 12 feet; abandoned hole at 33 feet due to rig problems

TEST HOLE NUMBER: 3
LOCATION: 116N-51W-12BBBC
LEGAL LOCATION: SW NW NW NW sec. 12, T. 116 N., R. 51 W.

2 - 4 Gravel, brown, medium to coarse, clayey, sandy; oxidized, moist
4 - 26 Sand and gravel, tan-brown, fine to coarse sand, fine to medium gravel, slightly clayey; oxidized, dry; saturated at 7 feet

TEST HOLE NUMBER: 4
LOCATION: 116N-51W-13CCBB
LEGAL LOCATION: NW NW SW SW sec. 13, T. 116 N., R. 51 W.

8 - 12 Sand, brown, medium, clayey; oxidized, moist; some fine gravel
12 - 21 Sand and gravel, tan-brown, medium to coarse sand, fine gravel, clayey; oxidized, saturated

TEST HOLE NUMBER: 5
LOCATION: 116N-51W-17BACB
LEGAL LOCATION: NW SW NE NW sec. 17, T. 116 N., R. 51 W.

0 - 3 Gravel, coarse, cobbly, very clayey; oxidized, dry
3 - 10 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, clayey; oxidized

TEST HOLE NUMBER: 6
LOCATION: 116N-51W-17BBDA 2
LEGAL LOCATION: NE SE NW NW sec. 17, T. 116 N., R. 51 W.

0 - 8 Sand and gravel, light-brown; some clay, dry
8 - 13 Gravel, fine to medium, very clayey; some sand, oxidized, dry

TEST HOLE NUMBER: 7
LOCATION: 116N-51W-23CCBC
LEGAL LOCATION: SW NW SW SW sec. 23, T. 116 N., R. 51 W.

5 - 10 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, clayey, silty; oxidized, dry
10 - 12 Sand, brown, fine to medium, very clayey; oxidized, moist; some fine gravel

TEST HOLE NUMBER: 8
LOCATION: 116N-51W-23DADD
LEGAL LOCATION: SE SE NE SE sec. 23, T. 116 N., R. 51 W.

1 - 4 Sand and gravel, tan, fine to medium sand, fine to coarse gravel, slightly clayey; oxidized, dry
4 - 6 Sand, tan-brown to brown, fine to medium, slightly clayey; oxidized, moist; some gravel
6 - 14 Sand and gravel, fine to coarse sand, fine to coarse gravel, slightly clayey; oxidized, saturated
14 - 24 Gravel, coarse, slightly clayey; saturated

TEST HOLE NUMBER: 9
LOCATION: 116N-51W-24AADA
LEGAL LOCATION: NE SE NE NE sec. 24, T. 116 N., R. 51 W.

4 - 5 Sand and gravel; abandoned hole at 5 feet, could not penetrate boulders

TEST HOLE NUMBER: 10
LOCATION: 116N-51W-35CCCB
LEGAL LOCATION: NW SW SW SW sec. 35, T. 116 N., R. 51 W.

10 - 15 Sand, brown, fine to coarse, very clayey, gravelly; oxidized, moist
15 - 16 Gravel, brown, fine to medium, slightly clayey, sandy; oxidized, saturated
16 - 22 Sand, brown to gray-brown, fine to coarse, very clayey; saturated; some fine to coarse gravel

TEST HOLE NUMBER: 11
LOCATION: 116N-51W-36DADA
LEGAL LOCATION: NE SE NE SE sec. 36, T. 116 N., R. 51 W.

16 - 20 Gravel; with clay, mushy
20 - 33 Gravel, coarse; rocks and boulders

TEST HOLE NUMBER: 12
LOCATION: 116N-52W-03BAB
LEGAL LOCATION: NW NE NW sec. 03, T. 116 N., R. 52 W.

10 - 32 Gravel

TEST HOLE NUMBER: 13
LOCATION: 116N-52W-03BBBB
LEGAL LOCATION: NW NW NW NW sec. 03, T. 116 N., R. 52 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 5 Sand, yellow-brown, medium
5 - 19 Gravel, coarse
19 - 30 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 14
LOCATION: 116N-52W-04AAB
LEGAL LOCATION: NW NE NE sec. 04, T. 116 N., R. 52 W.

0 - 19 Sand and gravel, poorly sorted

TEST HOLE NUMBER: 15
LOCATION: 116N-52W-04BBA
LEGAL LOCATION: NE NW NW sec. 04, T. 116 N., R. 52 W.

25 - 52 Gravel; some blue clay

TEST HOLE NUMBER: 16
LOCATION: 116N-52W-04BC
LEGAL LOCATION: SW NW sec. 04, T. 116 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

7.5 - 16.5 Sand and gravel, poorly sorted; brown clay at 16 feet

TEST HOLE NUMBER: 17
LOCATION: 116N-52W-04BC 1
LEGAL LOCATION: SW NW sec. 04, T. 116 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

4 - 20 Sand and gravel, poorly sorted; clay at 20 feet

TEST HOLE NUMBER: 18
LOCATION: 116N-52W-04BC 2
LEGAL LOCATION: SW NW sec. 04, T. 116 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

4 - 16 Sand, brown, fine, poorly sorted; to gravel, yellow clay at 16 feet

TEST HOLE NUMBER: 19
LOCATION: 116N-52W-04BC 3
LEGAL LOCATION: SW NW sec. 04, T. 116 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

4 - 20 Sand and gravel, brown, poorly sorted; clay at 20 feet

TEST HOLE NUMBER: 20
LOCATION: 116N-52W-04CCCC
LEGAL LOCATION: SW SW SW SW sec. 04, T. 116 N., R. 52 W.

14 - 29 Gravel; clean

TEST HOLE NUMBER: 21
LOCATION: 116N-52W-04CDAB
LEGAL LOCATION: NW NE SE SW sec. 04, T. 116 N., R. 52 W.

10 - 24 Gravel

TEST HOLE NUMBER: 22
LOCATION: 116N-52W-04DCD
LEGAL LOCATION: SE SW SE sec. 04, T. 116 N., R. 52 W.

0 - 20 Sand; gravel; clay
20 - 29 Sand; gravel

TEST HOLE NUMBER: 23
LOCATION: 116N-52W-04DD
LEGAL LOCATION: SE SE sec. 04, T. 116 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

4 - 8 Sand, fine
9 - 24 Sand

TEST HOLE NUMBER: 24
LOCATION: 116N-52W-05AADD
LEGAL LOCATION: SE SE NE NE sec. 05, T. 116 N., R. 52 W.

2 - 19 Sand, medium to coarse

TEST HOLE NUMBER: 25
LOCATION: 116N-52W-05AADD 1
LEGAL LOCATION: SE SE NE NE sec. 05, T. 116 N., R. 52 W.

0 - 5 Sand, brown, fine, silty; dry, oxidized
5 - 9 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, silty; oxidized, dry
9 - 13 Sand, gray, medium, poorly sorted; some fine gravel, moist to saturated, contamination with fuel oil evident

TEST HOLE NUMBER: 26
LOCATION: 116N-52W-05ABA 1
LEGAL LOCATION: NE NW NE sec. 05, T. 116 N., R. 52 W.

5 - 35 Gravel

TEST HOLE NUMBER: 27
LOCATION: 116N-52W-05ABA 2
LEGAL LOCATION: NE NW NE sec. 05, T. 116 N., R. 52 W.

10 - 38 Sand and rock

TEST HOLE NUMBER: 28
LOCATION: 116N-52W-05ABA 3

LEGAL LOCATION: NE NW NE sec. 05, T. 116 N., R. 52 W.

10 - 38 Sand and rock

TEST HOLE NUMBER: 29

LOCATION: 116N-52W-05AD

LEGAL LOCATION: SE NE sec. 05, T. 116 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

3 - 15 Sand and gravel, brown, poorly sorted; blue-green clay at 15 feet

TEST HOLE NUMBER: 30

LOCATION: 116N-52W-05BAA

LEGAL LOCATION: NE NE NW sec. 05, T. 116 N., R. 52 W.

3 - 16 Sand and gravel, fine to coarse; packed

TEST HOLE NUMBER: 31

LOCATION: 116N-52W-05BADD 1

LEGAL LOCATION: SE SE NE NW sec. 05, T. 116 N., R. 52 W.

10 - 17 Gravel, gray, coarse
17 - 18 Gravel, red; with clay
18 - 20 Gravel, red
20 - 22 Gravel, red and gray, coarse
22 - 24 Gravel, gray, coarse; with fine sand
24 - 26 Sand, gray; with stones

TEST HOLE NUMBER: 32

LOCATION: 116N-52W-05BADD 2

LEGAL LOCATION: SE SE NE NW sec. 05, T. 116 N., R. 52 W.

10 - 17 Gravel, gray, coarse
17 - 18 Gravel, red; with clay

TEST HOLE NUMBER: 33

LOCATION: 116N-52W-05BBB

LEGAL LOCATION: NW NW NW sec. 05, T. 116 N., R. 52 W.

4 - 29 Sand, dark, coarse; clay, gravel; poorly sorted

TEST HOLE NUMBER: 34

LOCATION: 116N-52W-05CCB

LEGAL LOCATION: NW SW SW sec. 05, T. 116 N., R. 52 W.

0 - 9 Sand, silty, poorly sorted

TEST HOLE NUMBER: 35

LOCATION: 116N-52W-05DBDD 1

LEGAL LOCATION: SE SE NW SE sec. 05, T. 116 N., R. 52 W.

6	-	12	Gravel, gray, coarse
12	-	13	Gravel, gray, coarse; with blue clay
13	-	22	Gravel, gray, coarse

TEST HOLE NUMBER: 36

LOCATION: 116N-52W-05DBDD 2

LEGAL LOCATION: SE SE NW SE sec. 05, T. 116 N., R. 52 W.

6	-	12	Gravel, gray, coarse
12	-	13	Gravel, gray, coarse; with blue clay
13	-	15	Gravel, gray, coarse

TEST HOLE NUMBER: 37

LOCATION: 116N-52W-05DCDA 1

LEGAL LOCATION: NE SE SW SE sec. 05, T. 116 N., R. 52 W.

2	-	7	Gravel, coarse; with clay
7	-	9	Gravel, coarse; clean
9	-	11	Gravel, coarse; with rocks
11	-	17	Gravel, gray, coarse; with rocks
17	-	20	Gravel, gray; finer than interval from 11 to 17 feet
20	-	27	Gravel, gray, coarser; with rocks

TEST HOLE NUMBER: 38

LOCATION: 116N-52W-05DCDA 2

LEGAL LOCATION: NE SE SW SE sec. 05, T. 116 N., R. 52 W.

2	-	7	Gravel, coarse; with clay
7	-	9	Gravel, coarse; clean
9	-	11	Gravel, coarse; rocks
11	-	14	Gravel, gray, coarse; rocks

TEST HOLE NUMBER: 39

LOCATION: 116N-52W-05DDDD

LEGAL LOCATION: SE SE SE SE sec. 05, T. 116 N., R. 52 W.

PRELIMINARY LOG -- SUBJECT TO CHANGE

5	-	23	Sand and gravel, fine to coarse
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TEST HOLE NUMBER: 40

LOCATION: 116N-52W-05DDDD

LEGAL LOCATION: SE SE SE SE sec. 05, T. 116 N., R. 52 W.

8	-	12	Gravel; sand, coarse
12	-	20	Sand, coarse; gravel, fine; water
20	-	22	Gravel, fine; sand, coarse, clean
22	-	32	Gravel, medium; clean

TEST HOLE NUMBER: 41

LOCATION: 116N-52W-06AAAA

LEGAL LOCATION: NE NE NE NE sec. 06, T. 116 N., R. 52 W.

8 - 45 Sand and silt, black silt

TEST HOLE NUMBER: 42

LOCATION: 116N-52W-06ABB

LEGAL LOCATION: NW NW NE sec. 06, T. 116 N., R. 52 W.

5 - 15 Sand and gravel, fine to coarse

17 - 23 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 43

LOCATION: 116N-52W-06ABBB

LEGAL LOCATION: NW NW NW NE sec. 06, T. 116 N., R. 52 W.

5 - 25 Gravel, pea-sized

25 - 45 Sand, coarse; water

TEST HOLE NUMBER: 44

LOCATION: 116N-52W-06BBBB

LEGAL LOCATION: NW NW NW NW sec. 06, T. 116 N., R. 52 W.

PRELIMINARY LOG -- SUBJECT TO CHANGE

2 - 24 Sand and gravel, gray, medium sand to medium gravel; some clay/silt layers

TEST HOLE NUMBER: 45

LOCATION: 116N-52W-06BDD

LEGAL LOCATION: SE SE NW sec. 06, T. 116 N., R. 52 W.

3 - 35 Sand and gravel, fine to very coarse; boulders

TEST HOLE NUMBER: 46

LOCATION: 116N-52W-06BDDD

LEGAL LOCATION: SE SE SE NW sec. 06, T. 116 N., R. 52 W.

2 - 4 Gravel

4 - 42 Sand, coarse

TEST HOLE NUMBER: 47

LOCATION: 116N-52W-06CAB

LEGAL LOCATION: NW NE SW sec. 06, T. 116 N., R. 52 W.

0 - 24 Gravel, fine

24 - 84 Gravel; sand; high clay content

TEST HOLE NUMBER: 48

LOCATION: 116N-52W-06DCCC

LEGAL LOCATION: SW SW SW SE sec. 06, T. 116 N., R. 52 W.

2 - 10 Sand, brown, coarse; coarse gravel

TEST HOLE NUMBER: 49
LOCATION: 116N-52W-07BBBB
LEGAL LOCATION: NW NW NW NW sec. 07, T. 116 N., R. 52 W.

2 - 25 Sand, brown, medium to coarse, clayey; dry, oxidized, saturated at 18 feet

TEST HOLE NUMBER: 50
LOCATION: 116N-52W-07BCBB
LEGAL LOCATION: NW NW SW NW sec. 07, T. 116 N., R. 52 W.

1 - 4 Sand, light-brown, coarse, silty, poorly sorted; dry, oxidized
4 - 30 Sand, reddish-brown, fine, well sorted; moist, oxidized, saturated at 14 feet

TEST HOLE NUMBER: 51
LOCATION: 116N-52W-07BCCB 1
LEGAL LOCATION: NW SW SW NW sec. 07, T. 116 N., R. 52 W.

6 - 11 Sand, brown, medium, clayey, poorly sorted; moist, oxidized

TEST HOLE NUMBER: 52
LOCATION: 116N-52W-07BCCB 2
LEGAL LOCATION: NW SW SW NW sec. 07, T. 116 N., R. 52 W.

3 - 7 Sand, brown, coarse, moderately sorted; dry, oxidized
7 - 11 Gravel, brown, very coarse, cobbly; dry, oxidized

TEST HOLE NUMBER: 53
LOCATION: 116N-52W-08AAAA
LEGAL LOCATION: NE NE NE NE sec. 08, T. 116 N., R. 52 W.

5 - 8 Sand, yellow
9 - 13 Sand, yellow, coarse
13 - 16 Gravel, gray, coarse

TEST HOLE NUMBER: 54
LOCATION: 116N-52W-08AABA
LEGAL LOCATION: NE NW NE NE sec. 08, T. 116 N., R. 52 W.

2 - 8 Gravel, coarse
8 - 9 Gravel, coarse; with clay
9 - 12 Gravel, rusty-red
12 - 14 Sand, coarse; dirty
14 - 16 Sand, finer than 12 to 14 foot interval; dirty
16 - 17 Gravel, gray, coarse

TEST HOLE NUMBER: 55
LOCATION: 116N-52W-08AACD
LEGAL LOCATION: SE SW NE NE sec. 08, T. 116 N., R. 52 W.

2 - 13 Gravel, yellow, coarse
13 - 14 Gravel, rusty-red
14 - 16 Gravel, gray, coarse

TEST HOLE NUMBER: 56
LOCATION: 116N-52W-08AADA 1
LEGAL LOCATION: NE SE NE NE sec. 08, T. 116 N., R. 52 W.

2	-	9	Gravel, yellow
9	-	11	Sand, yellow
11	-	15	Sand, yellow; with stones
15	-	16	Sand, gray, coarse
18	-	19	Sand, gray, fine; with stones
19	-	22	Gravel and rock, coarse

TEST HOLE NUMBER: 57
LOCATION: 116N-52W-08AADA 2
LEGAL LOCATION: NE SE NE NE sec. 08, T. 116 N., R. 52 W.

2	-	9	Gravel, yellow
9	-	11	Sand, yellow
11	-	15	Sand, yellow; with stones
15	-	16	Sand, gray, coarse

TEST HOLE NUMBER: 58
LOCATION: 116N-52W-08AADD
LEGAL LOCATION: SE SE NE NE sec. 08, T. 116 N., R. 52 W.

10	-	16	Gravel, coarse
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TEST HOLE NUMBER: 59
LOCATION: 116N-52W-08ABAB
LEGAL LOCATION: NW NE NW NE sec. 08, T. 116 N., R. 52 W.

5	-	8	Gravel; with clay
8	-	13	Gravel, yellow, coarse
14	-	15	Gravel, coarse; with clay
15	-	17	Gravel, coarse

TEST HOLE NUMBER: 60
LOCATION: 116N-52W-08ABDD
LEGAL LOCATION: SE SE NW NE sec. 08, T. 116 N., R. 52 W.

1	-	14	Gravel, yellow, coarse
14	-	15	Gravel; with clay lenses
15	-	17	Gravel, yellow, coarse
17	-	18	Gravel, gray, coarse
18	-	19	Gravel, gray; with blue clay

TEST HOLE NUMBER: 61
LOCATION: 116N-52W-08ADDD 1
LEGAL LOCATION: SE SE SE NE sec. 08, T. 116 N., R. 52 W.

8	-	14	Gravel, coarse; with clay
14	-	21	Gravel, yellow, coarse
21	-	25	Gravel, gray, coarse

TEST HOLE NUMBER: 62
LOCATION: 116N-52W-08ADDD 2
LEGAL LOCATION: SE SE SE NE sec. 08, T. 116 N., R. 52 W.

8 - 14 Gravel, coarse; with clay
14 - 17 Gravel, yellow, coarse

TEST HOLE NUMBER: 63
LOCATION: 116N-52W-09BCC
LEGAL LOCATION: SW SW NW sec. 09, T. 116 N., R. 52 W.

19 - 24 Gravel, fine, silty

TEST HOLE NUMBER: 64
LOCATION: 116N-52W-09DAD
LEGAL LOCATION: SE NE SE sec. 09, T. 116 N., R. 52 W.

4 - 10 Gravel, poorly sorted; some clay
10 - 49 Gravel, fine; cleaner than interval from 4 to 10 feet

TEST HOLE NUMBER: 65
LOCATION: 116N-52W-10CBBC
LEGAL LOCATION: SW NW NW SW sec. 10, T. 116 N., R. 52 W.

5 - 30 Gravel, coarse; cobbles, coarse sand

TEST HOLE NUMBER: 66
LOCATION: 116N-52W-12DDAA
LEGAL LOCATION: NE NE SE SE sec. 12, T. 116 N., R. 52 W.

0 - 6 Gravel, light-brown, silty; some sand, oxidized, dry

TEST HOLE NUMBER: 67
LOCATION: 116N-52W-14CCCD
LEGAL LOCATION: SE SW SW SW sec. 14, T. 116 N., R. 52 W.

4 - 21 sand and gravel; medium to coarse

TEST HOLE NUMBER: 68
LOCATION: 116N-52W-14DAAD
LEGAL LOCATION: SE NE NE SE sec. 14, T. 116 N., R. 52 W.

0 - 5 Sand and gravel, brown, fine to coarse sand, fine gravel, slightly clayey; dry, oxidized

TEST HOLE NUMBER: 69
LOCATION: 116N-52W-14DABD
LEGAL LOCATION: SE NW NE SE sec. 14, T. 116 N., R. 52 W.

10 - 20 Sand and gravel, gray, fine to coarse sand, fine to medium gravel, clayey; unoxidized, saturated at 14 feet

TEST HOLE NUMBER: 70
LOCATION: 116N-52W-15ACBC
LEGAL LOCATION: SW NW SW NE sec. 15, T. 116 N., R. 52 W.

2 - 19 Sand

TEST HOLE NUMBER: 71
LOCATION: 116N-52W-15BCBA
LEGAL LOCATION: NE NW SW NW sec. 15, T. 116 N., R. 52 W.

3 - 15 Gravel and sand, coarse sand
15 - 27 Sand; some silt; water

TEST HOLE NUMBER: 72
LOCATION: 116N-52W-15DAAA
LEGAL LOCATION: NE NE NE SE sec. 15, T. 116 N., R. 52 W.

2 - 4 Gravel
4 - 15 gravel; sand; silt

TEST HOLE NUMBER: 73
LOCATION: 116N-52W-15DDC
LEGAL LOCATION: SW SE SE sec. 15, T. 116 N., R. 52 W.

0 - 9 Sand; gravel; clay; poorly sorted
9 - 14 Sand and gravel
14 - 34 Sand and gravel; increasing clay content

TEST HOLE NUMBER: 74
LOCATION: 116N-52W-15DDD
LEGAL LOCATION: SE SE SE sec. 15, T. 116 N., R. 52 W.

0 - 4 Sand, clayey
4 - 34 Sand, coarse to medium; clean

TEST HOLE NUMBER: 75
LOCATION: 116N-52W-19DCCC
LEGAL LOCATION: SW SW SW SE sec. 19, T. 116 N., R. 52 W.

2 - 13 Sand and gravel, brown, fine to coarse sand, fine gravel, clayey; moist, oxidized
13 - 20 Sand and gravel, tan-brown, fine to coarse sand, fine gravel, clayey; saturated

TEST HOLE NUMBER: 76
LOCATION: 116N-52W-22AABB
LEGAL LOCATION: NW NW NE NE sec. 22, T. 116 N., R. 52 W.

6 - 20 Sand and gravel, brown, medium to coarse sand, fine to coarse gravel, subangular to rounded;
majority is carbonates with some igneous rocks

TEST HOLE NUMBER: 77
LOCATION: 116N-52W-22AACC
LEGAL LOCATION: SW SW NE NE sec. 22, T. 116 N., R. 52 W.

5 - 8 Sand, brown, very silty; saturated

8 - 19 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, subangular to rounded; majority is carbonates with some igneous rocks

TEST HOLE NUMBER: 78
LOCATION: 116N-52W-22ABA
LEGAL LOCATION: NE NW NE sec. 22, T. 116 N., R. 52 W.

6 - 14 Sand, brown, poorly sorted
14 - 19 Gravel, pea-sized
19 - 44 Sand; gravel, pea-sized

TEST HOLE NUMBER: 79
LOCATION: 116N-52W-22ADDA
LEGAL LOCATION: NE SE SE NE sec. 22, T. 116 N., R. 52 W.

10 - 12 Sand, brown, medium to coarse; composed mainly of carbonates with some igneous rocks

TEST HOLE NUMBER: 80
LOCATION: 116N-52W-22ADDB
LEGAL LOCATION: NW SE SE NE sec. 22, T. 116 N., R. 52 W.

7 - 15 Sand, gray, very silty, clayey; sand composed of carbonates

TEST HOLE NUMBER: 81
LOCATION: 116N-52W-22BAA
LEGAL LOCATION: NE NE NW sec. 22, T. 116 N., R. 52 W.

4 - 14 Sand, brown to gray; pea gravel, some clay
14 - 20 Sand and gravel
24 - 39 Sand, fine, clayey

TEST HOLE NUMBER: 82
LOCATION: 116N-52W-22BADA
LEGAL LOCATION: NE SE NE NW sec. 22, T. 116 N., R. 52 W.

0 - 24 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, subangular to round; majority of gravel is carbonates with some igneous rock, more sand than gravel; water table is at 10 feet and the color changes to gray

TEST HOLE NUMBER: 83
LOCATION: 116N-52W-22BDAD
LEGAL LOCATION: SE NE SE NW sec. 22, T. 116 N., R. 52 W.

0 - 19 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, subangular to round; majority sand; water level at 9 feet, sand turns gray at this depth

TEST HOLE NUMBER: 84
LOCATION: 116N-52W-22BDGD
LEGAL LOCATION: SE SW SE NW sec. 22, T. 116 N., R. 52 W.

5 - 18 Sand and gravel

TEST HOLE NUMBER: 85
LOCATION: 116N-52W-22BD CD 1
LEGAL LOCATION: SE SW SE NW sec. 22, T. 116 N., R. 52 W.

0 - 17 Sand, brown, fine to coarse; with some brown, fine to medium gravel, water level is at 9 feet

TEST HOLE NUMBER: 86
LOCATION: 116N-52W-22BD DD
LEGAL LOCATION: SE SE SE NW sec. 22, T. 116 N., R. 52 W.

0 - 12 Sand, brown, fine to coarse; with some brown, fine to medium gravel, water level is at 9 feet

TEST HOLE NUMBER: 87
LOCATION: 116N-52W-22CA AA
LEGAL LOCATION: NE NE NE SW sec. 22, T. 116 N., R. 52 W.

3 - 18 Sand and gravel

TEST HOLE NUMBER: 88
LOCATION: 116N-52W-22CB CC
LEGAL LOCATION: SW SW NW SW sec. 22, T. 116 N., R. 52 W.

6 - 29 Sand and gravel

TEST HOLE NUMBER: 89
LOCATION: 116N-52W-22DB DD
LEGAL LOCATION: SE SE NW SE sec. 22, T. 116 N., R. 52 W.

2 - 18 Sand and gravel

TEST HOLE NUMBER: 90
LOCATION: 116N-52W-22DD DC
LEGAL LOCATION: SW SE SE SE sec. 22, T. 116 N., R. 52 W.

5 - 18 Sand and gravel; some clay in it

TEST HOLE NUMBER: 91
LOCATION: 116N-52W-25CD DC
LEGAL LOCATION: SW SE SE SW sec. 25, T. 116 N., R. 52 W.

3 - 11 Sand and gravel, light-brown, clayey; oxidized, moist

TEST HOLE NUMBER: 92
LOCATION: 116N-52W-25DD DA
LEGAL LOCATION: NE SE SE SE sec. 25, T. 116 N., R. 52 W.

5 - 9 Sand and gravel, tan-brown, clayey, silty; dry, oxidized

TEST HOLE NUMBER: 93
LOCATION: 116N-52W-27AA AB

LEGAL LOCATION: NW NE NE NE sec. 27, T. 116 N., R. 52 W.

5 - 17 Sand and gravel

TEST HOLE NUMBER: 94

LOCATION: 116N-52W-27AABB

LEGAL LOCATION: NW NW NE NE sec. 27, T. 116 N., R. 52 W.

4 - 10 Sand and gravel

10 - 44 Sand, gray to brown; gravel, medium

TEST HOLE NUMBER: 95

LOCATION: 116N-52W-27ABAA

LEGAL LOCATION: NE NE NW NE sec. 27, T. 116 N., R. 52 W.

2 - 24 Sand and gravel

TEST HOLE NUMBER: 96

LOCATION: 116N-52W-27ABBB

LEGAL LOCATION: NW NW NW NE sec. 27, T. 116 N., R. 52 W.

5 - 22 Sand and gravel

TEST HOLE NUMBER: 97

LOCATION: 116N-52W-27ABCA

LEGAL LOCATION: NE SW NW NE sec. 27, T. 116 N., R. 52 W.

4 - 18 Sand and gravel

TEST HOLE NUMBER: 98

LOCATION: 116N-52W-27ABDA

LEGAL LOCATION: NE SE NW NE sec. 27, T. 116 N., R. 52 W.

6 - 18 Sand and gravel

TEST HOLE NUMBER: 99

LOCATION: 116N-52W-27BAA

LEGAL LOCATION: NE NE NW sec. 27, T. 116 N., R. 52 W.

19 - 84 Sand, coarse; water flowed at about 50 feet

TEST HOLE NUMBER: 100

LOCATION: 116N-52W-27BAAB

LEGAL LOCATION: NW NE NE NW sec. 27, T. 116 N., R. 52 W.

2 - 18 Sand and gravel

TEST HOLE NUMBER: 101

LOCATION: 116N-52W-27BBA

LEGAL LOCATION: NE NW NW sec. 27, T. 116 N., R. 52 W.

4 - 34 Sand, brown, coarse, poorly sorted

TEST HOLE NUMBER: 102
LOCATION: 116N-52W-27BBAA
LEGAL LOCATION: NE NE NW NW sec. 27, T. 116 N., R. 52 W.

3 - 15 Sand and gravel

TEST HOLE NUMBER: 103
LOCATION: 116N-52W-27BBBB 1
LEGAL LOCATION: NW NW NW NW sec. 27, T. 116 N., R. 52 W.

2 - 30 Sand and gravel

TEST HOLE NUMBER: 104
LOCATION: 116N-52W-27BBBB 2
LEGAL LOCATION: NW NW NW NW sec. 27, T. 116 N., R. 52 W.

2 - 30 Sand and gravel

TEST HOLE NUMBER: 105
LOCATION: 116N-52W-27BCCB
LEGAL LOCATION: NW SW SW NW sec. 27, T. 116 N., R. 52 W.

4 - 25 Sand and gravel

TEST HOLE NUMBER: 106
LOCATION: 116N-52W-27BDDD
LEGAL LOCATION: SE SE SE NW sec. 27, T. 116 N., R. 52 W.

7 - 17 Sand and gravel

TEST HOLE NUMBER: 107
LOCATION: 116N-52W-27CAAD
LEGAL LOCATION: SE NE NE SW sec. 27, T. 116 N., R. 52 W.

4 - 30 Sand and gravel

TEST HOLE NUMBER: 108
LOCATION: 116N-52W-27CACA 1
LEGAL LOCATION: NE SW NE SW sec. 27, T. 116 N., R. 52 W.

8 - 15 Gravel

TEST HOLE NUMBER: 109
LOCATION: 116N-52W-27CACA 2
LEGAL LOCATION: NE SW NE SW sec. 27, T. 116 N., R. 52 W.

6 - 30 Sand and gravel

TEST HOLE NUMBER: 110
LOCATION: 116N-52W-27CACC

LEGAL LOCATION: SW SW NE SW sec. 27, T. 116 N., R. 52 W.

5 - 15 Sand and gravel

TEST HOLE NUMBER: 111

LOCATION: 116N-52W-27CCCC

LEGAL LOCATION: SW SW SW SW sec. 27, T. 116 N., R. 52 W.

1 - 5 Sand, brown, fine to coarse, clayey; some gravel, dry, oxidized
5 - 7.5 Sand, brown, fine to coarse; some gravel, moist to saturated, oxidized

TEST HOLE NUMBER: 112

LOCATION: 116N-52W-27CCCC 1

LEGAL LOCATION: SW SW SW SW sec. 27, T. 116 N., R. 52 W.

3 - 17 Sand and gravel

TEST HOLE NUMBER: 113

LOCATION: 116N-52W-27CCCC 2

LEGAL LOCATION: SW SW SW SW sec. 27, T. 116 N., R. 52 W.

4 - 16 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 114

LOCATION: 116N-52W-27CCCC 3

LEGAL LOCATION: SW SW SW SW sec. 27, T. 116 N., R. 52 W.

PRELIMINARY LOG -- SUBJECT TO CHANGE

2 - 17 Sand and gravel, medium to coarse; clean

TEST HOLE NUMBER: 115

LOCATION: 116N-52W-27CDCA

LEGAL LOCATION: NE SW SE SW sec. 27, T. 116 N., R. 52 W.

