LOG OF TEST BORING

CLIENT: Northern Kentucky University Foundation
PROJECT: Consulting Services, Foundation Property, Dixie Highway, Covington, Ky.
LOCATION OF BORING: As shown on Boring Plan, Drawing 94821E-1

ELEV.  BORING  DEPTH  SAMPLE

659.1  101  0.1  Cond Blows/6" No. Type Rec.
       1A 6/26/30 1B 2"

659.0

Mixed brown and gray moist soft FILL, silty clay and shale with grass, hairlike roots and limestone fragments.

Mixed gray moist stiff FILL, shale with limestone floaters.

657.1

Mixed gray, trace brown moist very stiff to hard FILL, shale and silty clay with limestone floaters.

642.1

Auger refusal and bottom of test boring at 17.0 feet.

* CS= Continuous Elasky Sampler

Datum  USGS  Hammer Wt.  140 Lbs.  Hole Diameter  4½" TD
Date Started  12/20/95  Pipe Size  O.D.  2 In.  Boring Method  HSA

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
U - UNDISTURBED
L - LOST

HAMMER FALLING 30" HRS.
COUNT MADE AT 6" INTERVALS

518 Enterprise Drive / Covington, Kentucky 41017-1595 / 606-341-1322 / Fax 606-341-0832
1310 Kemper Meadow Drive, Suite 600 / Forest Park, Ohio 45240-1651 / 513-625-4350 / Fax 513-625-4755

STANDARD PENETRATION TEST - DRIVING 2" OD SAMPLER 1" WITH 140 #.
**LOG OF TEST BORING**

**CLIENT:** Northern Kentucky University Foundation  
**PROJECT:** Consulting Services, Foundation Property, Dixie Highway, Covington, Ky.  
**LOCATION OF BORING:** As shown on Boring Plan, Drawing 94821E

<table>
<thead>
<tr>
<th>ELEV.</th>
<th>SOIL DESCRIPTION</th>
<th>STRA. DEPTH SCALE</th>
<th>SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>659.1</td>
<td>Mixed brown and gray moist soft FILL, silty clay and shale with grass, hairlike roots and limestone fragments.</td>
<td>0.1</td>
<td>2.0</td>
</tr>
<tr>
<td>659.0</td>
<td>Mixed gray moist stiff FILL, shale with limestone floaters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>657.1</td>
<td>Mixed gray, trace brown moist very stiff to hard FILL, shale and silty clay with limestone floaters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>642.1</td>
<td>Mixed gray, trace brown moist very stiff to hard FILL, shale and silty clay with limestone floaters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>641.1</td>
<td>Mixed gray, trace brown moist very stiff to hard FILL, shale and silty clay with limestone floaters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>637.6</td>
<td>Mixed gray moist very stiff to hard FILL, shale with limestone floaters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>631.8</td>
<td>Mixed brown and gray moist very stiff to hard FILL, silty clay and shale with limestone floaters.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>636.0</td>
<td>Mixed gray, trace brown moist very stiff to hard FILL, shale and limestone floaters.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sample Conditions:**
- **Hammer Wt:** 140 Lbs.
- **Hammer Drop:** 30 In.
- **Pipe Size:** O.D. 2.83 In.
- **Hole Diameter:** 3½" TD
- **Foreman:** TM
- **Engineer:** JWK/DBT
- **Date Completed:** 1/9/95
- **Boring Method:** HSA

**Sample Type:**
- **DS:** Driven Split Spoon
- **PT:** Pressed Shelby Tube
- **CA:** Continuous Flight Auger
- **RC:** Rock Core
- **Ground Water Depth:**
  - First Noted: None
  - After Completion: Dry

**Boring Method:**
- HSA = Hollow Stem Auger
- CFA = Continuous Flight Auger
- DC = Driving Casing
- MO = Mud Drilling

*STANDARD PENETRATION TEST – DRIVING 2" OD SAMPLER 1" WITH 140 #. HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS*
# LOG OF TEST BORING

**CLIENT:** Northern Kentucky University Foundation  
**PROJECT:** Consulting Services, Foundation Property, Dixie Highway, Covington, Ky.  
**JOB:** 94821E  
**LOCATION OF BORING:** As shown on Boring Plan, Drawing 94821E-1