6 - 25 Sand and gravel

TEST HOLE NUMBER: 116

LOCATION: 116N-52W-27DCDD

LEGAL LOCATION: SE SE SW SE sec. 27, T. 116 N., R. 52 W.

2 - 17 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 117

LOCATION: 116N-52W-28AAAA

LEGAL LOCATION: NE NE NE NE sec. 28, T. 116 N., R. 52 W.

5 - 30 Sand and gravel

TEST HOLE NUMBER: 118

LOCATION: 116N-52W-28AAAA 1

LEGAL LOCATION: NE NE NE NE sec. 28, T. 116 N., R. 52 W.

6 - 10 Gravel, coarse
10 - 38 Sand, medium

TEST HOLE NUMBER: 119

LOCATION: 116N-52W-28ADDB

LEGAL LOCATION: NW SE SE NE sec. 28, T. 116 N., R. 52 W.

4 - 27 Sand and gravel

TEST HOLE NUMBER: 120

LOCATION: 116N-52W-31BBAB

LEGAL LOCATION: NW NE NW NW sec. 31, T. 116 N., R. 52 W.

0 - 16 Sand and gravel, red-brown, fine to coarse sand, fine to medium gravel, clayey; oxidized, moist
16 - 43 Sand, brown, fine to medium, clayey; oxidized, saturated

TEST HOLE NUMBER: 121

LOCATION: 116N-52W-31CCCC

LEGAL LOCATION: SW SW SW SW sec. 31, T. 116 N., R. 52 W.

8 - 10 Sand

TEST HOLE NUMBER: 122

LOCATION: 116N-52W-31CDDD

LEGAL LOCATION: SE SE SE SW sec. 31, T. 116 N., R. 52 W.

2 - 6 Gravel
6 - 12 Sand and clay

TEST HOLE NUMBER: 123

LOCATION: 116N-52W-31DADD

LEGAL LOCATION: SE SE NE SE sec. 31, T. 116 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

7 - 11 Gravel
19 - 21 Sand

TEST HOLE NUMBER: 124

LOCATION: 116N-52W-31DDDD

LEGAL LOCATION: SE SE SE SE sec. 31, T. 116 N., R. 52 W.

18 - 20 Sand, medium
20 - 35 Gravel and clay

TEST HOLE NUMBER: 125

LOCATION: 116N-52W-33AAAA

LEGAL LOCATION: NE NE NE NE sec. 33, T. 116 N., R. 52 W.

13 - 20 Sand, coarse; silt, brown; water
20 - 40 Gravel and silt, fine gravel, brown silt

TEST HOLE NUMBER: 126

LOCATION: 116N-52W-34AA

LEGAL LOCATION: NE NE sec. 34, T. 116 N., R. 52 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

13 - 48 Gravel

TEST HOLE NUMBER: 127

LOCATION: 116N-52W-34CCCC

LEGAL LOCATION: SW SW SW SW sec. 34, T. 116 N., R. 52 W.

12 - 34 Sand, brown, clayey, pebbly; oxidized, wet

TEST HOLE NUMBER: 128

LOCATION: 116N-52W-34CDDD

LEGAL LOCATION: SE SE SE SW sec. 34, T. 116 N., R. 52 W.

10 - 20 Sand and gravel, gray-brown, fine to coarse sand, fine gravel, slightly clayey; saturated

TEST HOLE NUMBER: 129

LOCATION: 116N-52W-34DADA

LEGAL LOCATION: NE SE NE SE sec. 34, T. 116 N., R. 52 W.

11 - 37 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, clayey; oxidized, moist

TEST HOLE NUMBER: 130

LOCATION: 116N-53W-01BCA

LEGAL LOCATION: NE SW NW sec. 01, T. 116 N., R. 53 W.

9 - 14 Sand; some clay

TEST HOLE NUMBER: 131

LOCATION: 116N-53W-01DCCD

LEGAL LOCATION: SE SW SW SE sec. 01, T. 116 N., R. 53 W.

11 - 36 Sand, grayish-brown, medium, clayey; saturated, slightly oxidized

TEST HOLE NUMBER: 132

LOCATION: 116N-53W-01DDBD

LEGAL LOCATION: SE NW SE SE sec. 01, T. 116 N., R. 53 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

21 - 55 Gravel

TEST HOLE NUMBER: 133
LOCATION: 116N-53W-02AAAB
LEGAL LOCATION: NW NE NE NE sec. 02, T. 116 N., R. 53 W.

2 - 9 Sand and gravel
9 - 27 Sand, brown, very fine

TEST HOLE NUMBER: 134
LOCATION: 116N-53W-02AADD
LEGAL LOCATION: SE SE NE NE sec. 02, T. 116 N., R. 53 W.

1 - 33 Sand, brown, fine

TEST HOLE NUMBER: 135
LOCATION: 116N-53W-02BBBC
LEGAL LOCATION: SW NW NW NW sec. 02, T. 116 N., R. 53 W.

3 - 14 Sand, medium to coarse

TEST HOLE NUMBER: 136
LOCATION: 116N-53W-02CB
LEGAL LOCATION: NW SW sec. 02, T. 116 N., R. 53 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

1 - 10 Sand, yellow
11 - 16 Sand, yellow
16 - 33.5 Sand, yellow and gray, coarse

TEST HOLE NUMBER: 137
LOCATION: 116N-53W-03AACA
LEGAL LOCATION: NE SW NE NE sec. 03, T. 116 N., R. 53 W.

2 - 20 Sand, fine
20 - 42 Sand, medium

TEST HOLE NUMBER: 138
LOCATION: 116N-53W-03BBCC
LEGAL LOCATION: SW SW NW NW sec. 03, T. 116 N., R. 53 W.

2 - 5 Sand and gravel, tan-brown, fine to medium sand, fine to medium gravel, silty, clayey; oxidized, dry
10 - 24 Sand, light-brown, fine, very clayey, pebbly; little silt, dry

TEST HOLE NUMBER: 139
LOCATION: 116N-53W-03DBAB
LEGAL LOCATION: NW NE NW SE sec. 03, T. 116 N., R. 53 W.

4 - 33 Sand and gravel

TEST HOLE NUMBER: 140
LOCATION: 116N-53W-04BCBB

LEGAL LOCATION: NW NW SW NW sec. 04, T. 116 N., R. 53 W.

- 1 - 2 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, very silty, clayey; oxidized, dry
- 2 - 12 Sand, brown, fine to coarse, very silty, clayey; some fine pebbles, oxidized, dry
- 12 - 14 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, silty, clayey; oxidized, dry
- 14 - 22 Sand and gravel, brown, fine to coarse sand, fine with some medium gravel, very silty, very clayey; oxidized, slightly moist

TEST HOLE NUMBER: 141

LOCATION: 116N-53W-04DDA

LEGAL LOCATION: NE SE SE sec. 04, T. 116 N., R. 53 W.

- 0 - 14 Sand and gravel, poorly sorted; clean
- 14 - 29 Sand, fine; clean

TEST HOLE NUMBER: 142

LOCATION: 116N-53W-04DDDD

LEGAL LOCATION: SE SE SE SE sec. 04, T. 116 N., R. 53 W.

- 1 - 10 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 143

LOCATION: 116N-53W-05BBCB

LEGAL LOCATION: NW SW NW NW sec. 05, T. 116 N., R. 53 W.

- 18 - 55 Gravel

TEST HOLE NUMBER: 144

LOCATION: 116N-53W-05DDDD

LEGAL LOCATION: SE SE SE SE sec. 05, T. 116 N., R. 53 W.

- 5 - 23 Sand, medium to coarse; some clay mixed

TEST HOLE NUMBER: 145

LOCATION: 116N-53W-06DDCC

LEGAL LOCATION: SW SW SE SE sec. 06, T. 116 N., R. 53 W.

- 1 - 10 Sand, reddish-brown, fine to medium; oxidized, moist
- 13 - 34 Sand, reddish-brown, medium to coarse, slightly pebbly; oxidized, moist

TEST HOLE NUMBER: 146

LOCATION: 116N-53W-08BBBB

LEGAL LOCATION: NW NW NW NW sec. 08, T. 116 N., R. 53 W.

- 25 - 35 Sand, medium to coarse; with clay and some coarse gravel

TEST HOLE NUMBER: 147

LOCATION: 116N-53W-08CBCB

LEGAL LOCATION: NW SW NW SW sec. 08, T. 116 N., R. 53 W.

- 1 - 6 Sand, reddish-brown, clayey, gravelly; oxidized, moist

TEST HOLE NUMBER: 148
LOCATION: 116N-53W-08DDBB
LEGAL LOCATION: NW NW SE SE sec. 08, T. 116 N., R. 53 W.

- 2 - 6 Sand and gravel, tan-brown, silty, cobbly; dry, oxidized
- 6 - 11 Sand, gray-brown, coarse, poorly sorted; some medium gravel, moist, oxidized
- 11 - 15 Sand, gray, medium to coarse, slightly clayey; some fine gravel, saturated, partially oxidized
- 15 - 19 Sand, gray, fine to medium, slightly clayey, slightly silty, fairly well-sorted; saturated, unoxidized
- 19 - 40 Gravel, gray, coarse, slightly clayey, silty, sandy, poorly sorted; saturated, unoxidized

TEST HOLE NUMBER: 149
LOCATION: 116N-53W-09BCCD
LEGAL LOCATION: SE SW SW NW sec. 09, T. 116 N., R. 53 W.

- 4 - 12 Sand and gravel, reddish-brown, fine to medium sand, fine to coarse gravel, clayey; moist, oxidized
- 12 - 18 Sand and gravel, reddish-brown, fine to coarse sand, fine gravel, slightly clayey; moist, oxidized
- 18 - 35 Sand, reddish-brown, fine to medium sand, very slightly clayey; moist, oxidized

TEST HOLE NUMBER: 150
LOCATION: 116N-53W-10DD
LEGAL LOCATION: SE SE sec. 10, T. 116 N., R. 53 W.

- 3 - 27 Gravel; dry

TEST HOLE NUMBER: 151
LOCATION: 116N-53W-11DD
LEGAL LOCATION: SE SE sec. 11, T. 116 N., R. 53 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

- 19.5 - 20.5 Sand
- 24 - 26 Sand

TEST HOLE NUMBER: 152
LOCATION: 116N-53W-12AAA
LEGAL LOCATION: NE NE NE sec. 12, T. 116 N., R. 53 W.

- 0 - 39 Sand, medium; clay increases with depth

TEST HOLE NUMBER: 153
LOCATION: 116N-53W-12AAAB
LEGAL LOCATION: NW NE NE NE sec. 12, T. 116 N., R. 53 W.

- 3 - 7 Sand; dry
- 7 - 26 Sand, fine; water

TEST HOLE NUMBER: 154
LOCATION: 116N-53W-12AABA
LEGAL LOCATION: NE NW NE NE sec. 12, T. 116 N., R. 53 W.

- 5 - 33 Sand, fine; water

TEST HOLE NUMBER: 155
LOCATION: 116N-53W-12ADDD
LEGAL LOCATION: SE SE SE NE sec. 12, T. 116 N., R. 53 W.

2 - 12 Sand, medium to coarse; some clay mixed

TEST HOLE NUMBER: 156
LOCATION: 116N-53W-12BDBB
LEGAL LOCATION: NW NW SE NW sec. 12, T. 116 N., R. 53 W.

0 - 3 Sand, brown, medium, silty; moist, oxidized
15 - 35 Sand, brown, medium to coarse, poorly sorted; saturated, oxidized

TEST HOLE NUMBER: 157
LOCATION: 116N-53W-12CBBB
LEGAL LOCATION: NW NW NW SW sec. 12, T. 116 N., R. 53 W.

8 - 12 Gravel, fine; sand, coarse; silt
12 - 25 Sand, coarse; silt; water

TEST HOLE NUMBER: 158
LOCATION: 116N-53W-12DCCB
LEGAL LOCATION: NW SW SW SE sec. 12, T. 116 N., R. 53 W.

8 - 14 Sand

TEST HOLE NUMBER: 159
LOCATION: 116N-53W-13CBCC
LEGAL LOCATION: SW SW NW SW sec. 13, T. 116 N., R. 53 W.

2 - 5 Sand and gravel, brown, fine to medium sand, fine gravel, clayey, silty; moist
5 - 8 Sand, tan-brown, fine, very clayey, silty; saturated, oxidized

TEST HOLE NUMBER: 160
LOCATION: 116N-53W-14BBBA
LEGAL LOCATION: NE NW NW NW sec. 14, T. 116 N., R. 53 W.

10 - 32 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 161
LOCATION: 116N-53W-14CAAD
LEGAL LOCATION: SE NE NE SW sec. 14, T. 116 N., R. 53 W.

1 - 17 Sand and gravel, fine to coarse; shells
17 - 24 Sand, black, fine to medium

TEST HOLE NUMBER: 162
LOCATION: 116N-53W-15AAAD
LEGAL LOCATION: SE NE NE NE sec. 15, T. 116 N., R. 53 W.

2 - 14 Sand, medium to coarse

TEST HOLE NUMBER: 163
LOCATION: 116N-53W-15CCCC 1
LEGAL LOCATION: SW SW SW SW sec. 15, T. 116 N., R. 53 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

- 1 - 34 Sand and gravel, medium to coarse, angular sand, some gravel; grades to all medium to coarse gravel

TEST HOLE NUMBER: 164
LOCATION: 116N-53W-15CCCC 2
LEGAL LOCATION: SW SW SW SW sec. 15, T. 116 N., R. 53 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

- 2 - 34 Sand and gravel, yellow-brown, medium to coarse sand, fine to medium gravel

TEST HOLE NUMBER: 165
LOCATION: 116N-53W-16BCCA
LEGAL LOCATION: NE SW SW NW sec. 16, T. 116 N., R. 53 W.

- 1 - 11 Sand and gravel, yellow-brown, silty, slightly clayey; oxidized, dry
- 11 - 24 Sand, tan-brown, medium to coarse, clayey, slightly gravelly; oxidized, moist
- 24 - 31 Gravel, tan-brown, medium, clayey, silty, sandy; oxidized, moist

TEST HOLE NUMBER: 166
LOCATION: 116N-53W-16CCCC 1
LEGAL LOCATION: SW SW SW SW sec. 16, T. 116 N., R. 53 W.

- 3 - 4 Sand, medium
- 18 - 19 Gravel, coarse; may be outwash or till

TEST HOLE NUMBER: 167
LOCATION: 116N-53W-16DDAA
LEGAL LOCATION: NE NE SE SE sec. 16, T. 116 N., R. 53 W.

- 1 - 5 Sand and gravel, reddish-brown, fine to coarse sand, fine to coarse gravel, slightly clayey; oxidized, moist
- 5 - 34 Sand and gravel, reddish-brown, fine to coarse sand, fine gravel, slightly clayey; oxidized, moist, saturated and more clay from 18 feet

TEST HOLE NUMBER: 168
LOCATION: 116N-53W-17DDAA
LEGAL LOCATION: NE NE SE SE sec. 17, T. 116 N., R. 53 W.

- 1 - 16 Sand and gravel, reddish-brown, fine to medium sand, medium to coarse gravel, silty, clayey; oxidized
- 16 - 20 Sand and gravel, reddish-brown, medium to coarse sand, medium gravel, silty, clayey; oxidized
- 20 - 30 Sand, reddish-brown, medium to fine, pebbly; clayey, silty; moist

TEST HOLE NUMBER: 169
LOCATION: 116N-53W-21CCDC
LEGAL LOCATION: SW SE SW SW sec. 21, T. 116 N., R. 53 W.

- 0 - 4 Sand and gravel, reddish-brown, fine to coarse sand, fine to medium gravel, very clayey, silty; oxidized, moist

18 - 20 Sand, gray, coarse, very clayey; very moist, unoxidized
20 - 44 Sand and gravel, gray, fine to coarse sand, fine gravel, very clayey; unoxidized, saturated

TEST HOLE NUMBER: 170
LOCATION: 116N-53W-22AAAA
LEGAL LOCATION: NE NE NE NE sec. 22, T. 116 N., R. 53 W.

6 - 14 Sand; gravel; wet

TEST HOLE NUMBER: 171
LOCATION: 116N-53W-22BBBB
LEGAL LOCATION: NW NW NW NW sec. 22, T. 116 N., R. 53 W.

5 - 17 Sand; clean; occasional gravel pebbles
17 - 25 Gravel, fine; sand
25 - 37 Sand and gravel, fine gravel

TEST HOLE NUMBER: 172
LOCATION: 116N-53W-24CBBB
LEGAL LOCATION: NW NW NW SW sec. 24, T. 116 N., R. 53 W.

4 - 8 Gravel

TEST HOLE NUMBER: 173
LOCATION: 116N-53W-26BBBB
LEGAL LOCATION: NW NW NW NW sec. 26, T. 116 N., R. 53 W.

3 - 6 Gravel and clay

TEST HOLE NUMBER: 174
LOCATION: 116N-53W-35CCCC
LEGAL LOCATION: SW SW SW SW sec. 35, T. 116 N., R. 53 W.

4 - 6 Sand and gravel

TEST HOLE NUMBER: 175
LOCATION: 116N-53W-35DDDD
LEGAL LOCATION: SE SE SE SE sec. 35, T. 116 N., R. 53 W.

4 - 28 Sand and gravel; some clay in it

TEST HOLE NUMBER: 176
LOCATION: 116N-53W-36CCCC
LEGAL LOCATION: SW SW SW SW sec. 36, T. 116 N., R. 53 W.

3 - 4 Gravel, fine
4 - 8 Sand, coarse
8 - 9 Gravel, medium
9 - 20 Sand and gravel, coarse, subangular sand

TEST HOLE NUMBER: 177
LOCATION: 116N-54W-01AAAD 2

LEGAL LOCATION: SE NE NE NE sec. 01, T. 116 N., R. 54 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 5 Sand, fine to medium, clayey

TEST HOLE NUMBER: 178
LOCATION: 116N-54W-01CCBC
LEGAL LOCATION: SW NW SW SW sec. 01, T. 116 N., R. 54 W.

13 - 20 Gravel

TEST HOLE NUMBER: 179
LOCATION: 116N-54W-16DDDD
LEGAL LOCATION: SE SE SE SE sec. 16, T. 116 N., R. 54 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

2 - 8 Sand, yellow-brown, coarse; some gravel

TEST HOLE NUMBER: 180
LOCATION: 116N-54W-19BCCB
LEGAL LOCATION: NW SW SW NW sec. 19, T. 116 N., R. 54 W.

4 - 5 Sand, tan-brown, fine-grained, clayey; oxidized, dry
19 - 21 Sand, tan-brown, fine, clayey, silty; oxidized, moist
24 - 27 Sand, tan-brown, fine, clayey, silty; saturated

TEST HOLE NUMBER: 181
LOCATION: 116N-54W-19CBCB
LEGAL LOCATION: NW SW NW SW sec. 19, T. 116 N., R. 54 W.

6 - 8 Gravel, brown, clayey; oxidized, dry; some silt, some sand

TEST HOLE NUMBER: 182
LOCATION: 116N-54W-19CBCC
LEGAL LOCATION: SW SW NW SW sec. 19, T. 116 N., R. 54 W.

3 - 5 Sand, brown, clayey, sandy; oxidized, saturated

TEST HOLE NUMBER: 183
LOCATION: 116N-54W-19CDDD
LEGAL LOCATION: SE SE SE SW sec. 19, T. 116 N., R. 54 W.

5 - 9 Sand and gravel, brown, clayey; oxidized, moist
9 - 14 Sand and gravel, brown, clayey; oxidized, saturated

TEST HOLE NUMBER: 184
LOCATION: 116N-54W-25BCBB
LEGAL LOCATION: NW NW SW NW sec. 25, T. 116 N., R. 54 W.

1 - 4 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, clayey, silty; oxidized, dry
4 - 7 Sand, brown, fine to coarse, very silty, very clayey; oxidized, dry; some fine gravel
22 - 28 Sand, gray-brown, medium, very clayey; partially oxidized, saturated

TEST HOLE NUMBER: 185
LOCATION: 116N-54W-33DDAD
LEGAL LOCATION: SE NE SE SE sec. 33, T. 116 N., R. 54 W.

1 - 3 Sand and gravel, brown, fine sand, fine gravel, clayey, very silty; oxidized, dry

TEST HOLE NUMBER: 186
LOCATION: 116N-55W-01AAAD 2
LEGAL LOCATION: SE NE NE NE sec. 01, T. 116 N., R. 55 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 10 Sand, medium; some lake clay (silt)

TEST HOLE NUMBER: 187
LOCATION: 116N-55W-33DADD
LEGAL LOCATION: SE SE NE SE sec. 33, T. 116 N., R. 55 W.

0 - 1 Sand, dark-brown (fill)
1 - 6 Sand, light-brown; oxidized, dry; some silt, some clay pebbles
6 - 23 Sand, dark-brown, medium-grained, clayey, silty; oxidized, dry; few clay pebbles
23 - 55 Sand, gray, medium to fine, clayey; unoxidized, saturated

TEST HOLE NUMBER: 188
LOCATION: 116N-55W-35BBAA
LEGAL LOCATION: NE NE NW NW sec. 35, T. 116 N., R. 55 W.

0 - 6 Sand, brown, silty; oxidized, dry; some gravel

TEST HOLE NUMBER: 189
LOCATION: 117N-51W-04AD
LEGAL LOCATION: SE NE sec. 04, T. 117 N., R. 51 W.

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4 - 7 Gravel

TEST HOLE NUMBER: 190
LOCATION: 117N-51W-06BCBB
LEGAL LOCATION: NW NW SW NW sec. 06, T. 117 N., R. 51 W.

1 - 3 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, clayey, silty; oxidized, dry

TEST HOLE NUMBER: 191
LOCATION: 117N-51W-09BBBB
LEGAL LOCATION: NW NW NW NW sec. 09, T. 117 N., R. 51 W.

1 - 4 Sand and gravel, brown, coarse sand, fine to coarse gravel, slightly clayey; oxidized, dry
4 - 7 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, slightly clayey; oxidized, dry
20 - 22 Gravel, brown-gray, medium, slightly clayey; saturated
22 - 29 Sand and gravel, brown-gray, coarse sand, medium gravel, slightly clayey; saturated

TEST HOLE NUMBER: 192
LOCATION: 117N-51W-16AADA
LEGAL LOCATION: NE SE NE NE sec. 16, T. 117 N., R. 51 W.

- 6 - 17 Sand, black, fine to coarse, very clayey; saturated at 9 feet; some fine gravel; increasing clay content with depth

TEST HOLE NUMBER: 193
LOCATION: 117N-51W-17BAAB
LEGAL LOCATION: NW NE NE NW sec. 17, T. 117 N., R. 51 W.

- 5 - 15 Sand and gravel, brown, medium to coarse sand, fine to coarse gravel, slightly clayey; oxidized, dry
- 15 - 21 Sand, brown, fine to medium, clayey; oxidized, saturated at 19 feet; gravel layer at 17 to 18 feet

TEST HOLE NUMBER: 194
LOCATION: 117N-51W-17BCCC
LEGAL LOCATION: SW SW SW NW sec. 17, T. 117 N., R. 51 W.

- 1 - 19 Gravel, sandy, silty, pebbly, poorly sorted

TEST HOLE NUMBER: 195
LOCATION: 117N-51W-18ADDD 1
LEGAL LOCATION: SE SE SE NE sec. 18, T. 117 N., R. 51 W.

- 2 - 6 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, slightly clayey; oxidized, moist
- 6 - 9 Sand, brown, medium, slightly clayey; oxidized, saturated; some coarse sand
- 9 - 13 Sand, dark-gray, fine to medium, clayey; saturated
- 13 - 16 Sand and gravel(?); no return; abandoned hole at 16 feet due to boulders

TEST HOLE NUMBER: 196
LOCATION: 117N-51W-18ADDD 2
LEGAL LOCATION: SE SE SE NE sec. 18, T. 117 N., R. 51 W.

- 2 - 8 Sand, brown, fine to coarse, slightly clayey; oxidized, moist; some fine gravel
- 8 - 11 Sand, dark-brown, medium to coarse; oxidized, saturated; some fine to coarse gravel
- 11 - 25 Sand, dark-gray, medium to coarse; unoxidized, saturated; some fine to medium gravel, little clay; gravel layer from 19 to 20 feet

TEST HOLE NUMBER: 197
LOCATION: 117N-51W-18CBAA
LEGAL LOCATION: NE NE NW SW sec. 18, T. 117 N., R. 51 W.

- 1 - 14 Sand and gravel, light-brown, fine to coarse sand, fine to coarse gravel, clayey, poorly sorted; less clay with depth
- 14 - 25 Sand, brown, medium to coarse, slightly clayey, gravelly from 20 to 21 feet; oxidized, saturated at 15 feet; some fine to coarse gravel

TEST HOLE NUMBER: 198
LOCATION: 117N-51W-19ADDD

LEGAL LOCATION: SE SE SE NE sec. 19, T. 117 N., R. 51 W.

- 2 - 5 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, slightly clayey; oxidized, dry
- 5 - 7 Sand and gravel, brown, coarse sand, fine gravel, clayey; oxidized, damp

TEST HOLE NUMBER: 199

LOCATION: 117N-51W-19CBBB

LEGAL LOCATION: NW NW NW SW sec. 19, T. 117 N., R. 51 W.

- 1 - 17 Gravel, fine to medium

TEST HOLE NUMBER: 200

LOCATION: 117N-51W-23BAAB

LEGAL LOCATION: NW NE NE NW sec. 23, T. 117 N., R. 51 W.

- 5 - 6 Gravel, brown, fine to coarse, very clayey, sandy; oxidized, moist

TEST HOLE NUMBER: 201

LOCATION: 117N-51W-24DDDD

LEGAL LOCATION: SE SE SE SE sec. 24, T. 117 N., R. 51 W.

PRELIMINARY LOG -- SUBJECT TO CHANGE

- 11 - 16 Sand, tan-brown, fine to medium, very clayey, silty; some pebbles, saturated

TEST HOLE NUMBER: 202

LOCATION: 117N-51W-26DADD

LEGAL LOCATION: SE SE NE SE sec. 26, T. 117 N., R. 51 W.

- 12 - 25 Sand and gravel, brown, fine to coarse sand, fine gravel, very clayey; oxidized, moist

TEST HOLE NUMBER: 203

LOCATION: 117N-51W-31AADD

LEGAL LOCATION: SE SE NE NE sec. 31, T. 117 N., R. 51 W.

- 1 - 3 Sand and gravel, brown, medium to coarse sand, fine to coarse gravel, slightly clayey; oxidized, dry
- 3 - 7 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, clayey; oxidized, moist

TEST HOLE NUMBER: 204

LOCATION: 117N-51W-36BBBB

LEGAL LOCATION: NW NW NW NW sec. 36, T. 117 N., R. 51 W.

- 5 - 18 Sand, yellow-brown, fine to coarse, clayey; oxidized, moist
- 18 - 21 Gravel, brown, coarse, clayey, sandy; poor return
- 21 - 26 Sand, brown, medium to coarse; oxidized, saturated; some fine gravel

TEST HOLE NUMBER: 205

LOCATION: 117N-52W-03DDAA 1

LEGAL LOCATION: NE NE SE SE sec. 03, T. 117 N., R. 52 W.

- 1 - 4 Gravel, tan-brown, fine to coarse, very sandy; oxidized, dry
- 8 - 9 Gravel, red-brown, fine to coarse, sandy, clayey; oxidized
- 9 - 12 Gravel; hit boulder abandoned hole at 12 feet

TEST HOLE NUMBER: 206
LOCATION: 117N-52W-03DDAA 2
LEGAL LOCATION: NE NE SE SE sec. 03, T. 117 N., R. 52 W.

1 - 4 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, very clayey; oxidized, damp

TEST HOLE NUMBER: 207
LOCATION: 117N-52W-03DDCC
LEGAL LOCATION: SW SW SE SE sec. 03, T. 117 N., R. 52 W.

7 - 12 Sand and gravel, brown, medium sand, fine to medium gravel, clayey; oxidized, moist
12 - 14 Sand and gravel, brown, medium sand, fine to medium gravel, very clayey; oxidized, saturated

TEST HOLE NUMBER: 208
LOCATION: 117N-52W-05BBBB
LEGAL LOCATION: NW NW NW NW sec. 05, T. 117 N., R. 52 W.

5 - 6 Sand, gray, brown, fine; moist, some pebbles
6 - 18 Sand, brown, medium to coarse; wet
18 - 30 Sand, light-grayish-brown, fine to medium

TEST HOLE NUMBER: 209
LOCATION: 117N-52W-05CDDD
LEGAL LOCATION: SE SE SE SW sec. 05, T. 117 N., R. 52 W.

0 - 4 Gravel
4 - 10 Gravel; with silt

TEST HOLE NUMBER: 210
LOCATION: 117N-52W-05DCDD
LEGAL LOCATION: SE SE SW SE sec. 05, T. 117 N., R. 52 W.

6 - 8 Sand and gravel; dry
10 - 20 Sand and gravel, medium to coarse; dry

TEST HOLE NUMBER: 211
LOCATION: 117N-52W-06ACC
LEGAL LOCATION: SW SW NE sec. 06, T. 117 N., R. 52 W.

3 - 17 Sand and gravel, fine to very coarse; boulders
20 - 63 Sand and gravel, fine to coarse; cemented

TEST HOLE NUMBER: 212
LOCATION: 117N-52W-06ADDC
LEGAL LOCATION: SW SE SE NE sec. 06, T. 117 N., R. 52 W.

5 - 15 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 213
LOCATION: 117N-52W-06BAA

LEGAL LOCATION: NE NE NW sec. 06, T. 117 N., R. 52 W.

6 - 19 Sand, medium; gravel, fine
19 - 59 Sand and gravel

TEST HOLE NUMBER: 214

LOCATION: 117N-52W-06BBAB

LEGAL LOCATION: NW NE NW NW sec. 06, T. 117 N., R. 52 W.

3 - 10 Sand and gravel, medium to very coarse
11 - 22 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 215

LOCATION: 117N-52W-06BCCC

LEGAL LOCATION: SW SW SW NW sec. 06, T. 117 N., R. 52 W.

8 - 20 Sand, fine to coarse; cemented

TEST HOLE NUMBER: 216

LOCATION: 117N-52W-06DCC

LEGAL LOCATION: SW SW SE sec. 06, T. 117 N., R. 52 W.

10 - 15 Sand, fine to medium
15 - 18 Sand and gravel, fine to coarse; boulders
18 - 31 Sand, fine

TEST HOLE NUMBER: 217

LOCATION: 117N-52W-06DCCC

LEGAL LOCATION: SW SW SW SE sec. 06, T. 117 N., R. 52 W.

2 - 5 Sand and gravel, brown, medium to coarse sand, fine gravel, slightly clayey; oxidized, dry
5 - 14 Sand, brown, medium, slightly clayey; oxidized, saturated; few fine pebbles
14 - 34 Sand, brown, fine, slightly clayey; oxidized, saturated; increased clay content below 24 feet

TEST HOLE NUMBER: 218

LOCATION: 117N-52W-06DDD

LEGAL LOCATION: SE SE SE sec. 06, T. 117 N., R. 52 W.

0 - 9 Sand, fine to coarse; some clay
9 - 29 Sand; some clay

TEST HOLE NUMBER: 219

LOCATION: 117N-52W-06DDDB

LEGAL LOCATION: NW SE SE SE sec. 06, T. 117 N., R. 52 W.

8 - 16 Sand, fine
25 - 35 Gravel, iron-stain

TEST HOLE NUMBER: 220

LOCATION: 117N-52W-06DDDD

LEGAL LOCATION: SE SE SE SE sec. 06, T. 117 N., R. 52 W.

2 - 15 Sand and gravel, medium, clayey
20 - 27 Sand and gravel, brown, coarse

TEST HOLE NUMBER: 221

LOCATION: 117N-52W-07AAAA

LEGAL LOCATION: NE NE NE NE sec. 07, T. 117 N., R. 52 W.

0 - 1 Sand, brown, coarse; clean
1 - 4 Sand, medium-brown; scattered pea-sized gravel; clean
4 - 13 Gravel, brown, pea-sized
13 - 19 Sand, coarse
19 - 26 Gravel, sandy; with high clay content

TEST HOLE NUMBER: 222

LOCATION: 117N-52W-07AAAB

LEGAL LOCATION: NW NE NE NE sec. 07, T. 117 N., R. 52 W.

2 - 15 Sand and gravel
21 - 30 Gravel

TEST HOLE NUMBER: 223

LOCATION: 117N-52W-07BCC

LEGAL LOCATION: SW SW NW sec. 07, T. 117 N., R. 52 W.

3 - 22 Sand and gravel, medium to very coarse; boulders

TEST HOLE NUMBER: 224

LOCATION: 117N-52W-07CCCA

LEGAL LOCATION: NE SW SW SW sec. 07, T. 117 N., R. 52 W.

2 - 8 Sand

TEST HOLE NUMBER: 225

LOCATION: 117N-52W-08BDCC

LEGAL LOCATION: SW SW SE NW sec. 08, T. 117 N., R. 52 W.

3 - 18 Sand
21 - 38 Gravel, coarse

TEST HOLE NUMBER: 226

LOCATION: 117N-52W-09DAAA

LEGAL LOCATION: NE NE NE SE sec. 09, T. 117 N., R. 52 W.

4 - 21 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 227

LOCATION: 117N-52W-10BCCB

LEGAL LOCATION: NW SW SW NW sec. 10, T. 117 N., R. 52 W.

3 - 5 Gravel, dark-brown-black, medium to coarse, very clayey, slightly sandy; oxidized, moist

TEST HOLE NUMBER: 228
LOCATION: 117N-52W-12AAAA
LEGAL LOCATION: NE NE NE NE sec. 12, T. 117 N., R. 52 W.

12 - 20 Sand and gravel
20 - 31 Sand

TEST HOLE NUMBER: 229
LOCATION: 117N-52W-13DDDD
LEGAL LOCATION: SE SE SE SE sec. 13, T. 117 N., R. 52 W.

7 - 23 Gravel and sand; dry
23 - 40 Gravel; silt, dark-gray

TEST HOLE NUMBER: 230
LOCATION: 117N-52W-13DDDD 1
LEGAL LOCATION: SE SE SE SE sec. 13, T. 117 N., R. 52 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

2 - 15 Gravel, coarse

TEST HOLE NUMBER: 231
LOCATION: 117N-52W-16AAAA 2
LEGAL LOCATION: NE NE NE NE sec. 16, T. 117 N., R. 52 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

3 - 23 Sand and gravel, medium sand, medium to coarse gravel

TEST HOLE NUMBER: 232
LOCATION: 117N-52W-16AAAB
LEGAL LOCATION: NW NE NE NE sec. 16, T. 117 N., R. 52 W.

4 - 15 Sand and gravel, black to dark-gray, medium to coarse sand, fine gravel, slightly clayey;
saturated

TEST HOLE NUMBER: 233
LOCATION: 117N-52W-16AAAC
LEGAL LOCATION: SW NE NE NE sec. 16, T. 117 N., R. 52 W.

4 - 12 Gravel; boulders

TEST HOLE NUMBER: 234
LOCATION: 117N-52W-16BBBA
LEGAL LOCATION: NE NW NW NW sec. 16, T. 117 N., R. 52 W.

2 - 6 Sand, and gravel, brown, fine to coarse sand, fine to medium gravel, clayey; oxidized, dry

TEST HOLE NUMBER: 235
LOCATION: 117N-52W-17BBBA
LEGAL LOCATION: NE NW NW NW sec. 17, T. 117 N., R. 52 W.

4 - 11 Sand, brown, fine, very clayey; oxidized, moist; saturated at 9 feet

TEST HOLE NUMBER: 236
LOCATION: 117N-52W-17BBBB
LEGAL LOCATION: NW NW NW NW sec. 17, T. 117 N., R. 52 W.

4 - 5 Gravel and clay

TEST HOLE NUMBER: 237
LOCATION: 117N-52W-18BBBB
LEGAL LOCATION: NW NW NW NW sec. 18, T. 117 N., R. 52 W.

4 - 5 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 238
LOCATION: 117N-52W-22ABBB
LEGAL LOCATION: NW NW NW NE sec. 22, T. 117 N., R. 52 W.

1 - 2 Sand and gravel, brown, fine to medium sand, fine to medium gravel, clayey; oxidized, dry

TEST HOLE NUMBER: 239
LOCATION: 117N-52W-22BABA
LEGAL LOCATION: NE NW NE NW sec. 22, T. 117 N., R. 52 W.

1 - 3 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, very clayey; oxidized, dry
6 - 11 Sand and gravel, brown, medium to coarse sand, fine gravel, clayey; oxidized, saturated

TEST HOLE NUMBER: 240
LOCATION: 117N-52W-22CCCC
LEGAL LOCATION: SW SW SW SW sec. 22, T. 117 N., R. 52 W.

11 - 28 Gravel, fine to coarse, very clayey, sandy; oxidized, dry; saturated at 13 feet; some clay lenses

TEST HOLE NUMBER: 241
LOCATION: 117N-52W-25BBA
LEGAL LOCATION: NE NW NW sec. 25, T. 117 N., R. 52 W.

2 - 18 Sand, yellow and blue

TEST HOLE NUMBER: 242
LOCATION: 117N-52W-25CBCC
LEGAL LOCATION: SW SW NW SW sec. 25, T. 117 N., R. 52 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

0 - 12 Sand and rocks

TEST HOLE NUMBER: 243
LOCATION: 117N-52W-25DADD
LEGAL LOCATION: SE SE NE SE sec. 25, T. 117 N., R. 52 W.

1 - 4 Sand and gravel, light-brown, medium to coarse sand, medium to coarse gravel, slightly clayey; oxidized, moist

TEST HOLE NUMBER: 244
LOCATION: 117N-52W-26AADD
LEGAL LOCATION: SE SE NE NE sec. 26, T. 117 N., R. 52 W.

- 0 - 2 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, clayey; oxidized, moist
- 11 - 15 Sand, brown, medium, clayey; oxidized, moist
- 20 - 21 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, very clayey; oxidized, dry
- 22 - 24 Sand, brown, medium, clayey; oxidized, moist

TEST HOLE NUMBER: 245
LOCATION: 117N-52W-26BABA
LEGAL LOCATION: NE NW NE NW sec. 26, T. 117 N., R. 52 W.

- 1 - 4 Gravel, brown, medium to coarse, clayey, sandy; oxidized, dry
- 4 - 7 Sand and gravel, brown, fine to coarse sand, medium to coarse gravel, clayey; oxidized, dry

TEST HOLE NUMBER: 246
LOCATION: 117N-52W-26BBBB
LEGAL LOCATION: NW NW NW NW sec. 26, T. 117 N., R. 52 W.

- 6 - 8 Gravel, medium; lots of chalk
- 8 - 12 Gravel and sand; water at 12 feet
- 12 - 22 Gravel and silt, blue silt

TEST HOLE NUMBER: 247
LOCATION: 117N-52W-27AA
LEGAL LOCATION: NE NE sec. 27, T. 117 N., R. 52 W.

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- 2 - 30 Gravel

TEST HOLE NUMBER: 248
LOCATION: 117N-52W-27AAAA
LEGAL LOCATION: NE NE NE NE sec. 27, T. 117 N., R. 52 W.

- 4 - 22 Gravel, fine to medium, sandy

TEST HOLE NUMBER: 249
LOCATION: 117N-52W-28DDDC
LEGAL LOCATION: SW SE SE SE sec. 28, T. 117 N., R. 52 W.

- 13 - 17 Gravel, black, fine to coarse, very clayey, silty; dry to moist; poor return
- 17 - 22 Gravel, red-brown, fine to coarse, very clayey, slightly sandy; saturated at 20 feet; increasing clay content with depth

TEST HOLE NUMBER: 250
LOCATION: 117N-52W-30BCC
LEGAL LOCATION: SW SW NW sec. 30, T. 117 N., R. 52 W.

- 2 - 11 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 251
LOCATION: 117N-52W-30CBD
LEGAL LOCATION: SE NW SW sec. 30, T. 117 N., R. 52 W.

2 - 26 Sand and gravel, fine to coarse; packed

TEST HOLE NUMBER: 252
LOCATION: 117N-52W-31CAB
LEGAL LOCATION: NW NE SW sec. 31, T. 117 N., R. 52 W.

6 - 10 Sand and gravel, fine to coarse; sea shells

TEST HOLE NUMBER: 253
LOCATION: 117N-52W-31CBC
LEGAL LOCATION: SW NW SW sec. 31, T. 117 N., R. 52 W.

3 - 21 Sand and gravel, fine to very coarse

TEST HOLE NUMBER: 254
LOCATION: 117N-52W-32CDDDB
LEGAL LOCATION: NW SE SE SW sec. 32, T. 117 N., R. 52 W.

9 - 44 Gravel, coarse

TEST HOLE NUMBER: 255
LOCATION: 117N-52W-32DDCC
LEGAL LOCATION: SW SW SE SE sec. 32, T. 117 N., R. 52 W.

0 - 14 Gravel, brown; clay; poorly sorted
14 - 29 Gravel, coarse to fine; some clay

TEST HOLE NUMBER: 256
LOCATION: 117N-52W-33CBCC
LEGAL LOCATION: SW SW NW SW sec. 33, T. 117 N., R. 52 W.

0 - 24 Sand and gravel, clayey
24 - 44 Gravel, medium; some clay

TEST HOLE NUMBER: 257
LOCATION: 117N-52W-33DDA
LEGAL LOCATION: NE SE SE sec. 33, T. 117 N., R. 52 W.

0 - 4 Gravel

TEST HOLE NUMBER: 258
LOCATION: 117N-52W-34BABA
LEGAL LOCATION: NE NW NE NW sec. 34, T. 117 N., R. 52 W.

1 - 10 Sand and gravel, brown, fine sand, medium to coarse gravel, slightly clayey; oxidized, dry; clay layer at 3.5 to 4 feet
10 - 14 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, clayey; oxidized, saturated

TEST HOLE NUMBER: 259
LOCATION: 117N-52W-34BABA 1
LEGAL LOCATION: NE NW NE NW sec. 34, T. 117 N., R. 52 W.

6 - 10 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 260
LOCATION: 117N-52W-34BABA 2
LEGAL LOCATION: NE NW NE NW sec. 34, T. 117 N., R. 52 W.

2 - 11 Gravel, coarse to very coarse

TEST HOLE NUMBER: 261
LOCATION: 117N-52W-35ABAB
LEGAL LOCATION: NW NE NW NE sec. 35, T. 117 N., R. 52 W.

2 - 5 Sand and gravel, brown, medium to coarse sand, fine to coarse gravel, clayey; oxidized, dry
5 - 6 Sand, brown, medium, clayey; oxidized, dry; few fine pebbles
6 - 7 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, clayey; oxidized, dry
7 - 8 Sand, brown, medium, clayey; oxidized, dry; few fine pebbles
8 - 10 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, clayey; oxidized, dry
10 - 15 Gravel, brown, coarse, slightly clayey; oxidized, dry
15 - 23 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, clayey; oxidized, moist

TEST HOLE NUMBER: 262
LOCATION: 117N-52W-35ABBB
LEGAL LOCATION: NW NW NW NE sec. 35, T. 117 N., R. 52 W.

10 - 20 Gravel, sandy; some clay

TEST HOLE NUMBER: 263
LOCATION: 117N-53W-01BBCA
LEGAL LOCATION: NE SW NW NW sec. 01, T. 117 N., R. 53 W.

2 - 18 Sand, coarse

TEST HOLE NUMBER: 264
LOCATION: 117N-53W-01CDD
LEGAL LOCATION: SE SE SW sec. 01, T. 117 N., R. 53 W.

5 - 7 Sand and gravel, medium to very coarse
13 - 23 Sand and gravel, medium to very coarse; boulders

TEST HOLE NUMBER: 265
LOCATION: 117N-53W-02CCCC
LEGAL LOCATION: SW SW SW SW sec. 02, T. 117 N., R. 53 W.

1 - 12 Sand and gravel, coarse
12 - 27 Gravel

TEST HOLE NUMBER: 266
LOCATION: 117N-53W-02DA

LEGAL LOCATION: NE SE sec. 02, T. 117 N., R. 53 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

2 - 34 Gravel

TEST HOLE NUMBER: 267

LOCATION: 117N-53W-02DAA

LEGAL LOCATION: NE NE SE sec. 02, T. 117 N., R. 53 W.

0 - 14 Sand and gravel; some clay

14 - 19 Sand and gravel

19 - 24 Sand and gravel; some clay

TEST HOLE NUMBER: 268

LOCATION: 117N-53W-02DDDD

LEGAL LOCATION: SE SE SE SE sec. 02, T. 117 N., R. 53 W.

6 - 39 Sand, gray, coarse to fine; some coal

TEST HOLE NUMBER: 269

LOCATION: 117N-53W-03BBBB

LEGAL LOCATION: NW NW NW NW sec. 03, T. 117 N., R. 53 W.

2 - 28 Sand and gravel

TEST HOLE NUMBER: 270

LOCATION: 117N-53W-04DDDD

LEGAL LOCATION: SE SE SE SE sec. 04, T. 117 N., R. 53 W.

12 - 19 Sand, medium; with fine gravel

19 - 29 Sand, medium; some clay intermixed; occasional coarse gravel

TEST HOLE NUMBER: 271

LOCATION: 117N-53W-05DDCC

LEGAL LOCATION: SW SW SE SE sec. 05, T. 117 N., R. 53 W.

8 - 20 Gravel and sand

20 - 30 Sand and silt; dry

TEST HOLE NUMBER: 272

LOCATION: 117N-53W-05DDD

LEGAL LOCATION: SE SE SE sec. 05, T. 117 N., R. 53 W.

0 - 17 Gravel, fine to medium, sandy

TEST HOLE NUMBER: 273

LOCATION: 117N-53W-07AAAA

LEGAL LOCATION: NE NE NE NE sec. 07, T. 117 N., R. 53 W.

2 - 13 Sand and gravel

TEST HOLE NUMBER: 274
LOCATION: 117N-53W-07BCBB
LEGAL LOCATION: NW NW SW NW sec. 07, T. 117 N., R. 53 W.

2 - 4	Gravel, medium to fine
4 - 7	Gravel, fine; sand, medium to fine, washed
7 - 11	Gravel, coarse
11 - 24	Sand, coarse

TEST HOLE NUMBER: 275
LOCATION: 117N-53W-07CC
LEGAL LOCATION: SW SW sec. 07, T. 117 N., R. 53 W.

9 - 11	Sand, medium
11 - 27	Sand, medium; gravel

TEST HOLE NUMBER: 276
LOCATION: 117N-53W-08AAAB
LEGAL LOCATION: NW NE NE NE sec. 08, T. 117 N., R. 53 W.

5 - 19	Sand, medium to coarse; coarse gravel
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TEST HOLE NUMBER: 277
LOCATION: 117N-53W-08CBBB
LEGAL LOCATION: NW NW NW SW sec. 08, T. 117 N., R. 53 W.

2 - 23	Sand, silty, pebbly (outwash)
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TEST HOLE NUMBER: 278
LOCATION: 117N-53W-09CBCB
LEGAL LOCATION: NW SW NW SW sec. 09, T. 117 N., R. 53 W.

2 - 23	Sand and gravel
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TEST HOLE NUMBER: 279
LOCATION: 117N-53W-09DDA
LEGAL LOCATION: NE SE SE sec. 09, T. 117 N., R. 53 W.

3 - 13	Sand and gravel, fine to very coarse
14 - 20	Sand and gravel, fine to coarse

TEST HOLE NUMBER: 280
LOCATION: 117N-53W-09DDDD
LEGAL LOCATION: SE SE SE SE sec. 09, T. 117 N., R. 53 W.

2 - 7	Sand; with black silt
7 - 9	Sand, medium; gravel; silt
9 - 50	Gravel, fine; sand, medium; clay

TEST HOLE NUMBER: 281
LOCATION: 117N-53W-10BBBB

LEGAL LOCATION: NW NW NW NW sec. 10, T. 117 N., R. 53 W.

1 - 7 Sand, coarse
7 - 24 Sand, brown, fine to coarse
24 - 31 Sand, coarse

TEST HOLE NUMBER: 282
LOCATION: 117N-53W-10BCB
LEGAL LOCATION: NW SW NW sec. 10, T. 117 N., R. 53 W.

5 - 30 Sand and gravel, fine to medium

TEST HOLE NUMBER: 283
LOCATION: 117N-53W-10CDAD
LEGAL LOCATION: SE NE SE SW sec. 10, T. 117 N., R. 53 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 20 Sand and gravel, yellow-brown, medium sand to fine gravel

TEST HOLE NUMBER: 284
LOCATION: 117N-53W-10DDD
LEGAL LOCATION: SE SE SE sec. 10, T. 117 N., R. 53 W.

5 - 13 Sand and gravel, medium to coarse
17 - 38 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 285
LOCATION: 117N-53W-11AAA
LEGAL LOCATION: NE NE NE sec. 11, T. 117 N., R. 53 W.

10 - 20 Sand and gravel, medium to very coarse; boulders
20 - 42 Sand and gravel, fine to medium

TEST HOLE NUMBER: 286
LOCATION: 117N-53W-11ACC
LEGAL LOCATION: SW SW NE sec. 11, T. 117 N., R. 53 W.

8 - 28 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 287
LOCATION: 117N-53W-11BAB 2
LEGAL LOCATION: NW NE NW sec. 11, T. 117 N., R. 53 W.

8 - 17 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 288
LOCATION: 117N-53W-11BBBB
LEGAL LOCATION: NW NW NW SW sec. 11, T. 117 N., R. 53 W.

9 - 37 Gravel, fine to medium

TEST HOLE NUMBER: 289
LOCATION: 117N-53W-11CDC
LEGAL LOCATION: SW SE SW sec. 11, T. 117 N., R. 53 W.

7 - 28 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 290
LOCATION: 117N-53W-11DDDA
LEGAL LOCATION: NE SE SE SE sec. 11, T. 117 N., R. 53 W.

1 - 20 Sand and gravel

TEST HOLE NUMBER: 291
LOCATION: 117N-53W-11DDDD
LEGAL LOCATION: SE SE SE SE sec. 11, T. 117 N., R. 53 W.

6 - 10 Sand, black; with silt; water
10 - 50 Gravel and silt, fine gravel and dark-brown silt

TEST HOLE NUMBER: 292
LOCATION: 117N-53W-12AAAA
LEGAL LOCATION: NE NE NE NE sec. 12, T. 117 N., R. 53 W.

7 - 15 Sand, light-gray, fine
15 - 42 Sand, fine to coarse

TEST HOLE NUMBER: 293
LOCATION: 117N-53W-12ACC
LEGAL LOCATION: SW SW NE sec. 12, T. 117 N., R. 53 W.

3 - 22 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 294
LOCATION: 117N-53W-12BCC 1
LEGAL LOCATION: SW SW NW sec. 12, T. 117 N., R. 53 W.

9 - 29 Sand; some clay

TEST HOLE NUMBER: 295
LOCATION: 117N-53W-12BCC 2
LEGAL LOCATION: SW SW NW sec. 12, T. 117 N., R. 53 W.

7 - 23 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 296
LOCATION: 117N-53W-12CCD
LEGAL LOCATION: SE SW SW sec. 12, T. 117 N., R. 53 W.

7 - 23 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 297
LOCATION: 117N-53W-12CCDD

LEGAL LOCATION: SE SE SW SW sec. 12, T. 117 N., R. 53 W.

3 - 8 Sand, brown, fine to medium, silty; some clay, saturated at 7 feet

TEST HOLE NUMBER: 298

LOCATION: 117N-53W-12CD

LEGAL LOCATION: SE SW sec. 12, T. 117 N., R. 53 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

1 - 17 Sand, yellow
18 - 26 Gravel, coarse

TEST HOLE NUMBER: 299

LOCATION: 117N-53W-12CDD

LEGAL LOCATION: SE SE SW sec. 12, T. 117 N., R. 53 W.

3 - 15 Sand and gravel, medium to very coarse; boulders

TEST HOLE NUMBER: 300

LOCATION: 117N-53W-12CDDD

LEGAL LOCATION: SE SE SE SW sec. 12, T. 117 N., R. 53 W.

1 - 18 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 301

LOCATION: 117N-53W-12DCC

LEGAL LOCATION: SW SW SE sec. 12, T. 117 N., R. 53 W.

0 - 9 Sand and gravel; some clay
9 - 39 Sand and gravel

TEST HOLE NUMBER: 302

LOCATION: 117N-53W-13DCD

LEGAL LOCATION: SE SW SE sec. 13, T. 117 N., R. 53 W.

2 - 3 Sand

TEST HOLE NUMBER: 303

LOCATION: 117N-53W-14AAA

LEGAL LOCATION: NE NE NE sec. 14, T. 117 N., R. 53 W.

6 - 25 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 304

LOCATION: 117N-53W-14ACC

LEGAL LOCATION: SW SW NE sec. 14, T. 117 N., R. 53 W.

2 - 20 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 305
LOCATION: 117N-53W-14BAA
LEGAL LOCATION: NE NE NW sec. 14, T. 117 N., R. 53 W.

5 - 25 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 306
LOCATION: 117N-53W-14BCC
LEGAL LOCATION: SW SW NW sec. 14, T. 117 N., R. 53 W.

1 - 17 Sand and gravel, fine to coarse; sea shells
17 - 24 Sand, black, fine to medium

TEST HOLE NUMBER: 307
LOCATION: 117N-53W-14CBB
LEGAL LOCATION: NW NW SW sec. 14, T. 117 N., R. 53 W.

2 - 15 Sand and gravel, medium to very coarse
15 - 18 Sand and gravel, medium to coarse
18 - 26 Sand, medium to coarse; boulders

TEST HOLE NUMBER: 308
LOCATION: 117N-53W-14CBC
LEGAL LOCATION: SW NW SW sec. 14, T. 117 N., R. 53 W.

3 - 21 Sand and gravel, fine to very coarse

TEST HOLE NUMBER: 309
LOCATION: 117N-53W-14CBCD
LEGAL LOCATION: SE SW NW SW sec. 14, T. 117 N., R. 53 W.

6 - 26 Sand

TEST HOLE NUMBER: 310
LOCATION: 117N-53W-14CCC
LEGAL LOCATION: SW SW SW sec. 14, T. 117 N., R. 53 W.

1 - 12 Sand and gravel, fine to coarse
12 - 16 Sand, coarse

TEST HOLE NUMBER: 311
LOCATION: 117N-53W-14DAA
LEGAL LOCATION: NE NE SE sec. 14, T. 117 N., R. 53 W.

0 - 4 Sand, coarse; some clay
4 - 22 Sand, coarse

TEST HOLE NUMBER: 312
LOCATION: 117N-53W-14DDDA
LEGAL LOCATION: NE SE SE SE sec. 14, T. 117 N., R. 53 W.

3 - 14 Sand

TEST HOLE NUMBER: 313
LOCATION: 117N-53W-14DDDD
LEGAL LOCATION: SE SE SE SE sec. 14, T. 117 N., R. 53 W.

1 - 13 Sand and gravel

TEST HOLE NUMBER: 314
LOCATION: 117N-53W-15DAAD
LEGAL LOCATION: SE NE NE SE sec. 15, T. 117 N., R. 53 W.
PRELIMINARY LOG - SUBJECT TO CHANGE

1 - 24 Sand and gravel, yellow-brown grading to gray, medium sand to 3/4-inch gravel; clam shell fragments from a layer(?) at about 12 feet

TEST HOLE NUMBER: 315
LOCATION: 117N-53W-17ABAB
LEGAL LOCATION: NW NE NW NE sec. 17, T. 117 N., R. 53 W.

3 - 18 Sand and gravel

TEST HOLE NUMBER: 316
LOCATION: 117N-53W-18AAAA 1
LEGAL LOCATION: NE NE NE NE sec. 18, T. 117 N., R. 53 W.

2 - 12 Sand and gravel

TEST HOLE NUMBER: 317
LOCATION: 117N-53W-18AAAA 2
LEGAL LOCATION: NE NE NE NE sec. 18, T. 117 N., R. 53 W.

2 - 8 Sand, medium to coarse

TEST HOLE NUMBER: 318
LOCATION: 117N-53W-18AADB
LEGAL LOCATION: NW SE NE NE sec. 18, T. 117 N., R. 53 W.

1 - 7 Gravel
7 - 12 Sand, medium

TEST HOLE NUMBER: 319
LOCATION: 117N-53W-18BBCB
LEGAL LOCATION: NW SW NW NW sec. 18, T. 117 N., R. 53 W.

4 - 6 Gravel, coarse

TEST HOLE NUMBER: 320
LOCATION: 117N-53W-18CCCC
LEGAL LOCATION: SW SW SW SW sec. 18, T. 117 N., R. 53 W.

1 - 4 Sand and gravel

TEST HOLE NUMBER: 321
LOCATION: 117N-53W-18DDCA
LEGAL LOCATION: NE SW SE SE sec. 18, T. 117 N., R. 53 W.

3 - 15 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 322
LOCATION: 117N-53W-19BBBC
LEGAL LOCATION: SW NW NW NW sec. 19, T. 117 N., R. 53 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 2 Sand, medium to coarse
3 - 5 Gravel
5 - 50 Sand and gravel

TEST HOLE NUMBER: 323
LOCATION: 117N-53W-22CDC
LEGAL LOCATION: SW SE SW sec. 22, T. 117 N., R. 53 W.

10 - 17 Sand and gravel, fine to coarse
22 - 23 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 324
LOCATION: 117N-53W-22DCC
LEGAL LOCATION: SW SW SE sec. 22, T. 117 N., R. 53 W.

3 - 14 Sand, yellow, coarse

TEST HOLE NUMBER: 325
LOCATION: 117N-53W-22DDC
LEGAL LOCATION: SW SE SE sec. 22, T. 117 N., R. 53 W.

4 - 16 Sand, blue, fine

TEST HOLE NUMBER: 326
LOCATION: 117N-53W-23AA
LEGAL LOCATION: NE NE sec. 23, T. 117 N., R. 53 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

2 - 9 Sand, yellow
9 - 18.5 Sand, coarse

TEST HOLE NUMBER: 327
LOCATION: 117N-53W-23AAA
LEGAL LOCATION: NE NE NE sec. 23, T. 117 N., R. 53 W.

3 - 16 Sand; packed

TEST HOLE NUMBER: 328
LOCATION: 117N-53W-23AAAA

LEGAL LOCATION: NE NE NE NE sec. 23, T. 117 N., R. 53 W.

2 - 18 Gravel, yellow, coarse

TEST HOLE NUMBER: 329

LOCATION: 117N-53W-23ABA

LEGAL LOCATION: NE NW NE sec. 23, T. 117 N., R. 53 W.

3 - 14 Sand; packed

TEST HOLE NUMBER: 330

LOCATION: 117N-53W-23ABAB

LEGAL LOCATION: NW NE NW NE sec. 23, T. 117 N., R. 53 W.

4 - 20 Sand, fine

TEST HOLE NUMBER: 331

LOCATION: 117N-53W-23ABB

LEGAL LOCATION: NW NW NE sec. 23, T. 117 N., R. 53 W.

3 - 10 Sand, fine
10 - 20 Sand and gravel, fine to coarse
20 - 26 Sand, coarse

TEST HOLE NUMBER: 332

LOCATION: 117N-53W-23ABD

LEGAL LOCATION: SE NW NE sec. 23, T. 117 N., R. 53 W.

3 - 15 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 333

LOCATION: 117N-53W-23ACB

LEGAL LOCATION: NW SW NE sec. 23, T. 117 N., R. 53 W.

3 - 28 Sand and gravel

TEST HOLE NUMBER: 334

LOCATION: 117N-53W-23ADD

LEGAL LOCATION: SE SE NE sec. 23, T. 117 N., R. 53 W.

2 - 8 Sand, coarse
8 - 13 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 335

LOCATION: 117N-53W-23BAB

LEGAL LOCATION: NW NE NW sec. 23, T. 117 N., R. 53 W.

1 - 8 Sand; packed
8 - 15 Sand, coarse
15 - 22 Sand and gravel, fine to coarse
22 - 27 Sand, coarse

TEST HOLE NUMBER: 336
LOCATION: 117N-53W-23BCC
LEGAL LOCATION: SW SW NW sec. 23, T. 117 N., R. 53 W.

6 - 17 Sand and gravel; dry

TEST HOLE NUMBER: 337
LOCATION: 117N-53W-24BAA
LEGAL LOCATION: NE NE NW sec. 24, T. 117 N., R. 53 W.

1 - 7 Sand; packed

TEST HOLE NUMBER: 338
LOCATION: 117N-53W-24BBA
LEGAL LOCATION: NE NW NW sec. 24, T. 117 N., R. 53 W.

1 - 17 Sand; packed

TEST HOLE NUMBER: 339
LOCATION: 117N-53W-24CCBB
LEGAL LOCATION: NW NW SW SW sec. 24, T. 117 N., R. 53 W.

5 - 11 Gravel, red to brown
16 - 35 Sand and gravel

TEST HOLE NUMBER: 340
LOCATION: 117N-53W-24CDA
LEGAL LOCATION: NE NE SE SW sec. 24, T. 117 N., R. 53 W.

5 - 14 Sand

TEST HOLE NUMBER: 341
LOCATION: 117N-53W-24CDC
LEGAL LOCATION: SW SE SW sec. 24, T. 117 N., R. 53 W.

3 - 10 Sand; packed
10 - 16 Sand, coarse

TEST HOLE NUMBER: 342
LOCATION: 117N-53W-24DCB
LEGAL LOCATION: NW SW SE sec. 24, T. 117 N., R. 53 W.

3 - 16 Gravel

TEST HOLE NUMBER: 343
LOCATION: 117N-53W-24DD
LEGAL LOCATION: SE SE sec. 24, T. 117 N., R. 53 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

4 - 13 Sand
14 - 15 Sand pocket

TEST HOLE NUMBER: 344
LOCATION: 117N-53W-24DDAC
LEGAL LOCATION: SW NE SE SE sec. 24, T. 117 N., R. 53 W.

4 - 12 Gravel

TEST HOLE NUMBER: 345
LOCATION: 117N-53W-25AAA
LEGAL LOCATION: NE NE NE sec. 25, T. 117 N., R. 53 W.

0 - 17 Sand; clay, poorly sorted
17 - 39 Sand; some clay

TEST HOLE NUMBER: 346
LOCATION: 117N-53W-25AAAB
LEGAL LOCATION: NW NE NE NE sec. 25, T. 117 N., R. 53 W.

1 - 13 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 347
LOCATION: 117N-53W-25ADD
LEGAL LOCATION: SE SE NE sec. 25, T. 117 N., R. 53 W.

2 - 7 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 348
LOCATION: 117N-53W-25BAB
LEGAL LOCATION: NW NE NW sec. 25, T. 117 N., R. 53 W.