<table>
<thead>
<tr>
<th>ELEV.</th>
<th>SOIL DESCRIPTION</th>
<th>STRA. DEPTH</th>
<th>DEPTH SCALE</th>
<th>SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Cond</td>
<td>Blows/6&quot;</td>
<td>No.</td>
</tr>
<tr>
<td>615.1</td>
<td>Mixed gray, trace brown moist very stiff to hard FILL, shale and limestone floaters.</td>
<td>30</td>
<td>1 I 18/26/30 I 11 DS 14&quot; 2&quot;</td>
<td></td>
</tr>
<tr>
<td>614.6</td>
<td>Mixed brown, trace gray moist very stiff to hard FILL, shale and limestone floaters.</td>
<td>30</td>
<td>1 I 40/55/80 I 12A DS 16&quot; 12B 3&quot;</td>
<td></td>
</tr>
<tr>
<td>611.6</td>
<td>Mixed gray moist very stiff to hard FILL, shale and limestone floaters.</td>
<td>35</td>
<td>1 I 30/38/45 I 13A DS 20&quot; /50 13B 3&quot;</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed brown and gray and black moist very stiff FILL, shale and silty clay, trace topsoil with shale fragments and limestone floaters, trace brick fragments and cinders.</td>
<td>40</td>
<td>1 I 20/35/28 I 14 DS 16&quot; 2&quot;</td>
<td></td>
</tr>
<tr>
<td>609.1</td>
<td>Mixed grayish brown moist very stiff FILL, silty clay with brick fragments.</td>
<td>45</td>
<td>1 I 75/35/50 I 15A DS 18&quot; /45 15B 3&quot;</td>
<td></td>
</tr>
<tr>
<td>608.6</td>
<td>Mixed brown, trace gray moist very stiff to hard FILL, silty clay and shale with limestone floaters.</td>
<td>50</td>
<td>1 I 40/35/32 I 16A DS 24&quot; 16B 3&quot;</td>
<td></td>
</tr>
<tr>
<td>604.6</td>
<td>Mixed gray and olive brown moist very stiff to hard FILL, shale and limestone.</td>
<td>55</td>
<td>1 I 50/6&quot; I 18 DS 6&quot;</td>
<td></td>
</tr>
</tbody>
</table>

**Datum:** USGS  
**Surf. Elev.:** 659.1  
**Date Started:** 1/6/95

**SAMPLE CONDITIONS:**  
D - DISINTEGRATED  
I - INTACT  
U - UNDISTURBED  
L - LOST

**SAMPLER TYPE:**  
DS - DRIVEN SPLIT SPOON  
PT - PRESSED SHELBY TUBE  
CA - CONTINUOUS-FLIGHT AUGER  
RC - ROCK CORE

**GROUND WATER DEPTH:**  
FIRST NOTED: None  
AT COMPLETION: Dry

**BORING METHOD:**  
HSA - Hollow Stem Augers  
CFA - Continuous Flight Augers  
DC - Driving Casing  
MD - Mud Drilling

**STANDARD PENETRATION TEST - DRIVING 2" OD SAMPLER WITH 140 # HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS**

<table>
<thead>
<tr>
<th>Datum</th>
<th>Hammer Wt.</th>
<th>Hammer Drop</th>
<th>Hole Diameter</th>
<th>Foreman</th>
<th>Engineer</th>
</tr>
</thead>
<tbody>
<tr>
<td>USGS</td>
<td>140 Lbs</td>
<td>30 In</td>
<td>3/4&quot; TD</td>
<td>JM</td>
<td>JWK/DBT</td>
</tr>
</tbody>
</table>

**Pipe Size:** O.D. 2 & 3"  
**Boring Method:** HSA  
**Date Completed:** 1/9/95
# LOG OF TEST BORING

**CLIENT:** Northern Kentucky University Foundation  
**BORING:** 101A  
**PROJECT:** Consulting Services, Foundation Property, Dixie Highway, Covington, Ky.  
**JOB:** 94821E  
**LOCATION OF BORING:** As shown on Boring Plan, Drawing 94821E-1