2 - 8 Sand, coarse
8 - 15 Sand and gravel, fine to coarse
15 - 19 Sand, coarse

TEST HOLE NUMBER: 349
LOCATION: 117N-53W-25BAD 1
LEGAL LOCATION: SE NE NW sec. 25, T. 117 N., R. 53 W.

2 - 15 Sand, yellow and blue

TEST HOLE NUMBER: 350
LOCATION: 117N-53W-25BAD 2
LEGAL LOCATION: SE NE NW sec. 25, T. 117 N., R. 53 W.

2 - 17 Sand and gravel

TEST HOLE NUMBER: 351
LOCATION: 117N-53W-25BBA
LEGAL LOCATION: NE NW NW sec. 25, T. 117 N., R. 53 W.

3 - 13 Sand, yellow

TEST HOLE NUMBER: 352
LOCATION: 117N-53W-25BBB
LEGAL LOCATION: NW NW NW sec. 25, T. 117 N., R. 53 W.

3 - 25 Sand, yellow

TEST HOLE NUMBER: 353
LOCATION: 117N-53W-25BCA 1
LEGAL LOCATION: NE SW NW sec. 25, T. 117 N., R. 53 W.

3 - 7 Sand
7 - 16 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 354
LOCATION: 117N-53W-25BCA 2
LEGAL LOCATION: NE SW NW sec. 25, T. 117 N., R. 53 W.

2 - 5 Sand

TEST HOLE NUMBER: 355
LOCATION: 117N-53W-25BCC
LEGAL LOCATION: SW SW NW sec. 25, T. 117 N., R. 53 W.

3 - 17 Gravel, yellow, coarse

TEST HOLE NUMBER: 356
LOCATION: 117N-53W-25BCD 1
LEGAL LOCATION: SE SW NW sec. 25, T. 117 N., R. 53 W.

2 - 32 Sand, yellow and blue, very fine; some gravel

TEST HOLE NUMBER: 357
LOCATION: 117N-53W-25BCD 2
LEGAL LOCATION: SE SW NW sec. 25, T. 117 N., R. 53 W.

1 - 23 Sand and gravel, fine to very coarse

TEST HOLE NUMBER: 358
LOCATION: 117N-53W-25BDB 1
LEGAL LOCATION: NW SE NW sec. 25, T. 117 N., R. 53 W.

2 - 20 Sand, yellow and brown; gravel, coarse

TEST HOLE NUMBER: 359
LOCATION: 117N-53W-25BDB 2
LEGAL LOCATION: NW SE NW sec. 25, T. 117 N., R. 53 W.

3 - 20 Sand, yellow and blue

TEST HOLE NUMBER: 360
LOCATION: 117N-53W-25BDC

LEGAL LOCATION: SW SE NW sec. 25, T. 117 N., R. 53 W.

2 - 23 Sand, yellow, coarse

TEST HOLE NUMBER: 361

LOCATION: 117N-53W-25CAB

LEGAL LOCATION: NW NE SW sec. 25, T. 117 N., R. 53 W.

3 - 13 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 362

LOCATION: 117N-53W-25CAC

LEGAL LOCATION: SW NE SW sec. 25, T. 117 N., R. 53 W.

3 - 8 Sand and gravel, fine to coarse
8 - 11 Sand, fine
11 - 21 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 363

LOCATION: 117N-53W-25CBA

LEGAL LOCATION: NE NW SW sec. 25, T. 117 N., R. 53 W.

2 - 8 Sand, fine
8 - 15 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 364

LOCATION: 117N-53W-25CBC

LEGAL LOCATION: SW NW SW sec. 25, T. 117 N., R. 53 W.

3 - 18 Sand, yellow, coarse

TEST HOLE NUMBER: 365

LOCATION: 117N-53W-25CCB 1

LEGAL LOCATION: NW SW SW sec. 25, T. 117 N., R. 53 W.

4 - 9 Sand

TEST HOLE NUMBER: 366

LOCATION: 117N-53W-25CCB 2

LEGAL LOCATION: NW SW SW sec. 25, T. 117 N., R. 53 W.

2 - 19 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 367

LOCATION: 117N-53W-25CCC

LEGAL LOCATION: SW SW SW sec. 25, T. 117 N., R. 53 W.

2 - 13 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 368

LOCATION: 117N-53W-25CDA

LEGAL LOCATION: NE SE SW sec. 25, T. 117 N., R. 53 W.

2 - 15 Sand and gravel, fine to coarse; packed

TEST HOLE NUMBER: 369

LOCATION: 117N-53W-25DAAC

LEGAL LOCATION: SW NE NE SE sec. 25, T. 117 N., R. 53 W.

2 - 5 Sand, coarse

TEST HOLE NUMBER: 370

LOCATION: 117N-53W-25DBB

LEGAL LOCATION: NW NW SE sec. 25, T. 117 N., R. 53 W.

2 - 12 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 371

LOCATION: 117N-53W-25DBC

LEGAL LOCATION: SW NW SE sec. 25, T. 117 N., R. 53 W.

3 - 13 Sand and gravel, fine to coarse
13 - 16 Sand, fine

TEST HOLE NUMBER: 372

LOCATION: 117N-53W-25DCB 1

LEGAL LOCATION: NW SW SE sec. 25, T. 117 N., R. 53 W.

3 - 8 Sand, fine
8 - 15 Sand and gravel, fine to coarse
15 - 18 Sand, fine

TEST HOLE NUMBER: 373

LOCATION: 117N-53W-25DCB 2

LEGAL LOCATION: NW SW SE sec. 25, T. 117 N., R. 53 W.

2 - 8 Sand and gravel, fine to coarse
8 - 18 Sand, coarse
18 - 22 Gravel
22 - 26 Sand

TEST HOLE NUMBER: 374

LOCATION: 117N-53W-25DCB 3

LEGAL LOCATION: NW SW SE sec. 25, T. 117 N., R. 53 W.

2 - 15 Sand; packed

TEST HOLE NUMBER: 375

LOCATION: 117N-53W-25DCB 4

LEGAL LOCATION: NW SW SE sec. 25, T. 117 N., R. 53 W.

3 - 17 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 376
LOCATION: 117N-53W-25DCC
LEGAL LOCATION: SW SW SE sec. 25, T. 117 N., R. 53 W.

2 - 35 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 377
LOCATION: 117N-53W-25DDA
LEGAL LOCATION: NE SE SE sec. 25, T. 117 N., R. 53 W.

1 - 3 Sand and gravel, fine to very coarse

TEST HOLE NUMBER: 378
LOCATION: 117N-53W-26AAA
LEGAL LOCATION: NE NE NE sec. 26, T. 117 N., R. 53 W.

3 - 13 Sand, yellow, fine

TEST HOLE NUMBER: 379
LOCATION: 117N-53W-26AAB 1
LEGAL LOCATION: NW NE NE sec. 26, T. 117 N., R. 53 W.

2 - 22 Sand, yellow

TEST HOLE NUMBER: 380
LOCATION: 117N-53W-26AAB 2
LEGAL LOCATION: NW NE NE sec. 26, T. 117 N., R. 53 W.

0 - 23 Sand, yellow
23 - 33 Sand, blue

TEST HOLE NUMBER: 381
LOCATION: 117N-53W-26AAC
LEGAL LOCATION: SW NE NE sec. 26, T. 117 N., R. 53 W.

2 - 30 Sand, yellow, fine

TEST HOLE NUMBER: 382
LOCATION: 117N-53W-26AAD
LEGAL LOCATION: SE NE NE sec. 26, T. 117 N., R. 53 W.

2 - 14 Sand, yellow, fine

TEST HOLE NUMBER: 383
LOCATION: 117N-53W-26ABA
LEGAL LOCATION: NE NW NE sec. 26, T. 117 N., R. 53 W.

6 - 27 Sand, blue

TEST HOLE NUMBER: 384
LOCATION: 117N-53W-26ABB

LEGAL LOCATION: NW NW NE sec. 26, T. 117 N., R. 53 W.

0 - 3 Sand, yellow
3 - 18 Sand, blue
18 - 25 Sand, yellow

TEST HOLE NUMBER: 385
LOCATION: 117N-53W-26ABD
LEGAL LOCATION: SE NW NE sec. 26, T. 117 N., R. 53 W.

2 - 25 Sand, yellow

TEST HOLE NUMBER: 386
LOCATION: 117N-53W-26ACC
LEGAL LOCATION: SW SW NE sec. 26, T. 117 N., R. 53 W.

2 - 8 Sand, white

TEST HOLE NUMBER: 387
LOCATION: 117N-53W-26ADD
LEGAL LOCATION: SE SE NE sec. 26, T. 117 N., R. 53 W.

3 - 23 Sand, yellow, fine

TEST HOLE NUMBER: 388
LOCATION: 117N-53W-26DAA 1
LEGAL LOCATION: NE NE SE sec. 26, T. 117 N., R. 53 W.

2 - 25 Sand, yellow, fine; rocks

TEST HOLE NUMBER: 389
LOCATION: 117N-53W-26DAA 2
LEGAL LOCATION: NE NE SE sec. 26, T. 117 N., R. 53 W.

3 - 34 Sand, yellow, fine; rock

TEST HOLE NUMBER: 390
LOCATION: 117N-53W-26DAD
LEGAL LOCATION: SE NE SE sec. 26, T. 117 N., R. 53 W.

4 - 9 Sand

TEST HOLE NUMBER: 391
LOCATION: 117N-53W-26DBB
LEGAL LOCATION: NW NW SE sec. 26, T. 117 N., R. 53 W.

4 - 11 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 392
LOCATION: 117N-53W-27AAAA

LEGAL LOCATION: NE NE NE NE sec. 27, T. 117 N., R. 53 W.

2 - 12 Sand and gravel

TEST HOLE NUMBER: 393

LOCATION: 117N-53W-28CCBB

LEGAL LOCATION: NW NW SW SW sec. 28, T. 117 N., R. 53 W.

0 - 22 Sand and gravel, medium to coarse; clean, caving

TEST HOLE NUMBER: 394

LOCATION: 117N-53W-28DBBB 1

LEGAL LOCATION: NW NW NW SE sec. 28, T. 117 N., R. 53 W.

6 - 45 Sand, fine

TEST HOLE NUMBER: 395

LOCATION: 117N-53W-28DBBB 2

LEGAL LOCATION: NW NW NW SE sec. 28, T. 117 N., R. 53 W.

2 - 47 Sand

TEST HOLE NUMBER: 396

LOCATION: 117N-53W-31CCCC

LEGAL LOCATION: SW SW SW SW sec. 31, T. 117 N., R. 53 W.

19 - 24 Sand and gravel

TEST HOLE NUMBER: 397

LOCATION: 117N-53W-32CC

LEGAL LOCATION: SW SW sec. 32, T. 117 N., R. 53 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

5 - 13 Gravel, coarse

TEST HOLE NUMBER: 398

LOCATION: 117N-53W-33BBBB

LEGAL LOCATION: NW NW NW NW sec. 33, T. 117 N., R. 53 W.

11 - 17 Sand, fine to coarse; some gravel

17 - 47 Sand, coarse; gravel

TEST HOLE NUMBER: 399

LOCATION: 117N-53W-33CDDD

LEGAL LOCATION: SE SE SE SW sec. 33, T. 117 N., R. 53 W.

2 - 25 Sand, fine to coarse

TEST HOLE NUMBER: 400

LOCATION: 117N-53W-33DDDC

LEGAL LOCATION: SW SE SE SE sec. 33, T. 117 N., R. 53 W.

2 - 31 Sand, coarse; gravel

TEST HOLE NUMBER: 401

LOCATION: 117N-53W-33DDDD

LEGAL LOCATION: SE SE SE SE sec. 33, T. 117 N., R. 53 W.

1 - 20 Gravel; silt; sand mixture
20 - 21 Gravel, pea-size

TEST HOLE NUMBER: 402

LOCATION: 117N-53W-34BBBB

LEGAL LOCATION: NW NW NW NW sec. 34, T. 117 N., R. 53 W.

3 - 16 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 403

LOCATION: 117N-53W-34CCC

LEGAL LOCATION: SW SW SW sec. 34, T. 117 N., R. 53 W.

0 - 19 Sand, brown; gravel; some clay

TEST HOLE NUMBER: 404

LOCATION: 117N-53W-34CCCC 1

LEGAL LOCATION: SW SW SW SW sec. 34, T. 117 N., R. 53 W.

1 - 14 Sand and gravel

TEST HOLE NUMBER: 405

LOCATION: 117N-53W-34CCCC 2

LEGAL LOCATION: SW SW SW SW sec. 34, T. 117 N., R. 53 W.

2 - 11 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 406

LOCATION: 117N-53W-35AAAA 1

LEGAL LOCATION: NE NE NE NE sec. 35, T. 117 N., R. 53 W.

0 - 14 Sand, brown, unsorted; clay
14 - 29 Sand, medium; some clay

TEST HOLE NUMBER: 407

LOCATION: 117N-53W-35AAAA 2

LEGAL LOCATION: NE NE NE NE sec. 35, T. 117 N., R. 53 W.

1 - 3 Sand, coarse
3 - 15 Sand; some gravel

TEST HOLE NUMBER: 408

LOCATION: 117N-53W-35ADDD

LEGAL LOCATION: SE SE SE NE sec. 35, T. 117 N., R. 53 W.

1 - 6 Sand, brown, medium
6 - 8 Sand, coarse
8 - 13 Sand, medium
13 - 15 Gravel, coarse

TEST HOLE NUMBER: 409
LOCATION: 117N-53W-35BCC
LEGAL LOCATION: SW SW NW sec. 35, T. 117 N., R. 53 W.

0 - 9 Sand; some clay; poorly sorted
9 - 24 Sand and gravel, poorly sorted

TEST HOLE NUMBER: 410
LOCATION: 117N-53W-35CBBB
LEGAL LOCATION: NW NW NW SW sec. 35, T. 117 N., R. 53 W.

9 - 12 Sand

TEST HOLE NUMBER: 411
LOCATION: 117N-53W-35DAA
LEGAL LOCATION: NE NE SE sec. 35, T. 117 N., R. 53 W.

0 - 10 Sand and gravel, becoming silty
10 - 14 Sand and gravel; saturated

TEST HOLE NUMBER: 412
LOCATION: 117N-53W-36AAC
LEGAL LOCATION: SW NE NE sec. 36, T. 117 N., R. 53 W.

1 - 14 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 413
LOCATION: 117N-53W-36ABB 1
LEGAL LOCATION: NW NW NE sec. 36, T. 117 N., R. 53 W.

4 - 14 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 414
LOCATION: 117N-53W-36ABB 2
LEGAL LOCATION: NW NW NE sec. 36, T. 117 N., R. 53 W.

4 - 13 Sand and gravel, fine to coarse
14 - 25 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 415
LOCATION: 117N-53W-36ABD
LEGAL LOCATION: SE NW NE sec. 36, T. 117 N., R. 53 W.

5 - 17 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 416
LOCATION: 117N-53W-36ACB 1
LEGAL LOCATION: NW SW NE sec. 36, T. 117 N., R. 53 W.

5 - 13 Sand and gravel, fine to very coarse

TEST HOLE NUMBER: 417
LOCATION: 117N-53W-36ACB 2
LEGAL LOCATION: NW SW NE sec. 36, T. 117 N., R. 53 W.

1 - 11 Sand and gravel, fine to coarse
13 - 18 Sand, fine to medium

TEST HOLE NUMBER: 418
LOCATION: 117N-53W-36ADA 1
LEGAL LOCATION: NE SE NE sec. 36, T. 117 N., R. 53 W.

2 - 21 Sand and gravel, fine to very coarse

TEST HOLE NUMBER: 419
LOCATION: 117N-53W-36ADA 2
LEGAL LOCATION: NE SE NE sec. 36, T. 117 N., R. 53 W.

2 - 11 Sand and gravel, fine to very coarse

TEST HOLE NUMBER: 420
LOCATION: 117N-53W-36BAB
LEGAL LOCATION: NW NE NW sec. 36, T. 117 N., R. 53 W.

1 - 12 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 421
LOCATION: 117N-53W-36BAC
LEGAL LOCATION: SW NE NW sec. 36, T. 117 N., R. 53 W.

5 - 17 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 422
LOCATION: 117N-53W-36BAD
LEGAL LOCATION: SE NE NW sec. 36, T. 117 N., R. 53 W.

1 - 30 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 423
LOCATION: 117N-53W-36BDB
LEGAL LOCATION: NW SE NW sec. 36, T. 117 N., R. 53 W.

4 - 14 Sand and gravel, fine to coarse
16 - 25 Sand, fine to coarse

TEST HOLE NUMBER: 424
LOCATION: 117N-53W-36CCA

LEGAL LOCATION: NE SW SW sec. 36, T. 117 N., R. 53 W.

4 - 23 Sand; packed
23 - 28 Sand, fine

TEST HOLE NUMBER: 425

LOCATION: 117N-53W-36CCCC

LEGAL LOCATION: SW SW SW SW sec. 36, T. 117 N., R. 53 W.

2 - 8 Sand, medium; clean
8 - 20 Sand; some silt

TEST HOLE NUMBER: 426

LOCATION: 117N-53W-36DBD

LEGAL LOCATION: SE NW SE sec. 36, T. 117 N., R. 53 W.

4 - 10 Sand, coarse
10 - 23 Sand and gravel, fine to coarse; packed

TEST HOLE NUMBER: 427

LOCATION: 117N-53W-36DDB

LEGAL LOCATION: NW SE SE sec. 36, T. 117 N., R. 53 W.

0 - 24 Sand, medium
24 - 34 Gravel, fine

TEST HOLE NUMBER: 428

LOCATION: 117N-54W-01AAAA

LEGAL LOCATION: NE NE NE NE sec. 01, T. 117 N., R. 54 W.

3 - 4 Sand, medium; clean
4 - 13 Gravel, medium to fine
13 - 15 Gravel, medium to coarse

TEST HOLE NUMBER: 429

LOCATION: 117N-54W-01CADC

LEGAL LOCATION: SW SE NE SW sec. 01, T. 117 N., R. 54 W.

4 - 8 Gravel, fine; coarse to medium sand
8 - 20 Sand, coarse; some fine gravel
20 - 28 Gravel, medium to fine

TEST HOLE NUMBER: 430

LOCATION: 117N-54W-01DADD

LEGAL LOCATION: SE SE NE SE sec. 01, T. 117 N., R. 54 W.

1 - 15 Gravel, rusty colored
18 - 38 Gravel, rusty colored

TEST HOLE NUMBER: 431

LOCATION: 117N-54W-01DBDB

LEGAL LOCATION: NW SE NW SE sec. 01, T. 117 N., R. 54 W.

0 - 3 Sand, brown, very coarse; with pea-sized gravel; dry
3 - 7 Sand, gray, very coarse; some large gravel; moist
7 - 12 Gravel, gray, pea-sized; clay present; saturated, unoxidized
12 - 37 Gravel, blackish-gray, pea-sized; shows traces of iron manganese stain

TEST HOLE NUMBER: 432

LOCATION: 117N-54W-02ADBC

LEGAL LOCATION: SW NW SE NE sec. 02, T. 117 N., R. 54 W.

8 - 19 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, clayey, silty; oxidized, dry
19 - 26 Gravel, brown, medium to coarse, sandy; could not penetrate past 26 feet

TEST HOLE NUMBER: 433

LOCATION: 117N-54W-02BDDD

LEGAL LOCATION: SE SE SE NW sec. 02, T. 117 N., R. 54 W.

6 - 27 Gravel, reddish-brown; very coarse sand; clay present

TEST HOLE NUMBER: 434

LOCATION: 117N-54W-02DBAC

LEGAL LOCATION: SW NE NW SE sec. 02, T. 117 N., R. 54 W.

5 - 7 Gravel, medium to fine; medium sand
7 - 8 Gravel, medium to fine; fine sand
8 - 13 Gravel, fine; sand, fine
13 - 18 Gravel, medium; coarse sand
18 - 20 Gravel, medium; medium sand
20 - 22 Gravel, medium
22 - 28 Gravel, coarse

TEST HOLE NUMBER: 435

LOCATION: 117N-54W-04DBDD

LEGAL LOCATION: SE SE NW SE sec. 04, T. 117 N., R. 54 W.

1 - 9 Sand, light-brown, coarse to medium; dry
9 - 13 Sand, dark-brown, coarse to medium; with some gravel; dry
13 - 15 Sand, medium, clayey; dry
15 - 19 Sand and clay, dark-brown, medium sand; no large pebbles; moist
19 - 30 Sand and clay, dull-gray, medium sand; no large pebbles

TEST HOLE NUMBER: 436

LOCATION: 117N-54W-06BBBB

LEGAL LOCATION: NW NW NW NW sec. 06, T. 117 N., R. 54 W.

19 - 20 Gravel, coarse

TEST HOLE NUMBER: 437

LOCATION: 117N-54W-11ACBC

LEGAL LOCATION: SW NW SW NE sec. 11, T. 117 N., R. 54 W.

3 - 10 Sand, grayish-brown, coarse; some pea-sized gravel
10 - 27 Sand, blackish-gray, very coarse; some pea-sized gravel, clay present

TEST HOLE NUMBER: 438
LOCATION: 117N-54W-12CBBD
LEGAL LOCATION: SE NW NW SW sec. 12, T. 117 N., R. 54 W.

12 - 55 Gravel

TEST HOLE NUMBER: 439
LOCATION: 117N-54W-12DCDC
LEGAL LOCATION: SW SE SW SE sec. 12, T. 117 N., R. 54 W.

3 - 30 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 440
LOCATION: 117N-54W-12DDDD
LEGAL LOCATION: SE SE SE SE sec. 12, T. 117 N., R. 54 W.

1 - 8 Sand, light-brown, very silty
8 - 15 Gravel, fine to medium, sandy

TEST HOLE NUMBER: 441
LOCATION: 117N-54W-15AAAA
LEGAL LOCATION: NE NE NE NE sec. 15, T. 117 N., R. 54 W.

1 - 15 Sand, orange-brown, fine to medium; oxidized
15 - 20 Gravel and sand, orange-brown, fine gravel, fine to coarse sand; oxidized, moist
20 - 28 Sand and gravel, brown, medium to coarse sand, fine gravel, clayey; oxidized

TEST HOLE NUMBER: 442
LOCATION: 117N-54W-17ABBA
LEGAL LOCATION: NE NW NW NE sec. 17, T. 117 N., R. 54 W.

1 - 8 Sand, brown, fine to medium; oxidized, dry to moist; some fine to medium gravel; increased clay content with depth

TEST HOLE NUMBER: 443
LOCATION: 117N-54W-19BABB
LEGAL LOCATION: NW NW NE NW sec. 19, T. 117 N., R. 54 W.

5 - 7 Sand, brown to red, fine to medium, clayey; oxidized, dry; some gravel

TEST HOLE NUMBER: 444
LOCATION: 117N-54W-22DCCC
LEGAL LOCATION: SW SW SW SE sec. 22, T. 117 N., R. 54 W.

1 - 32 Gravel, fine to medium, silty; some sand

TEST HOLE NUMBER: 445
LOCATION: 117N-54W-23DCCC
LEGAL LOCATION: SW SW SW SE sec. 23, T. 117 N., R. 54 W.

1 - 22 Gravel, brown, sandy, silty

TEST HOLE NUMBER: 446
LOCATION: 117N-54W-26CDDD
LEGAL LOCATION: SE SE SE SW sec. 26, T. 117 N., R. 54 W.

19 - 57 Sand

TEST HOLE NUMBER: 447
LOCATION: 117N-54W-34DCBC
LEGAL LOCATION: SW NW SW SE sec. 34, T. 117 N., R. 54 W.

7 - 14 Sand, brown, fine to medium, very clayey; oxidized, saturated; some gravel
14 - 22 Sand, gray, fine to medium, very clayey; saturated

TEST HOLE NUMBER: 448
LOCATION: 117N-55W-01BBBA
LEGAL LOCATION: NE NW NW NW sec. 01, T. 117 N., R. 55 W.

1 - 4 Gravel, gray-brown, fine to medium, sandy; oxidized, dry

TEST HOLE NUMBER: 449
LOCATION: 117N-55W-01BBCB
LEGAL LOCATION: NW SW NW NW sec. 01, T. 117 N., R. 55 W.

10 - 27 Sand, medium; some brown clay

TEST HOLE NUMBER: 450
LOCATION: 117N-55W-01CCCC
LEGAL LOCATION: SW SW SW SW sec. 01, T. 117 N., R. 55 W.

13 - 18 Sand, medium; some brown clay

TEST HOLE NUMBER: 451
LOCATION: 117N-55W-02BBBB
LEGAL LOCATION: NW NW NW NW sec. 02, T. 117 N., R. 55 W.

5 - 6 Sand, light-brown, fine, well-sorted; oxidized, dry

TEST HOLE NUMBER: 452
LOCATION: 117N-55W-05AADA
LEGAL LOCATION: NE SE NE NE sec. 05, T. 117 N., R. 55 W.

1 - 3 Sand and gravel, brown, fine to medium sand, fine to coarse gravel, silty; oxidized, dry; little clay
3 - 6 Sand, brown, fine, well-sorted, silty; oxidized, dry; little clay

TEST HOLE NUMBER: 453
LOCATION: 117N-55W-10AAAA
LEGAL LOCATION: NE NE NE NE sec. 10, T. 117 N., R. 55 W.

2 - 6 Sand, brown, fine to medium, silty, clayey; oxidized, dry; some clay layers
6 - 26 Sand, brown, medium, clayey, silty; oxidized, saturated; some coarse sand

TEST HOLE NUMBER: 454
LOCATION: 117N-55W-15CABC
LEGAL LOCATION: SW NW NE SW sec. 15, T. 117 N., R. 55 W.

- 2 - 7 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, clayey; oxidized, dry
- 7 - 11 Sand, brown, fine to medium, clayey, rounded; oxidized, dry to moist

TEST HOLE NUMBER: 455
LOCATION: 117N-55W-15CCDB
LEGAL LOCATION: NW SE SW SW sec. 15, T. 117 N., R. 55 W.

- 0 - 2 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, silty, clayey; oxidized, dry
- 2 - 7 Sand, brown, medium to coarse, silty, clayey; oxidized, moist; some fine gravel

TEST HOLE NUMBER: 456
LOCATION: 117N-55W-22ACCC
LEGAL LOCATION: SW SW SW NE sec. 22, T. 12@N., R. 55 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

- 1 - 15 Sand, orange, fine to medium

TEST HOLE NUMBER: 457
LOCATION: 117N-55W-27DCDC
LEGAL LOCATION: SW SE SW SE sec. 27, T. 117 N., R. 55 W.

- 2 - 3 Sand and gravel, brown, fine to coarse sand, fine gravel, clayey, silty; oxidized, damp

TEST HOLE NUMBER: 458
LOCATION: 117N-55W-33CDDD
LEGAL LOCATION: SE SE SE SW sec. 33, T. 117 N., R. 55 W.

- 4 - 10 Sand and gravel, brown, fine to medium, clayey; oxidized, moist

TEST HOLE NUMBER: 459
LOCATION: 117N-55W-35DCCD
LEGAL LOCATION: SE SW SW SE sec. 35, T. 117 N., R. 55 W.

- 0.5 - 2 Sand, red-brown, fine to medium, well-sorted; oxidized, dry; some silt, some clay
- 13 - 18 Sand, brown, fine to medium, very clayey, very silty; oxidized, moist

TEST HOLE NUMBER: 460
LOCATION: 117N-55W-36AACA
LEGAL LOCATION: NE SW NE NE sec. 36, T. 117 N., R. 55 W.

- 0 - 4 Gravel, brown, medium to coarse, clayey, silty; oxidized, dry; some fine sand
- 4 - 11 Sand and gravel, brown, fine to coarse sand, fine to medium gravel; oxidized, moist

TEST HOLE NUMBER: 461
LOCATION: 118N-51W-01BBBA
LEGAL LOCATION: NE NW NW NW sec. 01, T. 118 N., R. 51 W.

- 1 - 4 Sand, burnt-orange-brown, fine to coarse; oxidized; little silt

- 4 - 10 Sand and gravel, orange-brown, fine to coarse sand, fine to medium gravel; oxidized
- 10 - 31 Sand and gravel, orange-brown, fine to coarse sand, fine to coarse gravel; oxidized; saturated

TEST HOLE NUMBER: 462
 LOCATION: 118N-51W-01DADA
 LEGAL LOCATION: NE SE NE SE sec. 01, T. 118 N., R. 51 W.

- 3 - 4 Gravel, coarse
- 4 - 15 Gravel(?); no cuttings received

TEST HOLE NUMBER: 463
 LOCATION: 118N-51W-06ABBC
 LEGAL LOCATION: SW NW NW NE sec. 06, T. 118 N., R. 51 W.

- 0 - 16 Gravel

TEST HOLE NUMBER: 464
 LOCATION: 118N-51W-07DAAA
 LEGAL LOCATION: NE NE NE SE sec. 07, T. 118 N., R. 51 W.

- 2 - 4 Gravel, coarse
- 4 - 9 Gravel, coarse to medium
- 9 - 14 Sand, coarse; to fine gravel
- 14 - 15 Sand; yellow clay with pebbles

TEST HOLE NUMBER: 465
 LOCATION: 118N-51W-11BBBB
 LEGAL LOCATION: NW NW NW NW sec. 11, T. 118 N., R. 51 W.

- 1 - 23 Sand and gravel, tan-brown, medium sand, fine to medium gravel, clayey, silty; oxidized

TEST HOLE NUMBER: 466
 LOCATION: 118N-51W-12BBBA
 LEGAL LOCATION: NE NW NW NW sec. 12, T. 118 N., R. 51 W.

- 1 - 12 Sand and gravel, tan-yellow-brown, fine to coarse sand, fine gravel, silty, clayey; oxidized; saturated at 5 feet

TEST HOLE NUMBER: 467
 LOCATION: 118N-51W-16AABA
 LEGAL LOCATION: NE NW NE NE sec. 16, T. 118 N., R. 51 W.

- 2 - 19 Sand and gravel, brown, fine to medium sand, fine to medium gravel, coarse gravel from 17 to 19 feet, silty; oxidized
- 19 - 36 Sand, brown, medium to coarse, slightly clayey; oxidized; saturated at 30 feet; some gravel; more clay with depth

TEST HOLE NUMBER: 468
 LOCATION: 118N-51W-18BCBC
 LEGAL LOCATION: SW NW SW NW sec. 18, T. 118 N., R. 51 W.

- 1 - 2 Gravel, fine to medium, silty, sandy

TEST HOLE NUMBER: 469
LOCATION: 118N-51W-21AABA
LEGAL LOCATION: NE NW NE NE sec. 21, T. 118 N., R. 51 W.

- 11 - 22 Sand and gravel, orange-tan-brown, fine to coarse sand, fine gravel, silty; oxidized; wet at 18 feet
- 22 - 30 Sand and gravel, yellow-tan-brown, fine to coarse sand, fine gravel, silty; oxidized; saturated

TEST HOLE NUMBER: 470
LOCATION: 118N-51W-27BBAB
LEGAL LOCATION: NW NE NW NW sec. 27, T. 118 N., R. 51 W.

- 4 - 6 Sand and gravel, orange-brown, fine to coarse sand, fine to medium gravel, silty; oxidized
- 6 - 8 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel, silty; oxidized; could not penetrate past 8 feet

TEST HOLE NUMBER: 471
LOCATION: 118N-51W-34ABBB
LEGAL LOCATION: NW NW NW NE sec. 34, T. 118 N., R. 51 W.