<table>
<thead>
<tr>
<th>ELEV.</th>
<th>SOIL DESCRIPTION</th>
<th>STRA. DEPTH</th>
<th>DEPTH SCALE</th>
<th>SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td><strong>SURFACE</strong></td>
<td>55</td>
<td>21A DS 20' / 60</td>
<td>21B 3&quot; 24'</td>
</tr>
<tr>
<td></td>
<td>Mixed gray and olive brown moist very stiff to hard FILL, shale and limestone.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>599.6</td>
<td></td>
<td>59.5</td>
<td>22A DS 12'</td>
<td>22B 3&quot; 12'</td>
</tr>
<tr>
<td></td>
<td>Mixed olive brown and brown moist very stiff to hard FILL, shale with limestone floaters.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| 575.1 |                  | 84.0        | 23A DS 18' | 23B 2"  
|       | Mottled brown moist stiff SILTY CLAY, trace sand and fine gravel with shale fragments and limestone floaters (possible fill). |
| 565.1 |                  | 94.0        | 24A DS 18' | 24B 2"  
|       | Gray moist soft SHALE and thinly bedded LIMESTONE (bedrock). |
| 563.1 |                  | 96.0        | 25A DS 12' | 25B 2"  
|       | Bottom of test boring at 96.0 feet. |

**Datum:** USGS  
**Surf. Elev.:** 659.1 Ft.  
**Date Started:** 1/6/95  
**Sample Conditions:** 
- **D:** DISINTEGRATED  
- **I:** INTACT  
- **U:** UNDISTURBED  
- **L:** LOST  

**Sampler Type:** 
- **DS:** Driven Split Spoon  
- **FT:** Pressed Shelby Tube  
- **CA:** Continuous Flight Auger  
- **RC:** Rock Core  

**Hole Diameter:** 3"  
**Pipe Size:** O.D. 2 & 3"  
**Rock Core Dia.:** 
- **HCS:** Hollow Stem Augers  
- **CFA:** Continuous Flight Augers  
- **DC:** Driving Casing  
- **MD:** Mud Drilling  

**Boring Method:** 
- **HSA:** Hollow Stem Augers  
- **CFA:** Continuous Flight Augers  
- **DC:** Driving Casing  
- **MD:** Mud Drilling  

**Ground Water Depth:** 
- **First Noted:** None  
- **At Completion:** Dry  
- **After:** Hrs.  
- **Backfilled:** Immersed  

**Sample:** 
- **USGS:**  
- **Lbs.:** 140  
- **In.:** 30  
- **In.:** 2 & 3  

**USGS:**  
**Engineer:** JWK/DBT  
**Date Completed:** 1/9/95
LOG OF TEST BORING

CLIENT: Northern Kentucky University Foundation

PROJECT: Consulting Services, Foundation Property, Dixie Highway, Covington, Ky.

JOB #: 94821E

LOCATION OF BORING: As shown on Boring Plan, Drawing 94821E-1

ELEV. | SOIL DESCRIPTION | STRA. DEPTH | DEPTH SCALE | SAMPLE

--- | --- | --- | --- | ---
661.7 | Mixed brown and dark gray moist soft FILL, silty clay with shale fragments, limestone floaters and hairlike roots. | 0.4 | I/D 3/7/14 | 1A DS 16"

661.3 | Mixed gray moist stiff FILL, shale and limestone. | 2.0 | IB 2" |

659.7 | Mixed gray moist very stiff to hard FILL, shale with limestone floaters. | 643.2 | |

635.2 | Mixed gray, trace brown moist very stiff FILL, shale with limestone floaters. | |

Bottom of test boring at 26.5 feet.

Datum: USGS
Surf. Elev.: 661.7 Ft.
Date Started: 1/9/95

Hammer Wt.: 140 Lbs.
Hammer Drop: 30 In.
Pipe Size: O.D. 2 In.

Hole Diameter: 5"
Rock Core Dia.: 3"
Boring Method: CFA

SAMPLE CONDITIONS
D - DISINTEGRATED
I - INTACT
L - LOST

SAMPLER TYPE
DS - DRIVEN SPLIT SPOON
FT - PRESSED-SHELBY-TUBE
CA - CONTINUOUS FLIGHT AUGER
RC - ROCK CORE

GROUND WATER DEPTH
FIRST NOTED: None Ft.
AT COMPLETION: Dry Ft.
AFTER: HRS. FT.

FOR ENS:
JM

ENGINEER:
JWK/DBT

DATE COMPLETED: 1/9/95

BORING METHOD
HSA - Hollow Stem Augers
CFA - Continuous Flight Augers
DC - Driving Casing
MD - Mud Drilling

STANDARD PENETRATION TEST - DRIVING 2" OD SAMPLER 1' WITH 140 #. HAMMER FALLING 30'; COUNT MADE AT 6" INTERVALS
## LOG OF TEST BORING

**CLIENT**  
Northern Kentucky University Foundation

**PROJECT**  
Consulting Services, Foundation Property, Dixie Highway, Covington, Ky.

**LOCATION OF BORING**  
As shown on Boring Plan, Drawing 94821E-1

---

<table>
<thead>
<tr>
<th>ELEV.</th>
<th>SOIL DESCRIPTION</th>
<th>STRA. DEPTH</th>
<th>DEPTH SCALE</th>
<th>SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>665.4</td>
<td><strong>SURFACE</strong></td>
<td>0.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed brown moist soft FILL, silty clay with hairlike roots, limestone floaters and shale fragments.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>665.2</td>
<td></td>
<td>4.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed gray moist very stiff to hard FILL, shale with limestone floaters.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>660.9</td>
<td></td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed gray, trace brown moist very stiff to hard FILL, shale with limestone floaters.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>649.9</td>
<td></td>
<td>15.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed brown, trace gray moist very stiff to hard FILL, shale with limestone floaters.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>645.9</td>
<td></td>
<td>19.5</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Mixed gray, trace brown moist very stiff to hard FILL, shale with limestone floaters.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---

**DATUM**  
USGS

**SURF. ELEV.**  
665.4 Ft.

**DATE STARTED**  
12/22/94

**SAMPLE CONDITIONS**

- **D** - DISINTEGRATED
- **I** - INTACT
- **U** - UNDISTURBED
- **L** - LOST

**SAMPLER TYPE**

- **DS** - DRIVEN SPLIT SPOON
- **PT** - PRESSED SHELBY TUBE
- **CA** - CONTINUOUS FLIGHT AUGER
- **RC** - ROCK CORE

**GROUND WATER DEPTH**

- **FIRST NOTED**  
  **NONE**
- **AT COMPLETION**  
  **DRY**
- **AFTER**  
  **HRS.**
- **RETURNED**  
  **HRS.

**BORING METHOD**

- **HSA** - Hollow Stem Augers
- **CFA** - Continuous Flight Augers
- **DC** - Driving Casing
- **MD** - Mud Drilling

---

*STANDARD PENETRATION TEST - DRIVING 2" OD SAMPLER 1' WITH 140 #. HAMMER FALLING 30". COUNT MADE AT 6" INTERVALS*
**LOG OF TEST BORING**

**CLIENT:** Northern Kentucky University Foundation  
**PROJECT:** Consulting Services, Foundation Property, Dixie Highway, Covington, Ky.  
**JOB:** 94821E  
**LOCATION OF BORING:** As shown on Boring Plan, Drawing 94821E-1