- 1 - 6 Sand, orange-brown, very clayey, silty; oxidized; some fine gravel
- 6 - 12 Sand and gravel, orange-brown, fine to coarse sand, fine to medium gravel, silty; oxidized
- 12 - 14 Sand and gravel, gray-brown, fine to coarse sand, fine gravel, silty; oxidized
- 14 - 16 Sand, yellow-tan-brown, fine to coarse, clayey, silty; oxidized

TEST HOLE NUMBER: 472
LOCATION: 118N-51W-34BBCB
LEGAL LOCATION: NW SW NW NW sec. 34, T. 118 N., R. 51 W.

- 6 - 12 Sand and gravel, yellow-tan-brown, fine to medium sand, fine gravel, silty; oxidized; wet

TEST HOLE NUMBER: 473
LOCATION: 118N-52W-01AADD
LEGAL LOCATION: SE SE NE NE sec. 01, T. 118 N., R. 52 W.

- 1 - 4 Gravel, medium to coarse
- 4 - 48 Sand and gravel, yellow-brown, fine to coarse sand, fine to coarse gravel, silty; oxidized; more clay with depth; wet at 31 feet

TEST HOLE NUMBER: 474
LOCATION: 118N-52W-01CDAB
LEGAL LOCATION: NW NE SE SW sec. 01, T. 118 N., R. 52 W.

- 4 - 31 Sand and gravel

TEST HOLE NUMBER: 475
LOCATION: 118N-52W-01DDCC
LEGAL LOCATION: SW SW SE SE sec. 01, T. 118 N., R. 52 W.

- 1 - 32 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 476
LOCATION: 118N-52W-02BBBA

LEGAL LOCATION: NE NW NW NW sec. 02, T. 118 N., R. 52 W.

3 - 8 Gravel, orange-tan-brown, fine to medium, very silty; oxidized; some orange-tan-brown silt
8 - 10 Gravel, coarse
21 - 25 Gravel(?); broke bit; hard drilling

TEST HOLE NUMBER: 477

LOCATION: 118N-52W-02BBBA 1

LEGAL LOCATION: NE NW NW NW sec. 02, T. 118 N., R. 52 W.

3 - 9 Gravel, orange-tan-brown, fine to medium, silty; oxidized; some tan-brown silt
9 - 11 Gravel, coarse
23 - 27 Gravel, pea-size; hard packed; saturated

TEST HOLE NUMBER: 478

LOCATION: 118N-52W-02CDDD 1

LEGAL LOCATION: SE SE SE SW sec. 02, T. 118 N., R. 52 W.

2 - 30 Gravel

TEST HOLE NUMBER: 479

LOCATION: 118N-52W-02CDDD 2

LEGAL LOCATION: SE SE SE SW sec. 02, T. 118 N., R. 52 W.

3 - 31 Gravel

TEST HOLE NUMBER: 480

LOCATION: 118N-52W-05CDCC

LEGAL LOCATION: SW SW SE SW sec. 05, T. 118 N., R. 52 W.

4 - 9 Sand, orange-tan-brown, fine to coarse clayey, silty, gravelly; oxidized
9 - 15 Sand, tan-brown, fine to coarse, clayey, silty, gravelly; oxidized; saturated

TEST HOLE NUMBER: 481

LOCATION: 118N-52W-08CDDD

LEGAL LOCATION: SE SE SE SW sec. 08, T. 118 N., R. 52 W.

3 - 9 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to coarse gravel, silty; oxidized
19 - 21 Gravel(?); no return; driller reports drills like gravel

TEST HOLE NUMBER: 482

LOCATION: 118N-52W-08DDDD

LEGAL LOCATION: SE SE SE SE sec. 08, T. 118 N., R. 52 W.

2 - 38 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 483

LOCATION: 118N-52W-09CBBB

LEGAL LOCATION: NW NW NW SW sec. 09, T. 118 N., R. 52 W.

6 - 12 Gravel

TEST HOLE NUMBER: 484
LOCATION: 118N-52W-09CDDC
LEGAL LOCATION: SW SE SE SW sec. 09, T. 118 N., R. 52 W.

- 1 - 18 Sand and gravel, yellow-brown, fine to medium sand, fine to medium gravel, silty; oxidized; some coarse gravel from 7 to 10 feet
- 18 - 32 Sand and gravel, gray-brown, medium to coarse sand, medium to coarse gravel; moist

TEST HOLE NUMBER: 485
LOCATION: 118N-52W-11AAAD
LEGAL LOCATION: SE NE NE NE sec. 11, T. 118 N., R. 52 W.

- 1 - 10 Gravel, coarse, silty, sandy
- 10 - 26 Sand and gravel, brown, fine sand, fine to medium gravel, silty; oxidized; saturated at 20 feet

TEST HOLE NUMBER: 486
LOCATION: 118N-52W-11CBBC
LEGAL LOCATION: SW NW NW SW sec. 11, T. 118 N., R. 52 W.

- 3 - 30 Sand and gravel; good pea gravel towards bottom

TEST HOLE NUMBER: 487
LOCATION: 118N-52W-12BCDC
LEGAL LOCATION: SW SE SW NW sec. 12, T. 118 N., R. 52 W.

- 12 - 30 Gravel

TEST HOLE NUMBER: 488
LOCATION: 118N-52W-12CBB
LEGAL LOCATION: NW NW SW sec. 12, T. 118 N., R. 52 W.

- 8 - 32 Gravel

TEST HOLE NUMBER: 489
LOCATION: 118N-52W-13BBBB
LEGAL LOCATION: NW NW NW NW sec. 13, T. 118 N., R. 52 W.

- 2 - 5 Sand, yellow-brown, fine to medium, clayey, silty; oxidized

TEST HOLE NUMBER: 490
LOCATION: 118N-52W-15BBBB
LEGAL LOCATION: NW NW NW NW sec. 15, T. 118 N., R. 52 W.

- 3 - 10 Sand and gravel, medium to coarse; poor, large rocks

TEST HOLE NUMBER: 491
LOCATION: 118N-52W-16ABBA
LEGAL LOCATION: NE NW NW NE sec. 16, T. 118 N., R. 52 W.

- 2 - 9 Sand, medium to coarse, silty; with pebbles

TEST HOLE NUMBER: 492
LOCATION: 118N-52W-16BDC
LEGAL LOCATION: SW SE NW sec. 16, T. 118 N., R. 52 W.

4 - 13 Gravel; dry
13 - 38 Sand and gravel; water producing

TEST HOLE NUMBER: 493
LOCATION: 118N-52W-17AABB
LEGAL LOCATION: NW NW NE NE sec. 17, T. 118 N., R. 52 W.

10 - 20 Gravel

TEST HOLE NUMBER: 494
LOCATION: 118N-52W-17ABAA
LEGAL LOCATION: NE NE NW NE sec. 17, T. 118 N., R. 52 W.

20 - 40 Gravel

TEST HOLE NUMBER: 495
LOCATION: 118N-52W-17ADAA
LEGAL LOCATION: NE NE SE NE sec. 17, T. 118 N., R. 52 W.

12 - 30 Gravel

TEST HOLE NUMBER: 496
LOCATION: 118N-52W-17CCCA
LEGAL LOCATION: NE SW SW SW sec. 17, T. 118 N., R. 52 W.

5 - 40 Gravel

TEST HOLE NUMBER: 497
LOCATION: 118N-52W-18AAAA
LEGAL LOCATION: NE NE NE NE sec. 18, T. 118 N., R. 52 W.

4 - 15 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 498
LOCATION: 118N-52W-18BBBB
LEGAL LOCATION: NW NW NW NW sec. 18, T. 118 N., R. 52 W.

2 - 8 Gravel, brown, medium to coarse

TEST HOLE NUMBER: 499
LOCATION: 118N-52W-18DDDD
LEGAL LOCATION: SE SE SE SE sec. 18, T. 118 N., R. 52 W.

1 - 28 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 500
LOCATION: 118N-52W-19ACCD

LEGAL LOCATION: SE SW SW NE sec. 19, T. 118 N., R. 52 W.

5 - 20 Sand and gravel, medium to very coarse
20 - 35 Sand, fine to coarse; cemented

TEST HOLE NUMBER: 501
LOCATION: 118N-52W-19DCC
LEGAL LOCATION: SW SW SE sec. 19, T. 118 N., R. 52 W.

17 - 37 Sand; some clay

TEST HOLE NUMBER: 502
LOCATION: 118N-52W-19DDDD
LEGAL LOCATION: SE SE SE SE sec. 19, T. 118 N., R. 52 W.

4 - 41 Sand, gray, medium to coarse

TEST HOLE NUMBER: 503
LOCATION: 118N-52W-20ADDA
LEGAL LOCATION: NE SE SE NE sec. 20, T. 118 N., R. 52 W.

3 - 23 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 504
LOCATION: 118N-52W-20ADDC
LEGAL LOCATION: SW SE SE NE sec. 20, T. 118 N., R. 52 W.

6 - 38 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 505
LOCATION: 118N-52W-20BBB
LEGAL LOCATION: NW NW NW sec. 20, T. 118 N., R. 52 W.

14 - 29 Sand and gravel; little clay

TEST HOLE NUMBER: 506
LOCATION: 118N-52W-20DBBB
LEGAL LOCATION: NW NW NW SE sec. 20, T. 118 N., R. 52 W.

3 - 38 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 507
LOCATION: 118N-52W-21AAAD
LEGAL LOCATION: SE NE NE NE sec. 21, T. 118 N., R. 52 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 3 Sand and gravel, brown, medium sand to fine gravel

TEST HOLE NUMBER: 508
LOCATION: 118N-52W-21ABAB

LEGAL LOCATION: NW NE NW NE sec. 21, T. 118 N., R. 52 W.

1 - 6 Sand, yellow-tan-brown, fine to coarse, gravelly; oxidized
6 - 12 Gravel, orange-tan-brown, fine to medium, silty, slightly sandy; oxidized; some coarse gravel
12 - 24 Gravel, yellow-tan-brown, fine to medium, clayey, silty, sandy; oxidized; wet

TEST HOLE NUMBER: 509

LOCATION: 118N-52W-21BBCB

LEGAL LOCATION: NW SW NW NW sec. 21, T. 118 N., R. 52 W.

3 - 15 Gravel, coarse
15 - 42 Gravel, fine

TEST HOLE NUMBER: 510

LOCATION: 118N-52W-23BAAA

LEGAL LOCATION: NE NE NE NW sec. 23, T. 118 N., R. 52 W.

3 - 9 Sand, fine to coarse, silty; driller reports some gravel, but no return

TEST HOLE NUMBER: 511

LOCATION: 118N-52W-23BBBA

LEGAL LOCATION: NE NW NW NW sec. 23, T. 118 N., R. 52 W.

2 - 8 Gravel(?); no return; driller reports drills like gravel

TEST HOLE NUMBER: 512

LOCATION: 118N-52W-26ADDA

LEGAL LOCATION: NE SE SE NE sec. 26, T. 118 N., R. 52 W.

3 - 5 Gravel, coarse; no return; driller reports drills like gravel

TEST HOLE NUMBER: 513

LOCATION: 118N-52W-28BCC

LEGAL LOCATION: SW SW NW sec. 28, T. 118 N., R. 52 W.

0 - 10 Sand, brown, clayey

TEST HOLE NUMBER: 514

LOCATION: 118N-52W-28CCC

LEGAL LOCATION: SW SW SW sec. 28, T. 118 N., R. 52 W.

6 - 30 Sand and gravel

TEST HOLE NUMBER: 515

LOCATION: 118N-52W-28CDD

LEGAL LOCATION: SE SW SE SW sec. 28, T. 118 N., R. 52 W.

7 - 28 Sand and gravel, tan-brown, fine to medium sand, fine to medium gravel, silty; oxidized; saturated at 13 feet

TEST HOLE NUMBER: 516

LOCATION: 118N-52W-29BAA

LEGAL LOCATION: NE NE NW sec. 29, T. 118 N., R. 52 W.

4 - 49 Gravel, fine

TEST HOLE NUMBER: 517

LOCATION: 118N-52W-29BAAA

LEGAL LOCATION: NE NE NE NW sec. 29, T. 118 N., R. 52 W.

2 - 38 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 518

LOCATION: 118N-52W-29BDDC

LEGAL LOCATION: SW SE SE NW sec. 29, T. 118 N., R. 52 W.

5 - 38 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 519

LOCATION: 118N-52W-29CCC

LEGAL LOCATION: SW SW SW sec. 29, T. 118 N., R. 52 W.

11 - 29 Gravel, coarse; some clay

TEST HOLE NUMBER: 520

LOCATION: 118N-52W-30CCCC

LEGAL LOCATION: SW SW SW SW sec. 30, T. 118 N., R. 52 W.

2 - 16 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 521

LOCATION: 118N-52W-30CCDD

LEGAL LOCATION: SE SE SW SW sec. 30, T. 118 N., R. 52 W.

2 - 30 Sand and gravel

TEST HOLE NUMBER: 522

LOCATION: 118N-52W-30CDC

LEGAL LOCATION: SW SE SW sec. 30, T. 118 N., R. 52 W.

5 - 17 Sand and gravel, medium to coarse

19 - 42 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 523

LOCATION: 118N-52W-30DCC

LEGAL LOCATION: SW SW SE sec. 30, T. 118 N., R. 52 W.

0 - 9 Gravel, red

9 - 29 Gravel, medium to coarse; some clay

TEST HOLE NUMBER: 524

LOCATION: 118N-52W-31AAAA

LEGAL LOCATION: NE NE NE NE sec. 31, T. 118 N., R. 52 W.

7 - 12 Sand, tan; silt; water
12 - 18 Gravel, medium-brown; water
18 - 30 Sand, coarse; gravel, fine

TEST HOLE NUMBER: 525
LOCATION: 118N-52W-31AABB
LEGAL LOCATION: NW NW NE NE sec. 31, T. 118 N., R. 52 W.

3 - 37 Sand and gravel, fine to coarse

TEST HOLE NUMBER: 526
LOCATION: 118N-52W-31BCC
LEGAL LOCATION: SW SW NW sec. 31, T. 118 N., R. 52 W.

2 - 12 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 527
LOCATION: 118N-52W-31DBBA
LEGAL LOCATION: NE NW NW SE sec. 31, T. 118 N., R. 52 W.

3 - 28 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 528
LOCATION: 118N-52W-31DDCD
LEGAL LOCATION: SE SW SE SE sec. 31, T. 118 N., R. 52 W.

3 - 20 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 529
LOCATION: 118N-52W-31DDD
LEGAL LOCATION: SE SE SE sec. 31, T. 118 N., R. 52 W.

5 - 34 Sand and gravel; some clay

TEST HOLE NUMBER: 530
LOCATION: 118N-52W-32BAD
LEGAL LOCATION: SE NE NW sec. 32, T. 118 N., R. 52 W.

14 - 54 Sand, coarse; gravel, fine

TEST HOLE NUMBER: 531
LOCATION: 118N-52W-32BCCC
LEGAL LOCATION: SW SW SW NW sec. 32, T. 118 N., R. 52 W.

4 - 20 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 532
LOCATION: 118N-52W-32CCDD

LEGAL LOCATION: SE SE SW SW sec. 32, T. 118 N., R. 52 W.

3 - 7 Gravel, medium; sand, coarse; water
7 - 9 Sand, medium; gravel, fine
9 - 24 Sand, coarse
24 - 65 Sand, medium to fine

TEST HOLE NUMBER: 533

LOCATION: 118N-52W-32DBBA

LEGAL LOCATION: NE NW NW SE sec. 32, T. 118 N., R. 52 W.

4 - 23 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 534

LOCATION: 118N-52W-32DCCC

LEGAL LOCATION: SW SW SW SE sec. 32, T. 118 N., R. 52 W.

3 - 18 Sand and gravel, medium to very coarse

TEST HOLE NUMBER: 535

LOCATION: 118N-52W-33BBBB 1

LEGAL LOCATION: NW NW NW NW sec. 33, T. 118 N., R. 52 W.

2 - 23 Sand and gravel

TEST HOLE NUMBER: 536

LOCATION: 118N-52W-33BBBB 2

LEGAL LOCATION: NW NW NW NW sec. 33, T. 118 N., R. 52 W.

0 - 2 Gravel; coal (road fill)
2 - 23 Sand and gravel, reddish-brown, coarse

TEST HOLE NUMBER: 537

LOCATION: 118N-52W-34BBBB

LEGAL LOCATION: NW NW NW NW sec. 34, T. 118 N., R. 52 W.

7 - 30 Sand, coarse; water at 25 feet

TEST HOLE NUMBER: 538

LOCATION: 118N-52W-34CBBC

LEGAL LOCATION: SW NW NW SW sec. 34, T. 118 N., R. 52 W.

1 - 4 Sand and gravel, tan-brown, fine sand, fine gravel, silty; oxidized
4 - 9 Gravel, tan-brown, coarse, silty, sandy; oxidized; hit rock; unable to penetrate past 9 feet;
abandoned hole

TEST HOLE NUMBER: 539

LOCATION: 118N-53W-07CCCC

LEGAL LOCATION: SW SW SW SW sec. 07, T. 118 N., R. 53 W.

1 - 2 Gravel, medium to coarse; dry

- 8 - 11 Sand, brown, fine to medium, clayey, silty; oxidized, moist
- 11 - 34 Sand and gravel, brown, fine to medium sand, fine to coarse gravel, clayey; oxidized, saturated at 13 feet

TEST HOLE NUMBER: 540
 LOCATION: 118N-53W-08ABBC
 LEGAL LOCATION: SW NW NW NE sec. 08, T. 118 N., R. 53 W.

- 11 - 20 Sand, brown, fine to medium, very clayey, slightly gravelly; oxidized, saturated; more gravel below 15 feet; unoxidized at 14 feet

TEST HOLE NUMBER: 541
 LOCATION: 118N-53W-08ACBB
 LEGAL LOCATION: NW NW SW NE sec. 08, T. 118 N., R. 53 W.

- 5 - 15 Gravel
- 19 - 39 Gravel

TEST HOLE NUMBER: 542
 LOCATION: 118N-53W-08DCDD
 LEGAL LOCATION: SE SE SW SE sec. 08, T. 118 N., R. 53 W.

- 9 - 14 Gravel, coarse; grades to sand
- 14 - 19 Sand, medium to coarse
- 19 - 24 Sand, fine to medium
- 24 - 29 Sand, medium

TEST HOLE NUMBER: 543
 LOCATION: 118N-53W-08DDDD
 LEGAL LOCATION: SE SE SE SE sec. 08, T. 118 N., R. 53 W.

- 4 - 25 Sand and gravel

TEST HOLE NUMBER: 544
 LOCATION: 118N-53W-13CDDC
 LEGAL LOCATION: SW SE SE SW sec. 13, T. 118 N., R. 53 W.

- 4 - 11 Sand, tan, fine to coarse, silty, gravelly; oxidized, wet; a little clay
- 11 - 21 Sand, tan-orange-brown, fine to coarse, silty, clayey; oxidized; saturated; some fine gravel

TEST HOLE NUMBER: 545
 LOCATION: 118N-53W-13DDDD
 LEGAL LOCATION: SE SE SE SE sec. 13, T. 118 N., R. 53 W.
 PRELIMINARY LOG -- SUBJECT TO CHANGE

- 1 - 16 Sand and gravel, medium sand to fine gravel; oxidized; minor clay

TEST HOLE NUMBER: 546
 LOCATION: 118N-53W-17ADDD
 LEGAL LOCATION: SE SE SE NE sec. 17, T. 118 N., R. 53 W.

- 2 - 12 Sand, medium

- 12 - 20 Sand, gray, medium to coarse
- 20 - 24 Gravel, coarse; with rocks

TEST HOLE NUMBER: 547
 LOCATION: 118N-53W-17BAAA
 LEGAL LOCATION: NE NE NE NW sec. 17, T. 118 N., R. 53 W.

- 5 - 8 Sand, brown, fine to coarse, clayey; oxidized, damp
- 8 - 9 Sand, brown, fine to coarse, very clayey; oxidized, moist; few fine pebbles
- 9 - 15 Sand and gravel, brown, fine to coarse sand, fine gravel, clayey; oxidized, saturated; gravel is coarser at 11 feet
- 18 - 23 Sand and gravel, brown, fine to coarse sand, fine gravel, very clayey; oxidized, saturated

TEST HOLE NUMBER: 548
 LOCATION: 118N-53W-18BBBB
 LEGAL LOCATION: NW NW NW NW sec. 18, T. 118 N., R. 53 W.

- 4 - 6 Sand and gravel

TEST HOLE NUMBER: 549
 LOCATION: 118N-53W-18BBCC
 LEGAL LOCATION: SW SW NW NW sec. 18, T. 118 N., R. 53 W.

- 4 - 49 Gravel, coarse, rocky; saturated below 25 feet

TEST HOLE NUMBER: 550
 LOCATION: 118N-53W-19BBBA
 LEGAL LOCATION: NE NW NW NW sec. 19, T. 118 N., R. 53 W.
 PRELIMINARY LOG -- SUBJECT TO CHANGE

- 1 - 13 Sand and gravel, fine to medium sand, medium gravel; clayey

TEST HOLE NUMBER: 551
 LOCATION: 118N-53W-21BBBA
 LEGAL LOCATION: NE NW NW NW sec. 21, T. 118 N., R. 53 W.

- 24 - 53 Sand, yellow-brown, fine, slightly clayey, slightly silty; oxidized, saturated at 27 feet; unoxidized at 34 feet; increased clay content below 50 feet

TEST HOLE NUMBER: 552
 LOCATION: 118N-53W-24AAAA
 LEGAL LOCATION: NE NE NE NE sec. 24, T. 118 N., R. 53 W.

- 1 - 20 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 553
 LOCATION: 118N-53W-24DDDD
 LEGAL LOCATION: SE SE SE SE sec. 24, T. 118 N., R. 53 W.

- 3 - 21 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 554
LOCATION: 118N-53W-25CCCC
LEGAL LOCATION: SW SW SW SW sec. 25, T. 118 N., R. 53 W.

7 - 30 Sand, coarse; water

TEST HOLE NUMBER: 555
LOCATION: 118N-53W-25CCDC
LEGAL LOCATION: SW SE SW SW sec. 25, T. 118 N., R. 53 W.

1 - 6 Sand and gravel, dark-brown, fine to coarse sand, fine to medium gravel, clayey; oxidized, moist

TEST HOLE NUMBER: 556
LOCATION: 118N-53W-31CCCC 1
LEGAL LOCATION: SW SW SW SW sec. 31, T. 118 N., R. 53 W.

3 - 4 Sand, medium; clean
4 - 13 Gravel, medium-fine
13 - 15 Gravel, medium-coarse; rocks

TEST HOLE NUMBER: 557
LOCATION: 118N-53W-31CCCC 2
LEGAL LOCATION: SW SW SW SW sec. 31, T. 118 N., R. 53 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 29 Gravel, fine to medium pebble, subrounded; oxidized(?), some sand

TEST HOLE NUMBER: 558
LOCATION: 118N-53W-33BBBA
LEGAL LOCATION: NE NW NW NW sec. 33, T. 118 N., R. 53 W.

21 - 26 Gravel

TEST HOLE NUMBER: 559
LOCATION: 118N-53W-33BBBB
LEGAL LOCATION: NW NW NW NW sec. 33, T. 118 N., R. 53 W.

9 - 19 Sand, medium; with clay

TEST HOLE NUMBER: 560
LOCATION: 118N-53W-33CCC
LEGAL LOCATION: SW SW SW sec. 33, T. 118 N., R. 53 W.

0 - 19 Sand, brown, medium, clayey
19 - 24 Sand, fine, clayey

TEST HOLE NUMBER: 561
LOCATION: 118N-53W-36AA
LEGAL LOCATION: NE NE sec. 36, T. 118 N., R. 53 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

2 - 8 Gravel; dry
8 - 12 Gravel; with water

TEST HOLE NUMBER: 562
LOCATION: 118N-53W-36AAAA
LEGAL LOCATION: NE NE NE NE sec. 36, T. 118 N., R. 53

2 - 14 Gravel

TEST HOLE NUMBER: 563
LOCATION: 118N-53W-36BBBB 1
LEGAL LOCATION: NW NW NW NW sec. 36, T. 118 N., R. 53 W.

2 - 7 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 564
LOCATION: 118N-53W-36BBBB 2
LEGAL LOCATION: NW NW NW NW sec. 36, T. 118 N., R. 53 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 9 Sand, orange, medium to coarse

TEST HOLE NUMBER: 565
LOCATION: 118N-53W-36DDDD 1
LEGAL LOCATION: SE SE SE SE sec. 36, T. 118 N., R. 53 W.

6 - 16 Sand; some gravel

TEST HOLE NUMBER: 566
LOCATION: 118N-53W-36DDDD 2
LEGAL LOCATION: SE SE SE SE sec. 36, T. 118 N., R. 53 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 11 Sand and gravel, tan, medium sand to fine gravel
21 - 30 Sand and gravel

TEST HOLE NUMBER: 567
LOCATION: 118N-53W-36DDDD 3
LEGAL LOCATION: SE SE SE SE sec. 36, T. 118 N., R. 53 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 11 Sand and gravel, tan, medium sand to fine gravel
21 - 30 Sand and gravel

TEST HOLE NUMBER: 568
LOCATION: 118N-54W-06BDCA
LEGAL LOCATION: NE SW SE NW sec. 06, T. 118 N., R. 54 W.

10 - 27 Sand, coarse to medium; fine gravel; tan silt or clay

TEST HOLE NUMBER: 569
LOCATION: 118N-54W-09DCDD

LEGAL LOCATION: SE SE SW SE sec. 09, T. 118 N., R. 54 W.

0 - 4 Sand and gravel, gray-brown, fine to medium sand, fine gravel, clayey, silty; oxidized
4 - 40 Sand and gravel, yellow-brown, fine to coarse sand, fine gravel, silty, very clayey; oxidized;
saturated at 12 feet

TEST HOLE NUMBER: 570

LOCATION: 118N-54W-10ADDA

LEGAL LOCATION: NE SE SE NE sec. 10, T. 118 N., R. 54 W.

1 - 12 Sand, medium to fine
25 - 26 Gravel(?)

TEST HOLE NUMBER: 571

LOCATION: 118N-54W-10CDDC 1

LEGAL LOCATION: SW SE SE SW sec. 10, T. 118 N., R. 54 W.

1 - 34 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 572

LOCATION: 118N-54W-10CDDC 2

LEGAL LOCATION: SW SE SE SW sec. 10, T. 118 N., R. 54 W.

PRELIMINARY LOG -- SUBJECT TO CHANGE

1 - 35 Sand and gravel, fine to medium sand, coarse gravel; clean

TEST HOLE NUMBER: 573

LOCATION: 118N-54W-10DDCD

LEGAL LOCATION: SE SW SE SE sec. 10, T. 118 N., R. 54 W.

6 - 14 Sand, coarse; fine gravel
23 - 53 Gravel, medium to fine, some coarse

TEST HOLE NUMBER: 574

LOCATION: 118N-54W-12BBBC

LEGAL LOCATION: SW NW NW NW sec. 12, T. 118 N., R. 54 W.

12 - 27 Sand and gravel, fine to coarse sand and fine gravel

TEST HOLE NUMBER: 575

LOCATION: 118N-54W-12DCDC

LEGAL LOCATION: SW SE SW SE sec. 12, T. 118 N., R. 54 W.

1 - 4 Sand, brown, fine, very silty, clayey; oxidized; some gravel
4 - 5 Gravel, tan-brown, medium, clayey, silty, sandy; oxidized
5 - 18 Sand and gravel, tan-brown, fine sand, fine to medium gravel, very clayey, very silty; oxidized;
some coarse gravel from 15 to 18 feet
18 - 24 Sand and gravel, tan-brown, fine sand, fine gravel, silty; oxidized; some clay, hit rock at 24 feet;
abandoned hole

TEST HOLE NUMBER: 576

LOCATION: 118N-54W-13ABAB

LEGAL LOCATION: NW NE NW NE sec. 13, T. 118 N., R. 54 W.

4 - 6 Gravel, medium to coarse

TEST HOLE NUMBER: 577

LOCATION: 118N-54W-18DDDA

LEGAL LOCATION: NE SE SE SE sec. 18, T. 118 N., R. 54 W.

20 - 26 Sand, medium; some clay; moist

TEST HOLE NUMBER: 578

LOCATION: 118N-54W-20CCCD

LEGAL LOCATION: SE SW SW SW sec. 20, T. 118 N., R. 54 W.

0 - 7 Sand, brown, fine to coarse
7 - 13 Sand, tan, fine to coarse; fine gravel

TEST HOLE NUMBER: 579

LOCATION: 118N-54W-24BBBB

LEGAL LOCATION: NW NW NW NW sec. 24, T. 118 N., R. 54 W.

20 - 28 Sand and gravel, gray-brown, fine to medium sand, fine to medium gravel, very clayey, silty, subangular

TEST HOLE NUMBER: 580

LOCATION: 118N-54W-26CBBA

LEGAL LOCATION: NE NW NW SW sec. 26, T. 118 N., R. 54 W.

1 - 5 Sand, brown, fine to medium; oxidized, moist; some clay, some silt
5 - 18 Gravel, brown, medium to coarse, sandy; oxidized, moist
18 - 20 Sand and gravel, brown, fine to medium sand, fine to medium gravel, clayey; oxidized, moist

TEST HOLE NUMBER: 581

LOCATION: 118N-54W-26CCCC

LEGAL LOCATION: SW SW SW SW sec. 26, T. 118 N., R. 54 W.

4 - 8 Sand, coarse to medium; fine gravel

TEST HOLE NUMBER: 582

LOCATION: 118N-54W-26CCDA

LEGAL LOCATION: NE SE SW SW sec. 26, T. 118 N., R. 54 W.

6 - 11 Gravel, tan-brown, medium to coarse, very silty, slightly sandy; oxidized, dry
11 - 14 Sand and gravel, brown, coarse sand, medium gravel, very silty; oxidized, dry
14 - 34 Sand and gravel, brown, medium to coarse sand, fine gravel, slightly silty; oxidized, dry

TEST HOLE NUMBER: 583

LOCATION: 118N-54W-27AAAA

LEGAL LOCATION: NE NE NE NE sec. 27, T. 118 N., R. 54 W.

4 - 5 Gravel(?); no return; driller reports drills like gravel
5 - 22 Sand, orange-tan-brown, silty; oxidized; some fine gravel
22 - 23 Gravel(?); no return; driller reports drills like gravel

TEST HOLE NUMBER: 584
LOCATION: 118N-54W-27CBBB
LEGAL LOCATION: NW NW NW SW sec. 27, T. 118 N., R. 54 W.

1 - 30 Gravel, orange-brown, medium to coarse, sandy; oxidized; some clay at 21 feet

TEST HOLE NUMBER: 585
LOCATION: 118N-54W-28ABAB
LEGAL LOCATION: NW NE NW NE sec. 28, T. 118 N., R. 54 W.

0 - 1 Sand, brown, very coarse; pea-sized gravel; dry
21 - 30 Gravel, brown, pea-sized; viscous clay present

TEST HOLE NUMBER: 586
LOCATION: 118N-54W-28BCBB
LEGAL LOCATION: NW NW SW NW sec. 28, T. 118 N., R. 54 W.

3 - 4 Sand, orange-brown, fine to coarse, clayey, silty; oxidized

TEST HOLE NUMBER: 587
LOCATION: 118N-54W-28DADD
LEGAL LOCATION: SE SE NE SE sec. 28, T. 118 N., R. 54 W.