<table>
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<th>STRA. DEPTH</th>
<th>DEPTH SCALE</th>
<th>SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0</td>
<td>SURFACE: Mixed gray, trace brown moist very stiff to hard FILL, shale with limestone floaters.</td>
<td>38.0</td>
<td>I</td>
<td>38/47/56 14 DS 14&quot;</td>
</tr>
<tr>
<td>627.4</td>
<td>Mixed brown, trace gray moist very stiff FILL, silty clay with shale fragments and limestone floaters.</td>
<td>44.0</td>
<td>I</td>
<td>35/30/46 15 DS 10&quot;</td>
</tr>
<tr>
<td>621.4</td>
<td></td>
<td>45</td>
<td>I</td>
<td>13/18/23 16 DS 10&quot;</td>
</tr>
<tr>
<td>611.4</td>
<td>Mixed olive brown, trace gray moist stiff to very stiff FILL, shale and silty clay with limestone floaters and pieces of wood.</td>
<td>54.0</td>
<td>I</td>
<td>18/21/30 17A DS 18&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>55</td>
<td>I</td>
<td>35/50/6&quot; 18 DS 12&quot;</td>
</tr>
<tr>
<td>604.9</td>
<td>Olive brown moist soft weathered SHALE and thinly bedded LIMESTONE (bedrock).</td>
<td>60.5</td>
<td>I</td>
<td>50/6&quot; 19 DS 6&quot;</td>
</tr>
<tr>
<td>604.1</td>
<td>Gray moist soft SHALE and thinly bedded LIMESTONE (bedrock).</td>
<td>61.3</td>
<td>I</td>
<td>50/4&quot; 20 DS 4&quot;</td>
</tr>
</tbody>
</table>

Note: Bag sampler obtained from 45.0-54.0, sample #A

---

**Datium:** USGS  
**Surf. Elevation:** 665.4 Ft.  
**Date Started:** 12/22/94  
**Hammer Wt.:** 140 Lbs.  
**Hammer Drop:** 30 In.  
**Pipe Size:** O.D. 2 & 3 In.  

**Hole Diameter:** 31/4" TD  
**Boring Method:** HSA  
**Ground Water Depth:** FIRST NOTED, None FT.  
**Boring Methods:**  
- HSA = Hollow Stem Augers  
- CFA = Continuous Flight Augers  
- DC = Driving Casing  
- MD = Mud Drilling

---

**SAMPLE CONDITIONS**  
- D = DISINTEGRATED  
- I = INTACT  
- U = UNDISTURBED  
- L = LOST

**SAMPLER TYPE**  
- DS = DRIVEN SPLIT SPOON  
- PT = PRESSED SHELBY TUBE  
- CA = CONTINUOUS FLIGHT AUGER  
- RC = ROCK CORE

**Note:** STANDARD PENETRATION TEST - DRIVING 2" OD SAMPLER 1" WITH 140 #. HAMMER FALLING 30"; COUNT MADE AT 6" INTERVALS
## LOG OF TEST BORING

**CLIENT:** Northern Kentucky University Foundation  
**PROJECT:** Consulting Services, Foundation Property, Dixie Highway, Covington, Ky.  
**JOB:** 94821E  
**LOCATION OF BORING:** As shown on Boring Plan, Drawing 94821E-1

<table>
<thead>
<tr>
<th>ELEV.</th>
<th>SOIL DESCRIPTION</th>
<th>STRA. SCALE</th>
<th>DEPTH SCALE</th>
<th>SAMPLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>668.5</td>
<td>Mixed brown, trace gray moist soft to medium stiff FILL, silty clay with grass, hairlike roots, trace asphalt fragments.</td>
<td>0.3</td>
<td>1A 5/13/25 18&quot;</td>
<td>1B 2&quot;</td>
</tr>
<tr>
<td>668.2</td>
<td>Mixed gray moist very stiff to hard FILL, shale with limestone floaters.</td>
<td>2.0</td>
<td>14/16/18 2 12&quot;</td>
<td>2&quot;</td>
</tr>
<tr>
<td>666.5</td>
<td>Mixed gray, trace brown moist very stiff to hard FILL, shale with limestone floaters.</td>
<td>5</td>
<td>14/25/30 I 3/4 24&quot;</td>
<td>3&quot;</td>
</tr>
<tr>
<td>657.0</td>
<td>Mixed brown, trace gray moist very stiff to hard FILL, shale with limestone floaters.</td>
<td>11.5</td>
<td>14/15/20 5 16/26 14&quot;</td>
<td>3&quot;</td>
</tr>
<tr>
<td>649.0</td>
<td>Mixed gray, trace brown moist very stiff to hard FILL, shale with limestone floaters.</td>
<td>19.5</td>
<td>50/5&quot; 6 2&quot;</td>
<td>3&quot;</td>
</tr>
<tr>
<td>644.0</td>
<td>Mixed brown and gray moist hard FILL, shale with limestone floaters.</td>
<td>24.5</td>
<td>17/50/6&quot; 7 16/26 14&quot;</td>
<td>3&quot;</td>
</tr>
<tr>
<td>639.0</td>
<td>Mixed brown and gray moist very stiff to hard FILL, shale, trace silty clay with limestone floaters.</td>
<td>29.5</td>
<td>11/13/24 10 6&quot;</td>
<td>2&quot;</td>
</tr>
<tr>
<td>634.0</td>
<td></td>
<td>34.5</td>
<td>20/10/50 11 6&quot;</td>
<td>8&quot;</td>
</tr>
</tbody>
</table>

---

**Datum USGS**  
**Surf. Elev.** 668.5 Ft.  
**Date Started** 12/21/94  
**Sample Conditions** D - DISINTEGRATED  
**Sampler Type** DS - DRIVEN SPLIT SPOON  
**Ground Water Depth** FIRST NOTED None  
**Boring Method** CFA  
**Pipe Size** O.D. 2 and 3  
**Hammer Drop** 30 In.  
**Hammer Wt.** 140 Lbs.  
**Hole Diameter** 5"  
**Boring Method** CFA  
**Pipe Size** O.D. 2 and 3  
**Hammer Wt.** 140 Lbs.  
**Date Completed** 12/22/94  
**Sample Conditions** D - DISINTEGRATED  
**Sampler Type** DS - DRIVEN SPLIT SPOON  
**Ground Water Depth** FIRST NOTED None  
**Boring Method** CFA  
**Pipe Size** O.D. 2 and 3  
**Hammer Wt.** 140 Lbs.  
**Date Completed** 12/22/94  

*STANDARD PENETRATION TEST - DRIVING 2" OD SAMPLER 1' WITH 140 #. HAMMER FALLING 30" COUNT MADE AT 6" INTERVALS*
# Log of Test Boring

**Client:** Northern Kentucky University Foundation  
**Project:** Consulting Services, Foundation Property, Dixie Highway, Covington, KY  
**Job:** 94821E  
**Location of Boring:** As shown on Boring Plan, Drawing 94821E-1

<table>
<thead>
<tr>
<th>ELEV.</th>
<th>Soil Description</th>
<th>Stra. Depth</th>
<th>Depth Scale</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>SURFACE</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.0</td>
<td>Mixed brown, trace gray moist stiff FILL, shale with limestone floaters, trace silty clay and organic (wood).</td>
<td>0.0</td>
<td>22/26/50</td>
<td>12 DS 8&quot;</td>
</tr>
<tr>
<td>39.5</td>
<td></td>
<td>40</td>
<td></td>
<td>2&quot;</td>
</tr>
<tr>
<td>629.0</td>
<td>Mixed gray, trace brown moist medium stiff FILL, clay with limestone floaters.</td>
<td>44.5</td>
<td>20/12/16</td>
<td>13 DS 10&quot;</td>
</tr>
<tr>
<td>624.0</td>
<td></td>
<td>45</td>
<td></td>
<td>2&quot;</td>
</tr>
<tr>
<td>614.0</td>
<td>Mixed brown and gray moist very stiff FILL, shale with limestone floaters.</td>
<td>50</td>
<td>14/13/18</td>
<td>14 DS 18&quot;</td>
</tr>
<tr>
<td>609.0</td>
<td></td>
<td>55</td>
<td></td>
<td>2&quot;</td>
</tr>
<tr>
<td>604.0</td>
<td>Brown moist stiff to very stiff FILL, silty clay with shale fragments and limestone floaters.</td>
<td>59.5</td>
<td>14/16/23</td>
<td>15 DS 10&quot;</td>
</tr>
<tr>
<td>603.0</td>
<td>Mottled brown moist very stiff SILTY CLAY with shale fragments and limestone floaters.</td>
<td>64.5</td>
<td>9/19/18</td>
<td>16 DS 8&quot;</td>
</tr>
<tr>
<td>65.5</td>
<td></td>
<td>66</td>
<td></td>
<td>2&quot;</td>
</tr>
<tr>
<td>70</td>
<td>Gray moist soft SHALE and thinly bedded LIMESTONE (bedrock).</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Split spoon refusal and bottom of test boring at 65.5 feet.