1 - 21 Gravel, very coarse
21 - 34 Sand; saturated

TEST HOLE NUMBER: 588
LOCATION: 118N-54W-28DADD 1
LEGAL LOCATION: SE SE NE SE sec. 28, T. 118 N., R. 54 W.

2 - 30 Sand, brown, fine to medium, clayey; oxidized, moist; some gravel; saturated at 15 feet; more clay content below 25 feet

TEST HOLE NUMBER: 589
LOCATION: 118N-54W-29CD
LEGAL LOCATION: SE SW sec. 29, T. 118 N., R. 54 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

8 - 74 Gravel, very coarse; with boulders

TEST HOLE NUMBER: 590
LOCATION: 118N-54W-31BDDD
LEGAL LOCATION: SE SE SE NW sec. 31, T. 118 N., R. 54 W.

0 - 6 Gravel, very coarse; dry; medium-fine sand

TEST HOLE NUMBER: 591
LOCATION: 118N-54W-31CBC
LEGAL LOCATION: SW NW SW sec. 31, T. 118 N., R. 54 W.

2 - 7 Gravel

TEST HOLE NUMBER: 592
LOCATION: 118N-54W-31CCAB
LEGAL LOCATION: NW NE SW SW sec. 31, T. 118 N., R. 54 W.

- 1 - 4 Sand and gravel, brown, coarse sand, fine to coarse gravel, very silty; oxidized, dry
- 4 - 17 Sand and gravel, red-brown, fine to coarse sand, fine to medium gravel, slightly silty, slightly clayey; oxidized, dry
- 17 - 20 Sand, brown, fine to coarse, very clayey, silty; oxidized, saturated; few pebbles

TEST HOLE NUMBER: 593
LOCATION: 118N-54W-31CCDD 1
LEGAL LOCATION: SE SE SW SW sec. 31, T. 118 N., R. 54 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

- 7 - 18 Gravel and sand; mostly medium gravel
- 23 - 29 Gravel and sand

TEST HOLE NUMBER: 594
LOCATION: 118N-54W-31CCDD 2
LEGAL LOCATION: SE SE SW SW sec. 31, T. 118 N., R. 54 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

- 0 - 18 Sand and gravel
- 21 - 40 Gravel and sand

TEST HOLE NUMBER: 595
LOCATION: 118N-54W-32AACC
LEGAL LOCATION: SW SW NE NE sec. 32, T. 118 N., R. 54 W.

- 1 - 3 Gravel, tan-brown, coarse, sandy; dry
- 3 - 15 Sand, brown, coarse; oxidized, dry; some gravel; abandoned hole at 15 feet, unable to penetrate boulders

TEST HOLE NUMBER: 596
LOCATION: 118N-54W-32ABCC
LEGAL LOCATION: SW SW NW NE sec. 32, T. 118 N., R. 54 W.

- 0 - 5 Sand, coarse to fine, gravelly
- 5 - 9 Sand, dark-brown, medium; moist
- 9 - 19 Sand, dull-gray, medium; moist
- 19 - 29 Sand and clay, dark-tan, medium sand; no large pebbles, clayey

TEST HOLE NUMBER: 597
LOCATION: 118N-54W-32BA
LEGAL LOCATION: NE NW sec. 32, T. 118 N., R. 54 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

- 4 - 25 Sand, very fine
- 25 - 38 Sand, coarse

TEST HOLE NUMBER: 598
LOCATION: 118N-54W-32CCBA

LEGAL LOCATION: NE NW SW SW sec. 32, T. 118 N., R. 54 W.

0 - 5 Gravel, medium to coarse; some fine gravel
5 - 7 Gravel, coarse
7 - 16 Gravel, medium to fine; coarse sand

TEST HOLE NUMBER: 599

LOCATION: 118N-54W-32DAAA

LEGAL LOCATION: NE NE NE SE sec. 32, T. 118 N., R. 54 W.

0 - 14 Gravel, brown, medium to coarse, sandy, poorly sorted; oxidized, dry
14 - 38 Sand, brown, medium to coarse, clayey; oxidized, moist to saturated; some gravel

TEST HOLE NUMBER: 600

LOCATION: 118N-54W-32DABB

LEGAL LOCATION: NW NW NE SE sec. 32, T. 118 N., R. 54 W.

4 - 21 Sand and gravel, brown, fine to coarse sand, medium to coarse gravel, clayey, silty; oxidized, moist at 13 feet

TEST HOLE NUMBER: 601

LOCATION: 118N-54W-32DADD

LEGAL LOCATION: SE SE NE SE sec. 32, T. 118 N., R. 54 W.

1 - 28 Gravel, brown, medium to coarse, sandy; oxidized; saturated at 28 feet

TEST HOLE NUMBER: 602

LOCATION: 118N-54W-32DDDBA

LEGAL LOCATION: NE NW SE SE sec. 32, T. 118 N., R. 54 W.

1 - 8 Sand and gravel, brown, medium to coarse sand, coarse gravel; oxidized, dry; some clay; abandoned hole at 8 feet due to very coarse gravel

TEST HOLE NUMBER: 603

LOCATION: 118N-54W-33DDDDD

LEGAL LOCATION: SE SE SE SE sec. 33, T. 118 N., R. 54 W.

1 - 5 Gravel and sand, brown, fine to coarse gravel, medium to coarse sand; oxidized, dry
5 - 6 Sand, red-brown, coarse; oxidized, dry
6 - 45 Gravel, red-brown, fine to coarse, sandy; oxidized, moist; some clay

TEST HOLE NUMBER: 604

LOCATION: 118N-54W-34CADA

LEGAL LOCATION: NE SE NE SW sec. 34, T. 118 N., R. 54 W.

6 - 30 Sand, reddish-brown, coarse; scattered coarse gravel; dry

TEST HOLE NUMBER: 605

LOCATION: 118N-54W-34CCBB

LEGAL LOCATION: NW NW SW SW sec. 34, T. 118 N., R. 54 W.

0 - 35 Sand, reddish-brown, coarse; dry

TEST HOLE NUMBER: 606
LOCATION: 118N-54W-35CBDA
LEGAL LOCATION: NE SE NW SW sec. 35, T. 118 N., R. 54 W.

3 - 6 Sand, black, coarse; clay present
6 - 10 Sand, very coarse; pea-sized gravel, clay present
21 - 67 Gravel, blackish-gray, pea-sized; clay present, becoming fairly clean at about 50 to 60 feet

TEST HOLE NUMBER: 607
LOCATION: 118N-54W-35CCDD
LEGAL LOCATION: SE SE SW SW sec. 35, T. 118 N., R. 54 W.

1 - 10 Sand and gravel, brown, fine to medium sand, fine gravel, very silty; oxidized, dry
14 - 38 Sand and gravel, brown, fine to coarse sand, fine to coarse gravel, silty; oxidized, dry

TEST HOLE NUMBER: 608
LOCATION: 118N-54W-35CDAA
LEGAL LOCATION: NE NE SE SW sec. 35, T. 118 N., R. 54 W.

24 - 40 Gravel, brown, pea-sized; clay present

TEST HOLE NUMBER: 609
LOCATION: 118N-54W-36BBCA
LEGAL LOCATION: NE SW NW NW sec. 36, T. 118 N., R. 54 W.

1 - 2 Gravel, medium

TEST HOLE NUMBER: 610
LOCATION: 118N-55W-02AAAD
LEGAL LOCATION: SE NE NE NE sec. 02, T. 118 N., R. 55 W.

0 - 6 Sand, orange-brown, fine to medium, gravelly; oxidized
6 - 10 Sand, black-brown, fine to coarse; oxidized; some fine gravel
10 - 30 Sand, orange-brown, fine to coarse, gravelly; oxidized; saturated; some clay; coarse gravel from 17 to 20 feet

TEST HOLE NUMBER: 611
LOCATION: 118N-55W-02BBBB
LEGAL LOCATION: NW NW NW NW sec. 02, T. 118 N., R. 55 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

2 - 5 Sand and gravel, orange, medium to coarse

TEST HOLE NUMBER: 612
LOCATION: 118N-55W-05CCA
LEGAL LOCATION: NE SW SW sec. 05, T. 118 N., R. 55 W.

1 - 3 Gravel and clay

TEST HOLE NUMBER: 613
LOCATION: 118N-55W-06AABA

LEGAL LOCATION: NE NW NE NE sec. 06, T. 118 N., R. 55 W.

20 - 27 Sand, tan-brown, fine to medium, very clayey, silty; saturated

TEST HOLE NUMBER: 614

LOCATION: 118N-55W-07DD

LEGAL LOCATION: SE SE sec. 07, T. 118 N., R. 55 W.

* THIS LOG CONTAINS UNVERIFIED INFORMATION *

3 - 45 Gravel

TEST HOLE NUMBER: 615

LOCATION: 118N-55W-12DDCD

LEGAL LOCATION: SE SW SE SE sec. 12, T. 118 N., R. 55 W.

3 - 10 Sand, orange-tan-brown, fine to coarse, clayey, silty, gravelly; oxidized

TEST HOLE NUMBER: 616

LOCATION: 118N-55W-14DADC

LEGAL LOCATION: SE SW NE SE sec. 14, T. 118 N., R. 55 W.

0 - 1 Gravel, poorly sorted
1 - 16 Sand, poorly sorted; fine to medium gravel

TEST HOLE NUMBER: 617

LOCATION: 118N-55W-18ABBB

LEGAL LOCATION: NW NW NW NE sec. 18, T. 118 N., R. 55 W.

0 - 20 Sand, orange-tan-brown, fine to coarse, clayey, silty; oxidized; less silt from 9 to 20 feet; some fine gravel
20 - 27 Gravel, orange-tan-brown, fine to medium; oxidized; clean

TEST HOLE NUMBER: 618

LOCATION: 118N-55W-18DDDA

LEGAL LOCATION: NE SE SE SE sec. 18, T. 118 N., R. 55 W.

1 - 3 Sand, very fine, well-sorted
3 - 21 Sand, fine to coarse; fine to medium gravel
21 - 26 Sand, fine to coarse

TEST HOLE NUMBER: 619

LOCATION: 118N-55W-18DDDD

LEGAL LOCATION: SE SE SE SE sec. 18, T. 118 N., R. 55 W.

1 - 10 Gravel, red-tan-brown, fine to coarse, clayey, very silty; oxidized
10 - 25 Sand, tan-brown, fine to coarse, slightly clayey, silty, gravelly; oxidized; saturated at 18 feet

TEST HOLE NUMBER: 620

LOCATION: 118N-55W-20DDDD

LEGAL LOCATION: SE SE SE SE sec. 20, T. 118 N., R. 55 W.

- 1 - 19 Sand, brown, very coarse; some fine, medium, and coarse sand, minor amounts of granules and small gravel

TEST HOLE NUMBER: 621

LOCATION: 118N-55W-21BCCC

LEGAL LOCATION: SW SW SW NW sec. 21, T. 118 N., R. 55 W.

- 1 - 8 Sand, brown, coarse, some medium and very coarse

TEST HOLE NUMBER: 622

LOCATION: 118N-55W-21DCDC

LEGAL LOCATION: SW SE SW SE sec. 21, T. 118 N., R. 55 W.

- 1 - 7 Gravel, fine; coarse sand; some medium sand and gravel

TEST HOLE NUMBER: 623

LOCATION: 118N-55W-23ADAA

LEGAL LOCATION: NE NE SE NE sec. 23, T. 118 N., R. 55 W.

- 2 - 4 Sand, yellow, medium; bands of crystalline gypsum

TEST HOLE NUMBER: 624

LOCATION: 118N-55W-25CCCD

LEGAL LOCATION: SE SW SW SW sec. 25, T. 118 N., R. 55 W.

PRELIMINARY LOG -- SUBJECT TO CHANGE

- 1 - 26 Sand, orange, medium to coarse

TEST HOLE NUMBER: 625

LOCATION: 118N-55W-25DDDD

LEGAL LOCATION: SE SE SE SE sec. 25, T. 118 N., R. 55 W.

- 12 - 28 Gravel; some coarse sand

TEST HOLE NUMBER: 626

LOCATION: 118N-55W-26DDCC

LEGAL LOCATION: SW SW SE SE sec. 26, T. 118 N., R. 55 W.

- 4 - 6 Gravel and sand, brown, fine to medium gravel, fine to coarse sand, clayey, oxidized; some silt
6 - 9 Sand, brown, well-sorted; moist; clean, some pebbles, little clay
9 - 10 Gravel layer(?); poor return

TEST HOLE NUMBER: 627

LOCATION: 118N-55W-26DDDD

LEGAL LOCATION: SE SE SE SE sec. 26, T. 118 N., R. 55 W.

- 3 - 6 Sand and gravel, coarse sand to fine gravel; fairly clean
6 - 21 Sand, medium; high clay content

TEST HOLE NUMBER: 628
LOCATION: 118N-55W-27DDCC
LEGAL LOCATION: SW SW SE SE sec. 27, T. 118 N., R. 55 W.

16 - 17 Sand and gravel(?); poor return

TEST HOLE NUMBER: 629
LOCATION: 118N-55W-28CCCD
LEGAL LOCATION: SE SW SW SW sec. 28, T. 118 N., R. 55 W.

4 - 16 Sand, poorly sorted; fine to medium gravel
17 - 21 Sand, medium to coarse; fine to medium gravel, some clay

TEST HOLE NUMBER: 630
LOCATION: 118N-55W-28DDAD
LEGAL LOCATION: SE NE SE SE sec. 28, T. 118 N., R. 55 W.

1 - 2 Gravel, medium to coarse
16 - 39 Sand, fine

TEST HOLE NUMBER: 631
LOCATION: 118N-55W-29BDCC
LEGAL LOCATION: SW SW SE NW sec. 29, T. 118 N., R. 55 W.

4 - 11 Sand and gravel, brown, coarse sand, fine to medium gravel, clayey; oxidized, moist

TEST HOLE NUMBER: 632
LOCATION: 118N-55W-29CABD
LEGAL LOCATION: SE NW NE SW sec. 29, T. 118 N., R. 55 W.

5 - 8 Sand and gravel, red-brown, medium to coarse sand, fine to coarse gravel, clayey; oxidized, dry
8 - 15 Sand and gravel, red-brown, medium to coarse sand, fine to medium gravel, very clayey; oxidized, dry
21 - 22 Sand, gray, medium to coarse, slightly clayey; unoxidized, moist

TEST HOLE NUMBER: 633
LOCATION: 118N-55W-29CBAA
LEGAL LOCATION: NE NE NW SW sec. 29, T. 118 N., R. 55 W.

4 - 5 Gravel, brown, medium, sandy; oxidized, moist; some coarse sand
5 - 11 Sand, brown, fine to medium; oxidized, saturated at 8 feet; some gravel

TEST HOLE NUMBER: 634
LOCATION: 118N-55W-29CBAD
LEGAL LOCATION: SE NE NW SW sec. 29, T. 118 N., R. 55 W.

0 - 4 Sand and gravel, brown, medium to coarse sand, fine to coarse gravel, clayey; oxidized, dry
4 - 6 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, very clayey; oxidized, saturated
6 - 11 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, very clayey; oxidized, saturated
11 - 22 Sand, brown-gray, fine, clayey; partially oxidized, saturated; few fine pebbles

TEST HOLE NUMBER: 635
LOCATION: 118N-55W-30AADD
LEGAL LOCATION: SE SE NE NE sec. 30, T. 118 N., R. 55 W.

1 - 14 Sand, brown, fine to coarse in the upper 3 feet; then becomes very coarse sand with gravel

TEST HOLE NUMBER: 636
LOCATION: 118N-55W-30ADAA
LEGAL LOCATION: NE NE SE NE sec. 30, T. 118 N., R. 55 W.

9 - 13 Sand, medium to fine
18 - 30 Sand, medium to fine; some clay

TEST HOLE NUMBER: 637
LOCATION: 118N-55W-35DAAD
LEGAL LOCATION: SE NE NE SE sec. 35, T. 118 N., R. 55 W.

4 - 22 Sand, fine
22 - 30 Sand, medium

TEST HOLE NUMBER: 638
LOCATION: 118N-55W-36AADD
LEGAL LOCATION: SE SE NE NE sec. 36, T. 118 N., R. 55 W.

2 - 11 Gravel, red-brown, fine to medium, sandy; oxidized, dry

TEST HOLE NUMBER: 639
LOCATION: 118N-55W-36ACCC
LEGAL LOCATION: SW SW SW NE sec. 36, T. 118 N., R. 55 W.

1 - 3 Sand and gravel, brown, medium to coarse sand, fine to coarse gravel, clayey; oxidized, dry
3 - 11 Sand and gravel, red-brown, medium to coarse sand, fine to coarse gravel, clayey; oxidized, dry

TEST HOLE NUMBER: 640
LOCATION: 118N-55W-36BABA
LEGAL LOCATION: NE NW NE NW sec. 36, T. 118 N., R. 55 W.

1 - 3 Sand and gravel, brown, fine sand, fine to medium gravel, very clayey, silty; oxidized, dry to moist
7 - 13 Sand and gravel, dark-brown, fine to medium sand, fine to medium gravel, clayey, silty; oxidized, moist
13 - 16 Sand and gravel, brown, fine to medium sand, fine to medium gravel, very clayey, silty; oxidized, saturated
25 - 35 Sand, gray, fine, clayey, silty; unoxidized, saturated

TEST HOLE NUMBER: 641
LOCATION: 119N-51W-01BDDDB
LEGAL LOCATION: NW SE SE NW sec. 01, T. 119 N., R. 51 W.

0 - 6 Sand and gravel, orange, fine sand, medium gravel, silty; oxidized; some clay
6 - 25 Sand and gravel, orange, fine sand, medium to coarse gravel, silty; oxidized, saturated; some clay
25 - 29 Sand and gravel, orange-brown, fine to coarse sand, fine to medium gravel, silty; oxidized, saturated, more clay

TEST HOLE NUMBER: 642
LOCATION: 119N-51W-01BDDD
LEGAL LOCATION: SE SE SE NW sec. 01, T. 119 N., R. 51 W.

- 1 - 4 Sand and gravel, fine to medium sand, coarse gravel
- 4 - 23 Sand and gravel, fine to medium sand, medium gravel; hit rock at 23 feet; abandoned hole

TEST HOLE NUMBER: 643
LOCATION: 119N-51W-01CADC
LEGAL LOCATION: SW SE NE SW sec. 01, T. 119 N., R. 51 W.

- 1 - 20 Sand and gravel, fine to medium sand, medium gravel
- 20 - 34 Sand and gravel, coarse sand, medium gravel

TEST HOLE NUMBER: 644
LOCATION: 119N-51W-01CDCD
LEGAL LOCATION: SE SW SE SW sec. 01, T. 119 N., R. 51 W.

- 0 - 40 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, silty

TEST HOLE NUMBER: 645
LOCATION: 119N-51W-01DCDC
LEGAL LOCATION: SW SE SW SE sec. 01, T. 119 N., R. 51 W.

- 0 - 4 Sand, orange-brown, fine, silty, pebbly; with clay
- 4 - 10 Sand and gravel, orange-brown, fine sand, medium gravel, silty, clayey
- 10 - 14 Sand and gravel, orange-brown, fine sand, medium to coarse gravel, silty, clayey
- 14 - 19 Sand and gravel, orange-brown, fine sand, pea-size gravel, silty, clayey
- 19 - 26 Sand and gravel, orange-brown, fine sand, fine gravel, silty; with clay

TEST HOLE NUMBER: 646
LOCATION: 119N-51W-01DCDC 1
LEGAL LOCATION: SW SE SW SE sec. 01, T. 119 N., R. 51 W.

- 0 - 4 Sand, orange-brown, silty, clayey, pebbly
- 4 - 6 Sand and gravel, orange-brown, fine sand, medium gravel, silty; with clay; hit rock at 6 feet, abandoned hole

TEST HOLE NUMBER: 647
LOCATION: 119N-51W-02CBBC
LEGAL LOCATION: SW NW NW SW sec. 02, T. 119 N., R. 51 W.

- 1 - 2 Sand, red-brown, fine to medium, pebbly
- 2 - 13 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, silty; oxidized
- 13 - 17 Sand, brown, fine

TEST HOLE NUMBER: 648
LOCATION: 119N-51W-03CBBC
LEGAL LOCATION: SW NW NW SW sec. 03, T. 119 N., R. 51 W.

- 0 - 5 Sand, orange-brown, fine, silty; oxidized
- 5 - 12 Sand, tan-brown, fine to coarse; oxidized; some fine gravel
- 12 - 20 Sand and gravel, brown, fine to coarse sand, fine to medium gravel; oxidized
- 20 - 24 Sand and gravel, brown, fine to medium sand, fine to medium gravel, clayey; oxidized

TEST HOLE NUMBER: 649
LOCATION: 119N-51W-03DDDA
LEGAL LOCATION: NE SE SE SE sec. 03, T. 119 N., R. 51 W.

1 - 12 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 650
LOCATION: 119N-51W-09AAAB
LEGAL LOCATION: NW NE NE NE sec. 09, T. 119 N., R. 51 W.

4 - 15 Sand, orange-brown, fine to coarse, clayey; oxidized, some gravel stringers, hit rock at 15 feet, abandoned hole

TEST HOLE NUMBER: 651
LOCATION: 119N-51W-09AAAB 1
LEGAL LOCATION: NW NE NE NE sec. 09, T. 119 N., R. 51 W.

4 - 13.5 Sand, orange-brown, fine to coarse, clayey; oxidized, some gravel stringers; hit rock at 13 feet, abandoned hole

TEST HOLE NUMBER: 652
LOCATION: 119N-51W-09AAAB 2
LEGAL LOCATION: NW NE NE NE sec. 09, T. 119 N., R. 51 W.

9 - 17 Sand, tan-yellow-brown, fine sand, silty; oxidized; some fine gravel

TEST HOLE NUMBER: 653
LOCATION: 119N-51W-10DAAB
LEGAL LOCATION: NW NE NE SE sec. 10, T. 119 N., R. 51 W.

0 - 8 Sand, red
8 - 10 Sand, gray
15 - 20 Sand, gray

TEST HOLE NUMBER: 654
LOCATION: 119N-51W-10DABA
LEGAL LOCATION: NE NW NE SE sec. 10, T. 119 N., R. 51 W.

0 - 20 Sand, red
20 - 28 Sand, gray

TEST HOLE NUMBER: 655
LOCATION: 119N-51W-10DDBB
LEGAL LOCATION: NW NW SE SE sec. 10, T. 119 N., R. 51 W.

2 - 30 Sand, medium

TEST HOLE NUMBER: 656
LOCATION: 119N-51W-14BAAD
LEGAL LOCATION: SE NE NE NW sec. 14, T. 119 N., R. 51 W.

5 - 31 Sand, fine to medium; some gravel; wet; saturated at 31 feet

TEST HOLE NUMBER: 657
LOCATION: 119N-51W-15ABBB
LEGAL LOCATION: NW NW NW NE sec. 15, T. 119 N., R. 51 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

3 - 29 Sand, gray, fine to medium; minor amount of clay

TEST HOLE NUMBER: 658
LOCATION: 119N-51W-15CCCA 1
LEGAL LOCATION: NE SW SW SW sec. 15, T. 119 N., R. 51 W.

16 - 17 Sand and gravel, dark-gray, fine to coarse sand, little fine gravel; slightly moist
17 - 18 Sand, brownish-gray, fine, slightly silty; moist

TEST HOLE NUMBER: 659
LOCATION: 119N-51W-15CCCA 2
LEGAL LOCATION: NE SW SW SW sec. 15, T. 119 N., R. 51 W.

16 - 17 Sand and gravel, dark-gray, fine to coarse sand, little fine gravel; slightly moist
17 - 18 Sand, brownish-gray, fine, slightly silty; moist

TEST HOLE NUMBER: 660
LOCATION: 119N-51W-16ABAB
LEGAL LOCATION: NW NE NW NE sec. 16, T. 119 N., R. 51 W.

1 - 2 Sand, tan, fine to very fine, silty; oxidized
2 - 5 Sand, orange-brown, fine to very fine, silty; oxidized
5 - 7 Sand, orange-brown, fine to very fine, silty, clayey; oxidized
7 - 22 Sand, orange-brown, fine to very fine, silty; oxidized
22 - 29 Sand, orange-brown-gray, fine to very fine, silty, pebbly; oxidized; some clay

TEST HOLE NUMBER: 661
LOCATION: 119N-51W-21BCBC
LEGAL LOCATION: SW NW SW NW sec. 21, T. 119 N., R. 51 W.

0 - 6 Sand and gravel, brown, fine to medium sand, fine to medium gravel, silty; oxidized

TEST HOLE NUMBER: 662
LOCATION: 119N-51W-23BB
LEGAL LOCATION: NW NW sec. 23, T. 119 N., R. 51 W.

0 - 8 Sand, coarse
8 - 24 Gravel and sand, coarse
24 - 34 Sand, coarse to medium

TEST HOLE NUMBER: 663
LOCATION: 119N-51W-23DCCD
LEGAL LOCATION: SE SW SW SE sec. 23, T. 119 N., R. 51 W.

1 - 23 Gravel, medium to coarse, very clayey, slightly sandy; oxidized, moist
23 - 29 Gravel, fine to medium, very clayey, sandy; oxidized, saturated

TEST HOLE NUMBER: 664
LOCATION: 119N-51W-24BBBB
LEGAL LOCATION: NW NW NW NW sec. 24, T. 119 N., R. 51 W.

- 0 - 12 Sand and gravel, burnt-orange-brown, fine to coarse sand, fine to medium gravel; oxidized
- 12 - 21 Sand and gravel, orange-brown, fine to coarse sand, fine to medium gravel; oxidized; some coarse gravel stringers
- 21 - 34 Gravel, orange-brown, fine to medium, sandy; oxidized

TEST HOLE NUMBER: 665
LOCATION: 119N-51W-24CDDC
LEGAL LOCATION: SE SW SE SW sec. 24, T. 119 N., R. 51 W.

- 0 - 7 Sand and gravel, tan-brown, fine to coarse sand, fine to coarse gravel, silty; oxidized; tough drilling
- 7 - 9 Sand and gravel, orange-brown, fine to coarse sand, fine to medium gravel, silty; oxidized; sheared bit off; abandoned hole

TEST HOLE NUMBER: 666
LOCATION: 119N-51W-26AAAA
LEGAL LOCATION: NE NE NE NE sec. 26, T. 119 N., R. 51 W.

- 2 - 7 Sand and gravel, yellow-brown, fine to medium sand, fine to medium gravel, silty; oxidized
- 12 - 32 Sand and gravel, tan-brown, fine to coarse sand, fine to medium gravel, clayey; oxidized; very moist

TEST HOLE NUMBER: 667
LOCATION: 119N-51W-26DDDD
LEGAL LOCATION: SE SE SE SE sec. 26, T. 119 N., R. 51 W.

- 2 - 28 Sand, brown; with gravel

TEST HOLE NUMBER: 668
LOCATION: 119N-51W-27DDC
LEGAL LOCATION: SW SE SE SE sec. 27, T. 119 N., R. 51 W.

- 6 - 40 Gravel

TEST HOLE NUMBER: 669
LOCATION: 119N-51W-29ABAB
LEGAL LOCATION: NW NE NW NE sec. 29, T. 119 N., R. 51 W.

- 1 - 5 Sand and gravel, brown, fine to medium sand, fine to medium gravel, silty; oxidized
- 7 - 8 Gravel, very coarse; unable to penetrate past 8 feet; abandoned hole

TEST HOLE NUMBER: 670
LOCATION: 119N-51W-29DCCC
LEGAL LOCATION: SW SW SW SE sec. 29, T. 119 N., R. 51 W.

- 7 - 14 Sand, yellow-orange to tan-brown, clayey, silty; oxidized, saturated; some fine to medium gravel

TEST HOLE NUMBER: 671
LOCATION: 119N-51W-29DCCC 1

LEGAL LOCATION: SW SW SW SE sec. 29, T. 119 N., R. 51 W.

8 - 9 Gravel, medium to coarse, silty; oxidized; saturated
9 - 25 Sand and gravel; poor return; driller reports drills like sand and gravel
25 - 37 Sand, tan-brown, fine to coarse, silty, clayey; saturated

TEST HOLE NUMBER: 672

LOCATION: 119N-51W-31CCCD 2

LEGAL LOCATION: SE SW SW SW sec. 31, T. 119 N., R. 51 W.

PRELIMINARY LOG -- SUBJECT TO CHANGE

3 - 8 Sand and gravel, yellow-brown

TEST HOLE NUMBER: 673

LOCATION: 119N-51W-31DDDD

LEGAL LOCATION: SE SE SE SE sec. 31, T. 119 N., R. 51 W.

1 - 13 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 674

LOCATION: 119N-51W-33BAAA

LEGAL LOCATION: NE NE NE NW sec. 33, T. 119 N., R. 51 W.

15 - 29 Sand, tan-brown, very fine to medium, silty, clayey; oxidized; saturated

TEST HOLE NUMBER: 675

LOCATION: 119N-51W-33BCBC

LEGAL LOCATION: SW NW SW NW sec. 33, T. 119 N., R. 51 W.

1 - 7 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel, silty; oxidized
18 - 24 Sand, orange-tan-brown, fine to coarse, silty; oxidized; saturated

TEST HOLE NUMBER: 676

LOCATION: 119N-51W-35BABA

LEGAL LOCATION: NE NW NE NW sec. 35, T. 119 N., R. 51 W.

1 - 8 Gravel, fine to medium, clayey, slightly sandy; oxidized

TEST HOLE NUMBER: 677

LOCATION: 119N-51W-36CBBB

LEGAL LOCATION: NW NW NW SW sec. 36, T. 119 N., R. 51 W.

4 - 48 Gravel, fine to medium, slightly sandy, very clayey; oxidized, dry, saturated at 10 feet

TEST HOLE NUMBER: 678

LOCATION: 119N-52W-03CCDD

LEGAL LOCATION: SE SE SW SW sec. 03, T. 119 N., R. 52 W.

7 - 8 Gravel, very coarse; no penetration; abandoned hole after 4 tries; pseudo end depth

TEST HOLE NUMBER: 679

LOCATION: 119N-52W-03DCCD

LEGAL LOCATION: SE SW SW SE sec. 03, T. 119 N., R. 52 W.

8 - 9 Gravel, very coarse; could not penetrate

TEST HOLE NUMBER: 680

LOCATION: 119N-52W-09BCCC

LEGAL LOCATION: SW SW SW NW sec. 09, T. 119 N., R. 52 W.

3 - 18 Sand and gravel, tan-brown, fine to medium sand, fine to medium gravel, silty; oxidized; some
cobble-size gravel
18 - 24 Gravel, gray, coarse, clayey, silty; some sand
24 - 43 Gravel, fine to coarse, silty; some sand; moist; saturated at 38 feet

TEST HOLE NUMBER: 681

LOCATION: 119N-52W-09CBCB

LEGAL LOCATION: NW SW NW SW sec. 09, T. 119 N., R. 52 W.

1 - 6 Sand and gravel, gray-brown, fine to medium sand, fine to medium gravel, silty, clayey; partially
oxidized (alluvium)
6 - 10 Sand and gravel, yellow-brown, fine to medium sand, fine to medium gravel, silty; oxidized

TEST HOLE NUMBER: 682

LOCATION: 119N-52W-12ABBA

LEGAL LOCATION: NE NW NW NE sec. 12, T. 119 N., R. 52 W.

5 - 30 Sand and gravel, yellow-brown, medium to coarse sand, fine to medium gravel, clayey, silty;
oxidized; saturated at 11 feet

TEST HOLE NUMBER: 683

LOCATION: 119N-52W-12BCCC

LEGAL LOCATION: SW SW SW NW sec. 12, T. 119 N., R. 52 W.

2 - 4 Sand, orange-brown, fine, silty; oxidized
4 - 8 Sand and gravel, orange-brown, fine sand, fine to medium gravel, silty; oxidized
8 - 12 Gravel, coarse; little return
14 - 16 Sand and gravel, tan-brown, fine to medium sand, fine to medium gravel, clayey, silty; oxidized;
saturated
16 - 34 Gravel, gray-brown, fine to medium, clayey; unoxidized; saturated

TEST HOLE NUMBER: 684

LOCATION: 119N-52W-14CCBB

LEGAL LOCATION: NW NW SW SW sec. 14, T. 119 N., R. 52 W.

1 - 7 Sand and gravel, orange-brown, fine sand, fine to coarse gravel, silty; oxidized
7 - 15 Sand and gravel, tan-brown, fine to coarse sand, fine gravel, silty; oxidized; saturated

TEST HOLE NUMBER: 685

LOCATION: 119N-52W-16BCBB

LEGAL LOCATION: NW NW SW NW sec. 16, T. 119 N., R. 52 W.

2 - 4 Gravel, tan-brown, fine to coarse, sandy; oxidized
4 - 7 Sand and gravel, tan-yellow-brown, fine to coarse sand, fine to medium gravel, oxidized
7 - 11 Sand and gravel, tan-yellow-brown, fine to coarse sand, fine gravel; oxidized; saturated; some silt

- 11 - 19 Sand, tan-brown, fine to coarse; oxidized; saturated; some clay
- 19 - 21 Sand, gray-brown, fine to coarse; saturated; some clay

TEST HOLE NUMBER: 686
LOCATION: 119N-52W-21DCDC
LEGAL LOCATION: SW SE SW SE sec. 21, T. 119 N., R. 52 W.

- 1 - 5 Sand and gravel, dark-gray-brown, fine to medium sand, fine to medium gravel, silty; oxidized

TEST HOLE NUMBER: 687
LOCATION: 119N-52W-22CCCC
LEGAL LOCATION: SW SW SW SW sec. 22, T. 119 N., R. 52 W.

- 17 - 48 Sand, tan-reddish-brown, medium to coarse, clayey, silty; oxidized; saturated; some fine to medium gravel

TEST HOLE NUMBER: 688
LOCATION: 119N-52W-22DCCC
LEGAL LOCATION: SW SW SW SE sec. 22, T. 119 N., R. 52 W.

- 6 - 11 Sand and gravel, gray-brown, fine to medium sand, fine gravel, silty

TEST HOLE NUMBER: 689
LOCATION: 119N-52W-27DDCC
LEGAL LOCATION: SW SW SE SE sec. 27, T. 119 N., R. 52 W.

- 3 - 20 Sand and gravel, brown, fine sand, fine to medium gravel, silty; oxidized; saturated at 9 feet

TEST HOLE NUMBER: 690
LOCATION: 119N-52W-31CDDC
LEGAL LOCATION: SW SE SE SW sec. 31, T. 119 N., R. 52 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

- 1 - 12 Sand and gravel, medium sand to medium gravel; tan clay

TEST HOLE NUMBER: 691
LOCATION: 119N-52W-31DDDD
LEGAL LOCATION: SE SE SE SE sec. 31, T. 119 N., R. 52 W.

- 3 - 25 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 692
LOCATION: 119N-52W-32CCDD
LEGAL LOCATION: SE SE SW SW sec. 32, T. 119 N., R. 52 W.

- 0 - 2 Sand and gravel, yellow-tan-brown, fine to coarse sand, fine gravel, silty; oxidized
- 2 - 10 Sand and gravel, brown-black, coarse sand, fine to medium gravel, silty; oxidized; wet; some clay
- 10 - 30 Sand and gravel, golden-tan-brown, fine to coarse sand, fine gravel, silty, clayey; oxidized; saturated

TEST HOLE NUMBER: 693
LOCATION: 119N-52W-32DAAA

LEGAL LOCATION: NE NE NE SE sec. 32, T. 119 N., R. 52 W.

- 1 - 4 Sand and gravel, yellow-tan-brown, fine to coarse sand, fine to coarse gravel; oxidized
- 4 - 7 Gravel, tan-brown, fine to medium, sandy; oxidized; some silt
- 7 - 16 Sand and gravel, yellow-tan-brown, fine to coarse sand, fine gravel, very clayey, silty; oxidized; wet
- 23 - 31 Sand and gravel, yellow-tan-brown, fine to coarse sand, fine gravel, silty, clayey at 30 feet; oxidized, saturated

TEST HOLE NUMBER: 694

LOCATION: 119N-53W-18BBBB

LEGAL LOCATION: NW NW NW NW sec. 18, T. 119 N., R. 53 W.

- 4 - 5 Gravel, medium to coarse; poor return

TEST HOLE NUMBER: 695

LOCATION: 119N-53W-19CCDD

LEGAL LOCATION: SE SE SW SW sec. 19, T. 119 N., R. 53 W.

- 0 - 2 Sand, tan-brown, fine to medium, clayey, silty, pebbly; oxidized; some gravel
- 2 - 4 Gravel, tan-brown, coarse, silty, sandy; oxidized
- 4 - 5 Sand, tan-brown, fine, silty, pebbly; oxidized

TEST HOLE NUMBER: 696

LOCATION: 119N-53W-30CDDC

LEGAL LOCATION: SW SE SE SW sec. 30, T. 119 N., R. 53 W.

- 4 - 5 Gravel, orange-tan, fine to medium, silty; oxidized

TEST HOLE NUMBER: 697

LOCATION: 119N-53W-31ABBA

LEGAL LOCATION: NE NW NW NE sec. 31, T. 119 N., R. 53 W.

- 15 - 17 Gravel, coarse to cobble-size; could not penetrate past 17 feet; abandoned hole

TEST HOLE NUMBER: 698

LOCATION: 119N-53W-32CBCC

LEGAL LOCATION: SW SW NW SW sec. 32, T. 119 N., R. 53 W.

- 5 - 25 Sand

TEST HOLE NUMBER: 699

LOCATION: 119N-53W-32CCDD

LEGAL LOCATION: SE SE SW SW sec. 32, T. 119 N., R. 53 W.

- 7 - 11 Sand, yellow-tan-brown, fine to coarse, very clayey, silty; oxidized; saturated

TEST HOLE NUMBER: 700

LOCATION: 119N-54W-01CDCC

LEGAL LOCATION: SE SW SE SW sec. 01, T. 119 N., R. 54 W.

- 2 - 3 Sand, orange-brown, fine to medium, pebbly; oxidized

TEST HOLE NUMBER: 701
LOCATION: 119N-54W-05CCBB
LEGAL LOCATION: NW NW SW SW sec. 05, T. 119 N., R. 54 W.

1 - 6 Sand, tan-brown, very fine, silty; oxidized

TEST HOLE NUMBER: 702
LOCATION: 119N-54W-13ABAB
LEGAL LOCATION: NW NE NW NE sec. 13, T. 119 N., R. 54 W.

0 - 6 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel, clayey, silty; oxidized

TEST HOLE NUMBER: 703
LOCATION: 119N-54W-20CCCC
LEGAL LOCATION: SW SW SW SW sec. 20, T. 119 N., R. 54 W.

12 - 17 Gravel, tan-yellow-brown, silty, pebbly; oxidized (outwash)

TEST HOLE NUMBER: 704
LOCATION: 119N-54W-26BBBB
LEGAL LOCATION: SE SE SE NW sec. 26, T. 119 N., R. 54 W.

8 - 18 Sand, fine

TEST HOLE NUMBER: 705
LOCATION: 119N-54W-34CDCD
LEGAL LOCATION: SE SW SE SW sec. 34, T. 119 N., R. 54 W.

4 - 7 Sand, orange-tan-brown, fine to coarse, silty, very gravelly; oxidized; wet
7 - 15 Sand, orange-tan-brown, fine to coarse, very clayey, silty; oxidized; saturated

TEST HOLE NUMBER: 706
LOCATION: 119N-54W-36DDDD
LEGAL LOCATION: SE SE SE SE sec. 36, T. 119 N., R. 54 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

15 - 68 Sand, coarse; to medium gravel; many clay stringers; oxidized

TEST HOLE NUMBER: 707
LOCATION: 119N-54W-36DDDD 1
LEGAL LOCATION: SE SE SE SE sec. 36, T. 119 N., R. 54 W.

4 - 5 Gravel, orange-tan-brown, fine to medium, sandy; oxidized
5 - 7 Sand, orange-tan-brown, fine to coarse, silty; oxidized
15 - 16 Gravel, fine to cobbles; could not penetrate past 16 feet; abandoned hole

TEST HOLE NUMBER: 708
LOCATION: 119N-55W-18CCCB
LEGAL LOCATION: NW SW SW SW sec. 18, T. 119 N., R. 55 W.

6 - 8 Sand, fine, slightly gravelly

- 8 - 9 Sand, fine, slightly gravelly; saturated
- 9 - 26 Sand, fine, silty, clayey; some pebbles

TEST HOLE NUMBER: 709
LOCATION: 119N-55W-19BBBC 1
LEGAL LOCATION: SW NW NW NW sec. 19, T. 119 N., R. 55 W.

- 0 - 36 Sand and gravel, medium to coarse sand, fine to medium gravel; clay layer from 26 to 28 feet

TEST HOLE NUMBER: 710
LOCATION: 119N-55W-19BBBC 2
LEGAL LOCATION: SW NW NW NW sec. 19, T. 119 N., R. 55 W.

- 5 - 14 Sand, brown, coarse to very coarse; with some gravel

TEST HOLE NUMBER: 711
LOCATION: 119N-55W-20BCCB 1
LEGAL LOCATION: NW SW SW NW sec. 20, T. 119 N., R. 55 W.

- 0 - 21 Sand, brown, medium to coarse; with some gravel

TEST HOLE NUMBER: 712
LOCATION: 119N-55W-20BCCB 2
LEGAL LOCATION: NW SW SW NW sec. 20, T. 119 N., R. 55 W.

- 0 - 17 Sand, brown, medium to coarse; with some gravel

TEST HOLE NUMBER: 713
LOCATION: 119N-55W-20BCCC
LEGAL LOCATION: SW SW SW NW sec. 20, T. 119 N., R. 55 W.

- 1 - 4 Gravel, poorly sorted

TEST HOLE NUMBER: 714
LOCATION: 119N-55W-28DBDD
LEGAL LOCATION: SE SE NW SE sec. 28, T. 119 N., R. 55 W.

- 15 - 31 Gravel and rock, yellow

TEST HOLE NUMBER: 715
LOCATION: 119N-55W-29AAAA
LEGAL LOCATION: NE NE NE NE sec. 29, T. 119 N., R. 55 W.

- 9 - 12 Sand, yellow-brown, coarse to very coarse

TEST HOLE NUMBER: 716
LOCATION: 119N-55W-29AABB 1
LEGAL LOCATION: NW NW NE NE sec. 29, T. 119 N., R. 55 W.

- 5 - 15 Sand, brown, medium to coarse; with some gravel, granules, and very coarse sand grains

TEST HOLE NUMBER: 717
LOCATION: 119N-55W-29AABB 2
LEGAL LOCATION: NW NW NE NE sec. 29, T. 119 N., R. 55 W.

9 - 29 Sand, brown, coarse to very coarse; with some gravel

TEST HOLE NUMBER: 718
LOCATION: 119N-55W-29BDDD
LEGAL LOCATION: SE SE SE NW sec. 29, T. 119 N., R. 55 W.

1 - 4 Gravel, orange-tan-brown, fine to coarse, clayey, silty; oxidized; dry
4 - 6 Sand, orange-tan-brown, fine to coarse, silty; oxidized; some fine gravel
6 - 10 Sand, gray-tan, fine to coarse, clayey, silty; oxidized; saturated at 8 feet
10 - 17 Sand, tan-brown, fine to coarse, clayey, silty; oxidized; saturated
17 - 22 Sand, gray-tan-brown, fine to coarse, very clayey, silty; unoxidized; some fine gravel

TEST HOLE NUMBER: 719
LOCATION: 119N-55W-33DDAA
LEGAL LOCATION: NE NE SE SE sec. 33, T. 119 N., R. 55 W.

0 - 2 Gravel, poorly sorted
2 - 6 Sand, medium to fine; some fine gravel
6 - 9 Gravel, fine; coarse to medium sand
9 - 13 Sand, medium to fine; silt
13 - 27 Sand, coarse to medium

TEST HOLE NUMBER: 720
LOCATION: 119N-55W-34AAAD
LEGAL LOCATION: SE NE NE NE sec. 34, T. 119 N., R. 55 W.

7 - 8 Sand and clay, fine, well-sorted sand

TEST HOLE NUMBER: 721
LOCATION: 119N-55W-34BCCC
LEGAL LOCATION: SW SW SW NW sec. 34, T. 119 N., R. 55 W.

0 - 18 Sand, brown, medium to coarse; secondary amounts of fine and very coarse sand, trace of gravel

TEST HOLE NUMBER: 722
LOCATION: 119N-55W-34CABA
LEGAL LOCATION: NE NW NE SW sec. 34, T. 119 N., R. 55 W.

7 - 10 Gravel, brown; small gravel up to 3/8-inch with coarse and very coarse sand
25 - 41 Sand, gray, medium to very coarse; minor amounts of gravel

TEST HOLE NUMBER: 723
LOCATION: 119N-55W-34CACA
LEGAL LOCATION: NE SW NE SW sec. 34, T. 119 N., R. 55 W.

6 - 17 Sand, brown, coarse to very coarse

TEST HOLE NUMBER: 724
LOCATION: 119N-55W-34CBCB

LEGAL LOCATION: NW SW NW SW sec. 34, T. 119 N., R. 55 W.

8 - 22 Sand, brown, very coarse; with 1/4-inch gravel, also granules and coarse sand, minor amounts of fine and medium sand

TEST HOLE NUMBER: 725

LOCATION: 119N-55W-34CCBB

LEGAL LOCATION: NW NW SW SW sec. 34, T. 119 N., R. 55 W.

4 - 10 Sand, brown, medium to very coarse

TEST HOLE NUMBER: 726

LOCATION: 119N-55W-34CDBA

LEGAL LOCATION: NE NW SE SW sec. 34, T. 119 N., R. 55 W.

5 - 11 Sand, brown, very coarse to coarse; poorly sorted

TEST HOLE NUMBER: 727

LOCATION: 119N-55W-35CBCB

LEGAL LOCATION: NW SW NW SW sec. 35, T. 119 N., R. 55 W.

0 - 1 Gravel, orange-tan-brown, medium to coarse, very silty, very clayey; oxidized

APPENDIX B. List of test holes in Codington County, South Dakota, which encountered sand or gravel within 25 feet of the land surface and are located within the boundary of the Lake Traverse Indian Reservation.

Lithologic descriptions, as listed, have been condensed from data contained in logs on file at the South Dakota Geological Survey, 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: 118N-52W-04DDCC R
LEGAL LOCATION: SW SW SE SE sec. 04, T. 118 N., R. 52 W.

2 - 10 Sand, fine
15 - 30 Sand

TEST HOLE NUMBER: 2
LOCATION: 118N-52W-05ABBB R
LEGAL LOCATION: NW NW NW NE sec. 05, T. 118 N., R. 52 W.

9 - 10 Sand, light-brown, fine to medium, clayey; saturated
12 - 13 Sand, light-brown, fine to medium, clayey; saturated
13 - 24 Sand and gravel, brown, fine to coarse sand, fine gravel, slightly clayey; saturated

TEST HOLE NUMBER: 3
LOCATION: 118N-52W-08CDDD R
LEGAL LOCATION: SE SE SE SW sec. 08, T. 118 N., R. 52 W.

1 - 17 Sand and gravel, brown, fine to medium sand, fine to coarse gravel, clayey, silty; oxidized; saturated at 12 feet
17 - 25 Sand and gravel, gray-brown, fine to medium sand, fine to medium gravel, very clayey, silty; saturated

TEST HOLE NUMBER: 4
LOCATION: 118N-52W-09ABDD R
LEGAL LOCATION: SE SE NW NE sec. 09, T. 118 N., R. 52 W.

1 - 10 Sand
10 - 37 Gravel, coarse; rocks

TEST HOLE NUMBER: 5
LOCATION: 118N-52W-10BBBB R
LEGAL LOCATION: NW NW NW NW sec. 10, T. 118 N., R. 52 W.

6 - 14 Sand, medium to coarse; some gravel
15 - 20 Sand, medium to coarse; some dry gravel

TEST HOLE NUMBER: 6
LOCATION: 118N-52W-15BABA R
LEGAL LOCATION: NE NW NE NW sec. 15, T. 118 N., R. 52 W.

2 - 5 Sand and gravel, brown, medium to coarse sand, fine to medium gravel, slightly clayey; oxidized, damp
5 - 7 Sand, brown, medium to coarse, slightly clayey, gravelly; oxidized, damp
7 - 8 Sand and gravel, brown, medium to coarse sand, fine to coarse gravel, slightly clayey; oxidized, damp

- 8 - 10 Sand, brown, fine to coarse, clayey; oxidized, moist; few fine pebbles
- 10 - 12 Sand, brown, fine to coarse, clayey; oxidized, saturated; few pebbles
- 12 - 38 Sand and gravel, brown, fine to coarse sand, fine gravel, clayey; oxidized, saturated

TEST HOLE NUMBER: 7
 LOCATION: 118N-52W-15BBB R
 LEGAL LOCATION: NW NW NW sec. 15, T. 118 N., R. 52 W.

- 12 - 19 Gravel, fine, silty
- 19 - 36 Gravel, fine

TEST HOLE NUMBER: 8
 LOCATION: 118N-52W-16ABBB R
 LEGAL LOCATION: NW NW NW NE sec. 16, T. 118 N., R. 52 W.

- 2 - 9 Sand, brown, fine to coarse; few pebbles, saturated at 7 feet, oxidized

TEST HOLE NUMBER: 9
 LOCATION: 118N-52W-16ABBB 1R
 LEGAL LOCATION: NW NW NW NE sec. 16, T. 118 N., R. 52 W.

- 3 - 36 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 10
 LOCATION: 118N-52W-16ABBB 2R
 LEGAL LOCATION: NW NW NW NE sec. 16, T. 118 N., R. 52 W.
 PRELIMINARY LOG - SUBJECT TO CHANGE

- 3 - 37 Sand, medium

TEST HOLE NUMBER: 11
 LOCATION: 118N-52W-16CCCC R
 LEGAL LOCATION: SW SW SW SW sec. 16, T. 118 N., R. 52 W.

- 3 - 35 Sand, medium to coarse

TEST HOLE NUMBER: 12
 LOCATION: 118N-52W-16CDDD R
 LEGAL LOCATION: SE SE SE SW sec. 16, T. 118 N., R. 52 W.

- 4 - 17 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, slightly silty; oxidized
- 17 - 18 Gravel, coarse; poor return

TEST HOLE NUMBER: 13
 LOCATION: 118N-52W-16DDDD R
 LEGAL LOCATION: SE SE SE SE sec. 16, T. 118 N., R. 52 W.

- 3 - 25 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 14
 LOCATION: 118N-52W-21ADAA R

LEGAL LOCATION: NE NE SE NE sec. 21, T. 118 N., R. 52 W.

5 - 6 Sand, brown, fine to coarse, clayey, poorly sorted; oxidized, dry; some gravel
12 - 14 Sand, brown, fine to coarse, clayey, gravelly, poorly sorted; oxidized, moist
14 - 24 Gravel, brown, medium to coarse, clayey, sandy; oxidized, moist; saturated at 21 feet

TEST HOLE NUMBER: 15

LOCATION: 118N-52W-21CCCC R

LEGAL LOCATION: SW SW SW SW sec. 21, T. 118 N., R. 52 W.

6 - 65 Sand, brown, medium; with occasional pebbles, water at 64 feet

TEST HOLE NUMBER: 16

LOCATION: 118N-52W-21DDC R

LEGAL LOCATION: SW SE SE sec. 21, T. 118 N., R. 52 W.

1 - 3 Sand, fine
5 - 10 Sand and gravel
10 - 15 Gravel; some sand
15 - 30 Sand

TEST HOLE NUMBER: 17

LOCATION: 118N-52W-21DDD R

LEGAL LOCATION: SE SE SE sec. 21, T. 118 N., R. 52 W.

9 - 24 Sand; some clay

TEST HOLE NUMBER: 18

LOCATION: 118N-52W-22BBB R

LEGAL LOCATION: NW NW NW sec. 22, T. 118 N., R. 52 W.

0 - 14 Sand, red; some clay
14 - 34 Sand, brown; some clay

TEST HOLE NUMBER: 19

LOCATION: 118N-52W-22BBBA R

LEGAL LOCATION: NE NW NW NW sec. 22, T. 118 N., R. 52 W.

1 - 33 Sand, coarse; some pebbles

TEST HOLE NUMBER: 20

LOCATION: 118N-52W-27BBAB R

LEGAL LOCATION: NW NE NW NW sec. 27, T. 118 N., R. 52 W.

5 - 20 Sand and gravel, medium

TEST HOLE NUMBER: 21

LOCATION: 119N-52W-01BBCC R

LEGAL LOCATION: SW SW NW NW sec. 01, T. 119 N., R. 52 W.

1 - 6 Sand and gravel, yellow-brown, fine sand, fine to medium gravel, silty; oxidized
6 - 11 Sand, tan-brown, fine, well-sorted, silty; oxidized; some pebbles

11 - 13 Sand and gravel, tan-brown, fine sand, fine to medium gravel, silty, slightly clayey, rounded; oxidized

TEST HOLE NUMBER: 22
LOCATION: 119N-52W-02BBCB R
LEGAL LOCATION: NW SW NW NW sec. 02, T. 119 N., R. 52 W.

7 - 9 Gravel, brown, fine to medium, silty, sandy; oxidized
9 - 11 Sand, brown, fine to medium, silty; oxidized; some pebbles
11 - 15 Sand, brown, fine to medium, very clayey, very silty, pebbly, subrounded, poorly sorted; oxidized

TEST HOLE NUMBER: 23
LOCATION: 119N-52W-02BBCC R
LEGAL LOCATION: SW SW NW NW sec. 02, T. 119 N., R. 52 W.

3 - 4 Gravel, coarse
4 - 9 Sand, medium to coarse, silty; some gravel
9 - 14 Gravel
14 - 24 Sand, medium to coarse
24 - 36 Sand, medium

TEST HOLE NUMBER: 24
LOCATION: 119N-52W-04ADDD R
LEGAL LOCATION: SE SE SE NE sec. 04, T. 119 N., R. 52 W.

1 - 11 Sand and gravel, coarse to medium

TEST HOLE NUMBER: 25
LOCATION: 119N-52W-05AAAA R
LEGAL LOCATION: NE NE NE NE sec. 05, T. 119 N., R. 52 W.

2 - 6 Sand, medium to coarse

TEST HOLE NUMBER: 26
LOCATION: 119N-52W-05ABBB R
LEGAL LOCATION: NW NW NW NE sec. 05, T. 119 N., R. 52 W.

0 - 4 Sand and gravel, orange-tan-brown, very fine to coarse sand, fine gravel, silty; oxidized; dry
4 - 12 Sand, tan-brown, very fine to coarse, very silty, very clayey; oxidized; saturated
12 - 25 Sand, tan-green, very fine to coarse, very clayey, very silty; oxidized; saturated
25 - 35 Sand and gravel, olive-gray, fine to coarse sand, fine gravel, clayey, silty; unoxidized; saturated

TEST HOLE NUMBER: 27
LOCATION: 119N-52W-05BBBA R
LEGAL LOCATION: NE NW NW NW sec. 05, T. 119 N., R. 52 W.

0 - 20 Sand, orange-tan-brown, fine to coarse, silty, clayey; oxidized; some fine gravel; wet at 15 feet
20 - 48 Sand, olive-gray, fine to coarse, silty, clayey; unoxidized; some fine gravel; saturated

TEST HOLE NUMBER: 28
LOCATION: 119N-52W-05CCDD R

LEGAL LOCATION: SE SE SW SW sec. 05, T. 119 N., R. 52 W.

- 3 - 23 Sand, tan-brown, fine to coarse, very clayey, silty; oxidized; some fine gravel; saturated at 4 feet
- 23 - 41 Sand, gray-tan-brown, fine to coarse, very clayey, silty; mostly oxidized; some fine gravel; gravel stringer at 40 feet

TEST HOLE NUMBER: 29

LOCATION: 119N-52W-05CDDC R

LEGAL LOCATION: SW SE SE SW sec. 05, T. 119 N., R. 52 W.

- 1 - 4 Sand and gravel, tan-brown, fine to coarse sand, fine to medium gravel, clayey, silty; oxidized
- 4 - 10 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel, silty, clayey; oxidized; moist; coarse gravel stringer from 6 to 8 feet
- 10 - 15 Sand and gravel, yellow-orange-tan-brown, fine to coarse sand, fine to coarse gravel, clayey, silty; oxidized; saturated

TEST HOLE NUMBER: 30

LOCATION: 119N-52W-07AAAA R

LEGAL LOCATION: NE NE NE NE sec. 07, T. 119 N., R. 52 W.

- 10 - 17 Sand and gravel, medium to coarse; with large rocks and clay
- 20 - 42 Sand and gravel, brown, medium to coarse

TEST HOLE NUMBER: 31

LOCATION: 119N-52W-07DCDD R

LEGAL LOCATION: SE SE SW SE sec. 07, T. 119 N., R. 52 W.

- 14 - 19 Sand, orange-brown, fine to coarse, silty; oxidized; some fine gravel
- 19 - 29 Sand and gravel, orange-brown, fine to coarse sand, coarse gravel, silty; oxidized

TEST HOLE NUMBER: 32

LOCATION: 119N-52W-09ADDC R

LEGAL LOCATION: SW SE SE NE sec. 09, T. 119 N., R. 52 W.

- 4 - 18 Sand and gravel

TEST HOLE NUMBER: 33

LOCATION: 119N-52W-09DDDD R

LEGAL LOCATION: SE SE SE SE sec. 09, T. 119 N., R. 52 W.

- 2 - 28 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 34

LOCATION: 119N-52W-10BBCB 1R

LEGAL LOCATION: NW SW NW NW sec. 10, T. 119 N., R. 52 W.

- 5 - 21 Sand and gravel

TEST HOLE NUMBER: 35

LOCATION: 119N-52W-10BBCB 2R

LEGAL LOCATION: NW SW NW NW sec. 10, T. 119 N., R. 52 W.

- 4 - 19 Sand and gravel

TEST HOLE NUMBER: 36
LOCATION: 119N-52W-10BBCC 1R
LEGAL LOCATION: SW SW NW NW sec. 10, T. 119 N., R. 52 W.

5 - 22 Sand and gravel

TEST HOLE NUMBER: 37
LOCATION: 119N-52W-10BCBB 1R
LEGAL LOCATION: NW NW SW NW sec. 10, T. 119 N., R. 52 W.

5 - 19 Sand and gravel

TEST HOLE NUMBER: 38
LOCATION: 119N-52W-10BCBB 2R
LEGAL LOCATION: NW NW SW NW sec. 10, T. 119 N., R. 52 W.

4 - 20 Sand and gravel

TEST HOLE NUMBER: 39
LOCATION: 119N-52W-10BCCD R
LEGAL LOCATION: SE SW SW NW sec. 10, T. 119 N., R. 52 W.

2 - 10 Sand and clay
10 - 18 Sand and gravel

TEST HOLE NUMBER: 40
LOCATION: 119N-52W-10BCDD R
LEGAL LOCATION: SE SE SW NW sec. 10, T. 119 N., R. 52 W.

2 - 18 Sand and gravel

TEST HOLE NUMBER: 41
LOCATION: 119N-52W-10DDDD R
LEGAL LOCATION: SE SE SE SE sec. 10, T. 119 N., R. 52 W.

2 - 16 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 42
LOCATION: 119N-52W-15BBAA R
LEGAL LOCATION: NE NE NW NW sec. 15, T. 119 N., R. 52 W.

6 - 21 Sand, tan-brown, fine, rounded, well-sorted; oxidized; saturated; some silt; some gravel
21 - 30 Sand, tan-brown, fine to medium, rounded; oxidized; saturated; some pebbles; some gravel

TEST HOLE NUMBER: 43
LOCATION: 119N-52W-15DCCC R
LEGAL LOCATION: SW SW SW SE sec. 15, T. 119 N., R. 52 W.

1 - 20 Sand, medium

TEST HOLE NUMBER: 44
LOCATION: 119N-52W-15DDDA R

LEGAL LOCATION: NE SE SE SE sec. 15, T. 119 N., R. 52 W.

3 - 11 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 45

LOCATION: 119N-52W-15DDDA 1R

LEGAL LOCATION: NE SE SE SE sec. 15, T. 119 N., R. 52 W.

2 - 9 Sand and gravel, dark-brown, fine to coarse sand, fine to medium gravel; saturated at 7 feet, oxidized

TEST HOLE NUMBER: 46

LOCATION: 119N-52W-15DDDA 2R

LEGAL LOCATION: NE SE SE SE sec. 15, T. 119 N., R. 52 W.

PRELIMINARY LOG -- SUBJECT TO CHANGE

2 - 14 Sand and gravel, orange, medium sand, medium gravel

TEST HOLE NUMBER: 47

LOCATION: 119N-52W-16CCD R

LEGAL LOCATION: SE SW SW sec. 16, T. 119 N., R. 52 W.

10 - 15 Sand

TEST HOLE NUMBER: 48

LOCATION: 119N-52W-17AAAA R

LEGAL LOCATION: NE NE NE NE sec. 17, T. 119 N., R. 52 W.

4 - 5 Gravel

TEST HOLE NUMBER: 49

LOCATION: 119N-52W-20BCBC R

LEGAL LOCATION: SW NW SW NW sec. 20, T. 119 N., R. 52 W.

16 - 25 Sand and gravel, yellow-brown, fine to coarse sand, medium to coarse gravel, silty; oxidized; saturated

TEST HOLE NUMBER: 50

LOCATION: 119N-52W-20CCCC R

LEGAL LOCATION: SW SW SW SW sec. 20, T. 119 N., R. 52 W.

5 - 7 Sand and gravel; rocks

TEST HOLE NUMBER: 51

LOCATION: 119N-52W-20DDDD R

LEGAL LOCATION: SE SE SE SE sec. 20, T. 119 N., R. 52 W.

4 - 9 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 52

LOCATION: 119N-52W-20DDDD 1R

LEGAL LOCATION: SE SE SE SE sec. 20, T. 119 N., R. 52 W.

5 - 10 Sand and gravel, tan-brown, fine sand, fine to medium gravel, clayey, very silty; oxidized

TEST HOLE NUMBER: 53

LOCATION: 119N-52W-20DDDD 2R

LEGAL LOCATION: SE SE SE SE sec. 20, T. 119 N., R. 52 W.

PRELIMINARY LOG -- SUBJECT TO CHANGE

2 - 6 Sand, orange, medium to coarse
6 - 12 Gravel, coarse

TEST HOLE NUMBER: 54

LOCATION: 119N-52W-21AAAA R

LEGAL LOCATION: NE NE NE NE sec. 21, T. 119 N., R. 52 W.