**Datum:** USGS  
**Surf. Elev.:** 668.5 Ft.  
**Date Started:** 12/21/94

**Sample Conditions:**  
- DISINTEGRATED  
- INTACT  
- UNDISTURBED  
- LOST

**Sampler Type:**  
- DS - Driven Split Spoon  
- PT - Pressed Shelby Tube  
- CA - Continuous-Flight Auger  
- RC - Rock Core

**Ground Water Depth:**  
- FIRST NOTED: None FT.  
- AT COMPLETION: Dry FT.  
- AFTER 24 HRS: Dry FT.  
- BACKFILLED: 24 HRS.

**Boring Method:**  
- HSA - Hollow Stem Augers  
- CFA - Continuous Flight Augers  
- DC - Driving Casing  
- MD - Mud Drilling

**Standards Penetration Test:** Driving 2" OD sampler 1" with 140# hammer, falling 30"; count made at 6" intervals.
SOIL CLASSIFICATION SHEET

NON COHESIVE SOILS
(Silt, Sand, Gravel and Combinations)

<table>
<thead>
<tr>
<th>Density</th>
<th>Particle Size Identification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Loose</td>
<td>Boulders -8 inch diameter or more</td>
</tr>
<tr>
<td>Loose</td>
<td>Cobbles -3 to 8 inch diameter</td>
</tr>
<tr>
<td>Medium Dense</td>
<td>Gravel -Coarse -3/4 to 3 inches</td>
</tr>
<tr>
<td>Dense</td>
<td>Fine -1/16 to 3/4 inches</td>
</tr>
<tr>
<td>Very Dense</td>
<td></td>
</tr>
</tbody>
</table>

Relative Proportions

<table>
<thead>
<tr>
<th>Descriptive Term</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trace</td>
<td>1 - 10</td>
</tr>
<tr>
<td>Little</td>
<td>11 - 20</td>
</tr>
<tr>
<td>Some</td>
<td>21 - 35</td>
</tr>
<tr>
<td>And</td>
<td>36 - 50</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

COHESIVE SOILS
(Clay, Silt and Combinations)

<table>
<thead>
<tr>
<th>Consistency</th>
<th>Field Identification</th>
<th>Unconfined Compressive Strength (tons/sq. ft.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very soft</td>
<td>Easily penetrated several inches by fist</td>
<td>Less than 0.25</td>
</tr>
<tr>
<td>Soft</td>
<td>Easily penetrated several inches by thumb</td>
<td>0.25 - 0.5</td>
</tr>
<tr>
<td>Medium</td>
<td>Can be penetrated several inches by thumb with moderate effort</td>
<td>0.5 - 1.0</td>
</tr>
<tr>
<td>Stiff</td>
<td>Readily indented by thumb but penetrated only with great effort</td>
<td>1.0 - 2.0</td>
</tr>
<tr>
<td>Very Stiff</td>
<td>Readily indented by thumbnail</td>
<td>2.0 - 4.0</td>
</tr>
<tr>
<td>Hard</td>
<td>Indented with difficulty by thumbnail</td>
<td>Over 4.0</td>
</tr>
</tbody>
</table>

Classification on logs are made by visual inspection.

Standard Penetration Test—Driving a 2.0" O. D., 1 3/8" I. D., sampler a distance of 1.0 foot into undisturbed soil with a 140 pound hammer free falling a distance of 30.0 inches. It is customary for GJT to drive the spoon 6.0 inches to seat into undisturbed soil, then perform the test. The number of hammer blows for seating the spoon and making the tests are recorded for each 6.0 inches of penetration on the drill log (Example—6/8/9). The standard penetration test results can be obtained by adding the last two figures (i.e. 8 + 9 = 17 blows/ft.). Refusal is defined as greater than 50 blows for 6 inches or less penetration.

Strata Changes—In the column "Soil Descriptions" on the drill log the horizontal lines represent strata changes. A solid line (———) represents an actually observed change, a dashed line (-----) represents an estimated change.

Ground Water observations were made at the times indicated. Porosity of soil strata, weather conditions, site topography, etc., may cause changes in the water levels indicated on the logs.