1 - 48 Sand and gravel, tan-brown, fine sand, fine to medium gravel, silty; oxidized; saturated at 33 feet; some clay

TEST HOLE NUMBER: 55

LOCATION: 119N-52W-21DDAA R

LEGAL LOCATION: NE NE SE SE sec. 21, T. 119 N., R. 52 W.

1 - 4 Gravel and sand, coarse
4 - 9 Sand, medium to coarse; grades into fine gravel and coarse sand
9 - 14 Gravel, fine; coarse sand
14 - 19 Gravel and sand, coarse
24 - 34 Gravel, coarse

TEST HOLE NUMBER: 56

LOCATION: 119N-52W-22AAAB R

LEGAL LOCATION: NW NE NE NE sec. 22, T. 119 N., R. 52 W.

10 - 26 Sand and gravel, brown, fine to coarse sand, fine to medium gravel, silty; oxidized; saturated at 10 feet

TEST HOLE NUMBER: 57

LOCATION: 119N-52W-22BBBB R

LEGAL LOCATION: NW NW NW NW sec. 22, T. 119 N., R. 52 W.

4 - 29 Sand, medium to coarse; medium gravel

TEST HOLE NUMBER: 58

LOCATION: 119N-52W-22CCBB R

LEGAL LOCATION: NW NW SW SW sec. 22, T. 119 N., R. 52 W.

0 - 16 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel; oxidized; some silt; coarse gravel stringers at 9 and 12 feet
16 - 22 Sand, orange-tan-brown, fine to coarse; oxidized; saturated; a little clay

TEST HOLE NUMBER: 59

LOCATION: 119N-52W-22DCCD R

LEGAL LOCATION: SE SW SW SE sec. 22, T. 119 N., R. 52 W.

2 - 13 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 60

LOCATION: 119N-52W-22DCCD 1R

LEGAL LOCATION: SE SW SW SE sec. 22, T. 119 N., R. 52 W.

1 - 7 Sand and gravel, tan-brown, fine to medium sand, fine to coarse gravel, silty; oxidized
7 - 17 Sand and gravel, yellow-tan-brown, fine to coarse sand, fine gravel; oxidized; saturated; some silt and clay

TEST HOLE NUMBER: 61

LOCATION: 119N-52W-26BCDC R

LEGAL LOCATION: SW SE SW NW sec. 26, T. 119 N., R. 52 W.

4 - 19 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 62

LOCATION: 119N-52W-26DAAA R

LEGAL LOCATION: NE NE NE SE sec. 26, T. 119 N., R. 52 W.

3 - 5 Gravel, coarse
5 - 9 Sand, coarse; fine gravel
9 - 19 Gravel, fine, silty
19 - 29 Sand, coarse; fine to coarse gravel, silt

TEST HOLE NUMBER: 63

LOCATION: 119N-52W-27BBBB R

LEGAL LOCATION: NW NW NW NW sec. 27, T. 119 N., R. 52 W.

4 - 18 Sand, gray-tan-brown, fine to very coarse, clayey; oxidized; saturated

TEST HOLE NUMBER: 64

LOCATION: 119N-52W-27CCBB R

LEGAL LOCATION: NW NW SW SW sec. 27, T. 119 N., R. 52 W.

2 - 6 Sand, brown, fine to coarse, clayey; oxidized; little silt
6 - 11 Sand and gravel, gray-brown, fine to coarse sand, fine gravel, silty, clayey; saturated; gravel stringer at 10 to 11 feet
11 - 16 Sand and gravel, gray, fine to coarse sand, fine gravel, very clayey, silty; unoxidized; saturated

TEST HOLE NUMBER: 65

LOCATION: 119N-52W-27DDDD R

LEGAL LOCATION: SE SE SE SE sec. 27, T. 119 N., R. 52 W.

2 - 4 Sand, yellow-tan, fine to coarse, silty; oxidized; some clay

TEST HOLE NUMBER: 66

LOCATION: 119N-52W-28AAAA R

LEGAL LOCATION: NE NE NE NE sec. 28, T. 119 N., R. 52 W.

2 - 15 Sand and gravel, medium to coarse

TEST HOLE NUMBER: 67
LOCATION: 119N-52W-33BAAA R
LEGAL LOCATION: NE NE NE NW sec. 33, T. 119 N., R. 52 W.

5 - 10 Sand and gravel, brown, fine to medium sand, fine to medium gravel, clayey, silty; oxidized; saturated at 6 feet

TEST HOLE NUMBER: 68
LOCATION: 119N-52W-33DCDC R
LEGAL LOCATION: SW SE SW SE sec. 33, T. 119 N., R. 52 W.

2 - 18 Sand, brown; some coarse gravel, cobbles

TEST HOLE NUMBER: 69
LOCATION: 119N-52W-34BBBB R
LEGAL LOCATION: NW NW NW NW sec. 34, T. 119 N., R. 52 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

6 - 15 Sand and gravel, medium sand, medium gravel

TEST HOLE NUMBER: 70
LOCATION: 120N-52W-26AAAA 2R
LEGAL LOCATION: NE NE NE NE sec. 26, T. 120 N., R. 52 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

2 - 6 Sand and gravel, orange, medium sand, medium gravel

TEST HOLE NUMBER: 71
LOCATION: 120N-52W-27CDDD R
LEGAL LOCATION: SE SE SE SW sec. 27, T. 120 N., R. 52 W.

2 - 20 Sand

TEST HOLE NUMBER: 72
LOCATION: 120N-52W-28DDDD R
LEGAL LOCATION: SE SE SE SE sec. 28, T. 120 N., R. 52 W.

3 - 7 Sand, medium
7 - 33 Gravel, coarse

TEST HOLE NUMBER: 73
LOCATION: 120N-52W-29AAAA R
LEGAL LOCATION: NE NE NE NE sec. 29, T. 120 N., R. 52 W.

10 - 12 Sand, fine to medium

TEST HOLE NUMBER: 74
LOCATION: 120N-52W-30DAAA R
LEGAL LOCATION: NE NE NE SE sec. 30, T. 120 N., R. 52 W.

9 - 18 Sand and gravel, light-orange-brown, fine to coarse sand, fine to coarse gravel, very silty; oxidized
18 - 21 Sand and gravel, orange-brown, fine to coarse sand, fine gravel, silty; oxidized
21 - 23 Sand, gray-orange-brown, fine to coarse, very clayey, silty; oxidized

TEST HOLE NUMBER: 75
LOCATION: 120N-52W-31DCCC R
LEGAL LOCATION: SW SW SW SE sec. 31, T. 120 N., R. 52 W.

- 0 - 3 Gravel, orange-brown, fine to coarse, very silty; oxidized
- 7 - 13 Gravel, very coarse; poor return; could not penetrate past 13 feet; abandoned hole

TEST HOLE NUMBER: 76
LOCATION: 120N-52W-31DDCA R
LEGAL LOCATION: NE SW SE SE sec. 31, T. 120 N., R. 52 W.

- 1 - 43 Sand, orange-brown, very fine, clayey, silty; oxidized; some fine gravel; hit rock at 43 feet; abandoned hole

TEST HOLE NUMBER: 77
LOCATION: 120N-52W-32AAAA R
LEGAL LOCATION: NE NE NE NE sec. 32, T. 120 N., R. 52 W.

- 2 - 14 Sand, medium to coarse

TEST HOLE NUMBER: 78
LOCATION: 120N-52W-32AAAA 1R
LEGAL LOCATION: NE NE NE NE sec. 32, T. 120 N., R. 52 W.

- 3 - 6 Sand, brown, fine to coarse; dry to moist
- 6 - 10 Sand and gravel, brown, fine to coarse sand, fine to medium gravel; saturated at 8 feet

TEST HOLE NUMBER: 79
LOCATION: 120N-52W-32BAAB R
LEGAL LOCATION: NW NE NE NW sec. 32, T. 120 N., R. 52 W.

- 0 - 12 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to medium gravel, silty; oxidized; wet at 7 feet
- 12 - 20 Sand and gravel, gray-brown, fine to coarse sand, fine gravel, clayey, silty; unoxidized; saturated

TEST HOLE NUMBER: 80
LOCATION: 120N-52W-32BABA R
LEGAL LOCATION: NE NW NE NW sec. 32, T. 120 N., R. 52 W.

- 2 - 9 Sand and gravel, orange-tan-brown, fine to coarse sand, fine to coarse gravel, silty; oxidized; could not penetrate past 9 feet; abandoned hole

TEST HOLE NUMBER: 81
LOCATION: 120N-52W-32DCCC R
LEGAL LOCATION: SW SW SW SE sec. 32, T. 120 N., R. 52 W.
PRELIMINARY LOG -- SUBJECT TO CHANGE

- 1 - 16 Sand and gravel, orange, fine to medium sand, medium to coarse gravel, some clay
- 16 - 31 Sand, gray, fine to medium

TEST HOLE NUMBER: 82
LOCATION: 120N-52W-34BBBB 1R

LEGAL LOCATION: NW NW NW NW sec. 34, T. 120 N., R. 52 W.

4 - 6 Sand

TEST HOLE NUMBER: 83

LOCATION: 120N-52W-34BBBB 2R

LEGAL LOCATION: NW NW NW NW sec. 34, T. 120 N., R. 52 W.

6 - 9 Sand, medium

APPENDIX C: List of land tracts in Codington County, South Dakota, which have been tested for sand and gravel by the South Dakota Department of Transportation or have been bonded with the intent to mine sand and gravel with the Office of Minerals and Mining, Department of Environment and Natural Resources.

EXPLANATION:

Column Description:

- a. Land owner and address
- b. Location - given in 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

Land Tract 1

- a. Landowner: JAMES OLSON - REVILLO
- b. Location: NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 14, T. 116 N., R. 51 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 2

- a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
- b. Location: SW $\frac{1}{4}$ sec. 18, T. 116 N., R. 51 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 3

- a. Landowner: M. WAGNER - WATERTOWN
- b. Location: SW $\frac{1}{4}$ sec. 18, T. 116 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 4

- a. Landowner: LEO KLINE - WATERTOWN
- b. Location: SW $\frac{1}{4}$ sec. 30, T. 116 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 5

- a. Landowner: ROBERT L. ENDRES - WATERTOWN
- b. Location: NE $\frac{1}{4}$ sec. 4, T. 116 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 6

- a. Landowner: NICK & JOHN KRANZ - WATERTOWN
- b. Location: SW¼ sec. 4, T. 116 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 6 - 8
- e. Overburden thickness (ft): 2 - 4

Land Tract 7

- a. Landowner: NICK & JOHN KRANZ - WATERTOWN
- b. Location: SW¼ SW¼ sec. 4, T. 116 N., R. 52 W.
- c. Aggregate type: SAND
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 8

- a. Landowner: PAUL KINGSLIEN - WATERTOWN
- b. Location: NW¼ NE¼ sec. 9, T. 116 N., R. 52 W.
- c. Aggregate type: SAND
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 9

- a. Landowner: PAUL KINGSLIEN - WATERTOWN
- b. Location: NE¼ NW¼ sec. 9, T. 116 N., R. 52 W.
- c. Aggregate type: SAND
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 10

- a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
- b. Location: NE¼ sec. 13, T. 116 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 11

- a. Landowner: JAMES OLSON - REVILLO
- b. Location: NE¼ SE¼ sec. 13, T. 116 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 12

- a. Landowner: HALLET CONSTRUCTION CO. - WATERTOWN
- b. Location: W½ NE¼ sec. 15, T. 116 N., R. 52 W.
- c. Aggregate type: SAND AND GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 13

- a. Landowner: HALLET CONSTRUCTION CO. - WATERTOWN
- b. Location: E½ NW¼ sec. 15, T. 116 N., R. 52 W.
- c. Aggregate type: SAND AND GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 14

- a. Landowner: W. BRIGGS - WATERTOWN
- b. Location: SE¼ sec. 16, T. 116 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 15

- a. Landowner: FRANCIS JUNGERS - WATERTOWN
- b. Location: SE¼ sec. 25, T. 116 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 16

- a. Landowner: MANNERUD INC. - BROOKINGS
- b. Location: S½ NW¼ sec. 33, T. 116 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 17

- a. Landowner: PEARL MCFARLAND - WATERTOWN
- b. Location: E½ SW¼ sec. 5, T. 116 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 18

- a. Landowner: BITUMINOUS PAVING INC. - ORTONVILLE, MN.
- b. Location: E½ SW¼ sec. 5, T. 116 N., R. 53 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 19

- a. Landowner: BITUMINOUS PAVING INC. - ORTONVILLE, MN.
- b. Location: SE¼ sec. 5, T. 116 N., R. 53 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 20

- a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
- b. Location: SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 5, T. 116 N., R. 53 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 21

- a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
- b. Location: SW $\frac{1}{4}$ sec. 5, T. 116 N., R. 53 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 22

- a. Landowner: BITUMINOUS PAVING INC. - ORTONVILLE, MN.
- b. Location: NE $\frac{1}{4}$ sec. 8, T. 116 N., R. 53 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 23

- a. Landowner: PORTER WHITE - WATERTOWN
- b. Location: SE $\frac{1}{4}$ sec. 8, T. 116 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 7 +
- e. Overburden thickness (ft): 4.5

Land Tract 24

- a. Landowner: LEONARD LANOUE - WATERTOWN
- b. Location: NE $\frac{1}{4}$ sec. 9, T. 116 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 25

- a. Landowner: MARY MCFARLAND - WATERTOWN
- b. Location: E $\frac{1}{2}$ NW $\frac{1}{4}$ sec. 9, T. 116 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 26

- a. Landowner: DEPT. GAME, FISH & PARKS - PIERRE
- b. Location: SW $\frac{1}{4}$ sec. 9, T. 116 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 27

- a. Landowner: NOT GIVEN
- b. Location: SW $\frac{1}{4}$ sec. 9, T. 116 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 28

- a. Landowner: NOT GIVEN
- b. Location: SE $\frac{1}{4}$ sec. 16, T. 116 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 8
- e. Overburden thickness (ft): 1

Land Tract 29

- a. Landowner: D. NAGELMIER - KAMPESKA
- b. Location: NW $\frac{1}{4}$ sec. 11, T. 116 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 30

- a. Landowner: BERNARD KRANZ - ADDRESS NOT GIVEN
- b. Location: NE $\frac{1}{4}$ sec. 36, T. 116 N., R. 54 W.
- c. Aggregate type: SAND
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 31

- a. Landowner: NOT GIVEN
- b. Location: W $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 9, T. 117 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 32

- a. Landowner: W. M. MCMAHON - WATERTOWN
- b. Location: SE $\frac{1}{4}$ sec. 9, T. 117 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 12 +
- e. Overburden thickness (ft): 1.8

Land Tract 33

- a. Landowner: JAMES OLSON - REVILLO
- b. Location: NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 15, T. 117 N., R. 51 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 34

- a. Landowner: RAY STURN - KRANZBURG
- b. Location: NW¼ sec. 15, T. 117 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 35

- a. Landowner: NOT GIVEN
- b. Location: NW¼ sec. 16, T. 117 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 36

- a. Landowner: GLEN BUCHOLZ - WATERTOWN
- b. Location: NW¼ sec. 19, T. 117 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 37

- a. Landowner: DEPT. OF TRANSPORTATION - PIERRE
- b. Location: S½ SW¼ sec. 19, T. 117 N., R. 51 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 38

- a. Landowner: ROBERT FOX - WATERTOWN
- b. Location: S½ SW¼ sec. 19, T. 117 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 39

- a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
- b. Location: SW¼ NW¼ NW¼ SW¼ sec. 19, T. 117 N., R. 51 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 40

- a. Landowner: CLARENCE BAUER - WATERTOWN
- b. Location: NE¼ sec. 2, T. 117 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 5 +
- e. Overburden thickness (ft): 1.5

Land Tract 41

- a. Landowner: EDWARD FOX - WATERTOWN
- b. Location: E½ NE¼ sec. 18, T. 117 N., R. 52 W.
- c. Aggregate type: SAND
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 42

- a. Landowner: H. J. STURM - WATERTOWN
- b. Location: W½ NE¼ sec. 18, T. 117 N., R. 52 W.
- c. Aggregate type: SAND
- d. Deposit thickness (ft): 6.5
- e. Overburden thickness (ft): 0.5

Land Tract 43

- a. Landowner: ALBERT STURM - WATERTOWN
- b. Location: N½ SW¼ sec. 18, T. 117 N., R. 52 W.
- c. Aggregate type: SAND
- d. Deposit thickness (ft): 6.5
- e. Overburden thickness (ft): 1.5

Land Tract 44

- a. Landowner: EDWARD FOX - WATERTOWN
- b. Location: SE¼ sec. 18, T. 117 N., R. 52 W.
- c. Aggregate type: SAND
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 45

- a. Landowner: HARRY WEAGLE - WATERTOWN
- b. Location: NE¼ sec. 22, T. 117 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 12
- e. Overburden thickness (ft): 2.5

Land Tract 46

- a. Landowner: JAMES OLSON - REVILLO
- b. Location: NW¼ NE¼ sec. 22, T. 117 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 47

- a. Landowner: HALLETT CONSTRUCTION CO. - ST. PETER, MN.
- b. Location: SE¼ sec. 26, T. 117 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 48

- a. Landowner: F. J. MCLAUGHLIN COMPANY - WATERTOWN
- b. Location: NE $\frac{1}{4}$ sec. 27, T. 117 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 49

- a. Landowner: EDWARD & MARVIN ALJOE - WATERTOWN
- b. Location: NE $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 33, T. 117 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 50

- a. Landowner: HALLETT CONSTRUCTION CO. - ST. PETER, MN.
- b. Location: SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 33, T. 117 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 51

- a. Landowner: EDWARD & MARVIN ALJOE - WATERTOWN
- b. Location: N $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 33, T. 117 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 52

- a. Landowner: F. J. MCLAUGHLIN COMPANY - WATERTOWN
- b. Location: N $\frac{1}{2}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ sec. 33, T. 117 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 53

- a. Landowner: ARCHIE LITTLE - WATERTOWN
- b. Location: E $\frac{1}{2}$ S $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 33, T. 117 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 54

- a. Landowner: V. E. MCBRIDGE - WATERTOWN
- b. Location: N $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 34, T. 117 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 55

- a. Landowner: F. J. MCLAUGHLIN COMPANY - WATERTOWN
- b. Location: SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 34, T. 117 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 56

- a. Landowner: NOT GIVEN
- b. Location: SE $\frac{1}{4}$ sec. 36, T. 117 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 57

- a. Landowner: HAROLD BENBOUR - WATERTOWN
- b. Location: SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 117 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 11.7
- e. Overburden thickness (ft): 1 - 2

Land Tract 58

- a. Landowner: HAROLD BENBOUR - WATERTOWN
- b. Location: SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 7, T. 117 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 8.5
- e. Overburden thickness (ft): 1.5

Land Tract 59

- a. Landowner: NOT GIVEN
- b. Location: NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 18, T. 117 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 60

- a. Landowner: ROBERT SCHWANDT - WATERTOWN
- b. Location: NW $\frac{1}{4}$ sec. 18, T. 117 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 61

- a. Landowner: VERN BELK - HENRY
- b. Location: SE $\frac{1}{4}$ sec. 18, T. 117 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 62

- a. Landowner: STATE OF SOUTH DAKOTA - PIERRE
- b. Location: NE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 25, T. 117 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 7
- e. Overburden thickness (ft): 3

Land Tract 63

- a. Landowner: W. F. WILLIAMS
- b. Location: N $\frac{1}{2}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 29, T. 117 N., R. 53 W.
- c. Aggregate type: SAND AND FINE GRAVEL
- d. Deposit thickness (ft): 10
- e. Overburden thickness (ft): 2.5

Land Tract 64

- a. Landowner: PAUL JONGELING - WATERTOWN
- b. Location: SE $\frac{1}{4}$ sec. 11, T. 117 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 9
- e. Overburden thickness (ft): 1

Land Tract 65

- a. Landowner: GENE JONGELING - WATERTOWN
- b. Location: W $\frac{1}{2}$ sec. 12, T. 117 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 66

- a. Landowner: ROBERT SCHWANDT - WATERTOWN
- b. Location: NE $\frac{1}{4}$ sec. 18, T. 117 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 67

- a. Landowner: E. DEVRIES - WATERTOWN
- b. Location: SW $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 9, T. 118 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 68

- a. Landowner: E. DEVRIES - WATERTOWN
- b. Location: NW $\frac{1}{4}$ sec. 9, T. 118 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 69

- a. Landowner: NOT GIVEN
- b. Location: NE¼ sec. 10, T. 118 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 70

- a. Landowner: HALLETT CONSTRUCTION CO. - ST. PETER, MN.
- b. Location: SE¼ sec. 9, T. 118 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 71

- a. Landowner: A. MCELHANY & D. MCELHANY - WATERTOWN
- b. Location: NW¼ sec. 16, T. 118 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 72

- a. Landowner: UNION CENTRAL INSURANCE CO. - WATERTOWN
- b. Location: NE¼ NW¼ sec. 17 T. 118 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 6
- e. Overburden thickness (ft): 2.5

Land Tract 73

- a. Landowner: RAUVILLE SAND & GRAVEL - WATERTOWN
- b. Location: SW¼ sec. 17, T. 118 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 74

- a. Landowner: RAUVILLE SAND & GRAVEL - WATERTOWN
- b. Location: S½ SE¼ sec. 17, T. 118 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 75

- a. Landowner: JAMES OLSON - REVILLO
- b. Location: NW¼ NE¼ sec. 23, T. 118 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 76

- a. Landowner: PETER ABRAM - WATERTOWN
- b. Location: NW¼ sec. 23, T. 118 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 77

- a. Landowner: NOT GIVEN
- b. Location: NW¼ sec. 7, T. 118 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 78

- a. Landowner: JOSEPH WENSING - ADDRESS NOT GIVEN
- b. Location: NW¼ sec. 8, T. 118 N., R. 53 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 12
- e. Overburden thickness (ft): 1

Land Tract 79

- a. Landowner: W. GUSSE - FLORENCE
- b. Location: NW¼ NW¼ sec. 8, T. 118 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 80

- a. Landowner: CHRIS SPRINGER - FLORENCE
- b. Location: SW¼ sec. 9, T. 118 N., R. 54 W.
- c. Aggregate type: SAND
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 81

- a. Landowner: LEONARD HECKATHORN - WATERTOWN
- b. Location: NW¼ sec. 10, T. 118 N., R. 54 W.
- c. Aggregate type: SAND
- d. Deposit thickness (ft): 4
- e. Overburden thickness (ft): 2

Land Tract 82

- a. Landowner: R. H. WALRATH - WATERTOWN
- b. Location: NE¼ SW¼ sec. 10, T. 118 N., R. 54 W.
- c. Aggregate type: SAND
- d. Deposit thickness (ft): 2 +
- e. Overburden thickness (ft): 0

Land Tract 83

- a. Landowner: DICK BOETTCHERS - WATERTOWN
- b. Location: NW¼ sec. 12, T. 118 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 84

- a. Landowner: ELIZABETH MARQUARDT - WATERTOWN
- b. Location: NW¼ sec. 15, T. 118 N., R. 54 W.
- c. Aggregate type: SAND
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 85

- a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
- b. Location: SE¼ SW¼ sec. 26, T. 118 N., R. 54 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 86

- a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
- b. Location: SW¼ SE¼ sec. 26, T. 118 N., R. 54 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 87

- a. Landowner: HAROLD MULLER - FLORENCE
- b. Location: E½ SW¼ sec. 26, T. 118 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 11 +
- e. Overburden thickness (ft): 0.5 - 6.0

Land Tract 88

- a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
- b. Location: SE¼ SW¼ sec. 27, T. 118 N., R. 54 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 89

- a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
- b. Location: SW¼ SE¼ sec. 27, T. 118 N., R. 54 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 90

- a. Landowner: THOMAS EPHO - FLORENCE
- b. Location: W $\frac{1}{2}$ SE $\frac{1}{4}$ sec. 27, T. 118 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 10.3
- e. Overburden thickness (ft): 3.8

Land Tract 91

- a. Landowner: EARL ROE - FLORENCE
- b. Location: SE $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 31, T. 118 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 10
- e. Overburden thickness (ft): 3

Land Tract 92

- a. Landowner: SYLVESTER ROE - FLORENCE
- b. Location: SW $\frac{1}{4}$ SW $\frac{1}{4}$ sec. 31, T. 118 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 93

- a. Landowner: EARL ROE - FLORENCE
- b. Location: NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 32, T. 118 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 94

- a. Landowner: EARL ROE - FLORENCE
- b. Location: SW $\frac{1}{4}$ sec. 32, T. 118 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 13.3
- e. Overburden thickness (ft): 2.3

Land Tract 95

- a. Landowner: PETE HAUGEN - FLORENCE
- b. Location: NE $\frac{1}{4}$ sec. 34, T. 118 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 96

- a. Landowner: HAROLD MULLER - FLORENCE
- b. Location: N $\frac{1}{2}$ NE $\frac{1}{4}$ sec. 35, T. 118 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 6.3
- e. Overburden thickness (ft): 1.8

Land Tract 97

- a. Landowner: NOT GIVEN
- b. Location: NW¼ sec. 36, T. 118 N., R. 54 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 6.0
- e. Overburden thickness (ft): 0.8

Land Tract 98

- a. Landowner: GEORGE GROVES - WALLACE
- b. Location: NE¼ NE¼ sec. 2, T. 118 N., R. 55 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 6.5
- e. Overburden thickness (ft): 3.0

Land Tract 99

- a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
- b. Location: SE¼ sec. 27, T. 118 N., R. 55 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 100

- a. Landowner: RAY MCRODEN - HENRY
- b. Location: NE¼ sec. 28, T. 118 N., R. 55 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 101

- a. Landowner: GRAVER PETERSON - HENRY
- b. Location: SE¼ sec. 29, T. 118 N., R. 55 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 102

- a. Landowner: S. & H. CONSTRUCTION - CLARK
- b. Location: W½ sec. 29, T. 118 N., R. 55 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 103

- a. Landowner: W. E. ECK - HENRY
- b. Location: NW¼ sec. 30, T. 118 N., R. 55 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 15.0
- e. Overburden thickness (ft): 1.5

Land Tract 104

- a. Landowner: EARL ROE - FLORENCE
- b. Location: NE $\frac{1}{4}$ sec. 36, T. 118 N., R. 55 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 12.4
- e. Overburden thickness (ft): 2.1

Land Tract 105

- a. Landowner: EARL ROE - FLORENCE
- b. Location: NW $\frac{1}{4}$ sec. 36, T. 118 N., R. 55 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 106

- a. Landowner: JOHN MORS - STOCKHOLM
- b. Location: E $\frac{1}{2}$ SW $\frac{1}{4}$ sec. 1, T. 119 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 107

- a. Landowner: NOT GIVEN
- b. Location: N $\frac{1}{2}$ sec. 20, T. 119 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 108

- a. Landowner: HAROLD LARSON - SOUTH SHORE
- b. Location: NE $\frac{1}{4}$ sec. 23, R. 119 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 18
- e. Overburden thickness (ft): 1

Land Tract 109

- a. Landowner: DEPT. OF TRANSPORTATION - PIERRE
- b. Location: NE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 23, T. 119 N., R. 51 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 110

- a. Landowner: KATE LARSON - SOUTH SHORE
- b. Location: SW $\frac{1}{4}$ NW $\frac{1}{4}$ sec. 23, T. 119 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 6
- e. Overburden thickness (ft): 2 +

Land Tract 111

- a. Landowner: MILFORD HANSON - STOCKHOLM
- b. Location: NE $\frac{1}{4}$ sec. 26, T. 119 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 9
- e. Overburden thickness (ft): 1

Land Tract 112

- a. Landowner: CHARLES WAEGE - SOUTH SHORE
- b. Location: E $\frac{1}{2}$ sec. 35, T. 119 N., R. 51 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 113

- a. Landowner: NOT GIVEN
- b. Location: NW $\frac{1}{4}$ sec. 1, T. 119 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 114

- a. Landowner: WALLACE BUNDE - SOUTH SHORE
- b. Location: NE $\frac{1}{4}$ sec. 9, T. 119 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 115

- a. Landowner: VAN MILLS - WATERTOWN
- b. Location: NW $\frac{1}{4}$ sec. 10, T. 119 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 116

- a. Landowner: TINA BERRINGTON - SISSETON
- b. Location: SW $\frac{1}{4}$ sec. 10, T. 119 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 117

- a. Landowner: L. H. CHIZEK & A. CHIZEK - SOUTH SHORE
- b. Location: SE $\frac{1}{4}$ sec. 15, T. 119 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 11.0
- e. Overburden thickness (ft): 2.5

Land Tract 118

- a. Landowner: FOREST M. MARKVE - GOODWIN
- b. Location: NW¼ sec. 26, T. 119 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 8
- e. Overburden thickness (ft): 2

Land Tract 119

- a. Landowner: H. B. STREGE - NICOLLETT, MN.
- b. Location: SW¼ sec. 27, T. 119 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 120

- a. Landowner: CODINGTON COUNTY HIGHWAY DEPT. - WATERTOWN
- b. Location: SE¼ sec. 27, T. 119 N., R. 52 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 121

- a. Landowner: MARIE BUNDE & ELSIE BUNDE - WATERTOWN
- b. Location: E½ NW¼ sec. 34, T. 119 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 122

- a. Landowner: DARREL BUNDE & MAXIME BUNDE - WATERTOWN
- b. Location: W½ NW¼ sec. 34, T. 119 N., R. 52 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 123

- a. Landowner: DEXTER TOWNSHIP - FLORENCE
- b. Location: E½ NW¼ sec. 31, T. 119 N., R. 53 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 124

- a. Landowner: DEXTER TOWNSHIP - FLORENCE
- b. Location: W½ NE¼ sec. 31, T. 119 N., R. 53 W.
- c. Aggregate type: ---
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 125

- a. Landowner: MRS. A. B. OWENS - FLORENCE
- b. Location: NE $\frac{1}{4}$ sec. 31, T. 119 N., R. 54 W.
- c. Aggregate type: COARSE SAND
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 126

- a. Landowner: NOT GIVEN
- b. Location: SE $\frac{1}{4}$ NE $\frac{1}{4}$ sec. 19, T. 119 N., R. 55 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 6.5
- e. Overburden thickness (ft): 3.0

Land Tract 127

- a. Landowner: NILS PAULSON - WALLACE
- b. Location: SW $\frac{1}{4}$ sec. 20, T. 119 N., R. 55 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---

Land Tract 128

- a. Landowner: CARL LOVICK - WALLACE
- b. Location: SE $\frac{1}{4}$ sec. 20, T. 119 N., R. 55 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 8
- e. Overburden thickness (ft): 2

Land Tract 129

- a. Landowner: EINAR JORDETH - WALLACE
- b. Location: SW $\frac{1}{4}$ sec. 22, T. 119 N., R. 55 W.
- c. Aggregate type: FINE SAND
- d. Deposit thickness (ft): 6.0
- e. Overburden thickness (ft): 1.4

Land Tract 130

- a. Landowner: L. T. BREKKE
- b. Location: W $\frac{1}{2}$ NE $\frac{1}{4}$ sec. 29, T. 119 N., R. 55 W.
- c. Aggregate type: GRAVEL
- d. Deposit thickness (ft): 10.0 +
- e. Overburden thickness (ft): 1.5

Land Tract 131

- a. Landowner: NOT GIVEN
- b. Location: SW $\frac{1}{4}$ sec. 35, T. 119 N., R. 55 W.
- c. Aggregate type: SAND AND GRAVEL
- d. Deposit thickness (ft): ---
- e. Overburden thickness (ft): ---