Appendix F
Well Construction Logs
DRILLING SUMMARY

Geologist:

Drilling Company:
Boart Longyear

Driller:

Rig Make/Model:
Spyder Sonic drilling rig

Date:
11/18/2012

GEOLOGIC LOG

<table>
<thead>
<tr>
<th>Depth(ft.)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.3</td>
<td>Top soil</td>
</tr>
<tr>
<td>0.3-15</td>
<td>Silty clay</td>
</tr>
<tr>
<td>15-22.6</td>
<td>Silty clay/clayey silt</td>
</tr>
<tr>
<td>22.6-24</td>
<td>Silty sand</td>
</tr>
<tr>
<td>24-32.5</td>
<td>Silty clay</td>
</tr>
<tr>
<td>32.5-34.5</td>
<td>Silty sand</td>
</tr>
<tr>
<td>34.5-37</td>
<td>Silty clay</td>
</tr>
<tr>
<td>37-40</td>
<td>Silty sand</td>
</tr>
</tbody>
</table>

WELL DESIGN

<table>
<thead>
<tr>
<th>CASING MATERIAL</th>
<th>SCREEN MATERIAL</th>
<th>FILTER MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface: Steel Stick-up Protective Casing</td>
<td>Type: Schedule 40 PVC</td>
<td>Setting: 28-40.0'</td>
</tr>
<tr>
<td>Monitor: Schedule 40 PVC</td>
<td>Slot Size: 0.010&quot;</td>
<td>Global #5 sand</td>
</tr>
</tbody>
</table>

COMMENTS:
1) Borehole initially drilled to 16 ft with 10" and then 12" Sonic drill casing.
2) Separation casing pushed into clay to 17 ft and then grouted.
3) Separation casing grout cured for 24 hours before completing boring.

LEGEND
- Grout
- Bentonite Seal
- Silica Sandpack

Client: USACE
Location: Niagara Falls Storage Site
Project No.: 11176781

URS Corporation
MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW949
DRILLING SUMMARY

Geologist: 

Drilling Company: Boart Longyear 

Driller: 

Rig Make/Model: Spyder Sonic drilling rig 

Date: 11/18/2012 

GEOLOGIC LOG

Depth(ft.) Description 

0-1 Fill 

1-3 Silty sand 

3-5 Clayey silt 

5-10 Silt 

10-11.5 Sand 

11.5-14.3 Silty clay 

14.3-16 Silty fine sand 

16-17 Silty clay 

Top of screen 7.5' 

Top of sand 5.5' 

Top of bentonite 4.0' 

Bottom of screen 12.5 

Bottom of borehole 17.0' 

WELL DESIGN

CASING MATERIAL | SCREEN MATERIAL | FILTER MATERIAL

Surface: Steel Stick-up Protective Casing | Type: Schedule 40 PVC | Type: Global #5 sand

Monitor: Schedule 40 PVC | Slot Size: 0.010" | Setting: 5.5-17.0

SEAL MATERIAL

Type: Bentonite chips | Setting: 4-5.5'

Type: Concrete | Setting: 0-4'

COMMENTS:

1) Cave-in and sand in bottom of borehole

LEGEND

Concrete

Bentonite Seal

Silica Sandpack

Client: USACE Location: Niagara Falls Storage Site Project No.: 11176781

URS Corporation MONITORING WELL CONSTRUCTION DETAILS Well Number: MW944
DRILLING SUMMARY

Geologist: 
Drilling Company: Boart Longyear
Rig Make/Model: Spyder Sonic drilling rig
Date: 11/18/2012

GEOLOGIC LOG

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<thead>
<tr>
<th>Depth(ft.)</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>0-0.3</td>
<td>Top soil</td>
</tr>
<tr>
<td>0.3-3</td>
<td>Sand</td>
</tr>
<tr>
<td>3-6</td>
<td>Silty clay</td>
</tr>
<tr>
<td>5.8-7</td>
<td>Silt</td>
</tr>
<tr>
<td>8.7-10.5</td>
<td>Clayey silt</td>
</tr>
<tr>
<td>10.5-15.5</td>
<td>Silty clay/ clayey silt</td>
</tr>
<tr>
<td>15.5-20</td>
<td>Silty clay</td>
</tr>
</tbody>
</table>

WELL DESIGN

<table>
<thead>
<tr>
<th>CASING MATERIAL</th>
<th>SCREEN MATERIAL</th>
<th>FILTER MATERIAL</th>
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<tbody>
<tr>
<td>Surface:</td>
<td>Type:</td>
<td>Type:</td>
</tr>
<tr>
<td>Steel Stick-up</td>
<td>Schedule 40 PVC</td>
<td>Bentonite chips</td>
</tr>
<tr>
<td>Protective Casing</td>
<td></td>
<td>Setting:</td>
</tr>
<tr>
<td>Monitor:</td>
<td>Slot Size:</td>
<td>Global #5 sand</td>
</tr>
<tr>
<td>Schedule 40 PVC</td>
<td>0.010&quot;</td>
<td>Setting: 4.0-20.0'</td>
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SEAL MATERIAL

<table>
<thead>
<tr>
<th>Type:</th>
<th>Setting:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bentonite chips</td>
<td>3-4'</td>
</tr>
<tr>
<td>Concrete</td>
<td>0-3'</td>
</tr>
</tbody>
</table>

COMMENTS:

1) Cave-in and sand in bottom of borehole

LEGEND

- Concrete
- Bentonite Seal
- Silica Sandpack

Client: USACE Location: Niagara Falls Storage Site Project No.: 11176781

URS Corporation MONITORING WELL CONSTRUCTION DETAILS Well Number: MW945
DRILLING SUMMARY

Geologist: [Redacted]

Drilling Company: Boart Longyear

Driller: [Redacted]

Rig Make/Model: Spyder Sonic drilling rig

Date: 11/14/2012

GEOLOGIC LOG

Depth(ft.) | Description
---|---
0-0.5 | Top soil
0.5-4 | Silty clay/ clayey silt
4-7.5 | Silty clay
7.5-10.3 | Clayey silt and silty clay
10.3-12 | Silty clay
12-15 | Clay

WELL DESIGN

<table>
<thead>
<tr>
<th>CASING MATERIAL</th>
<th>SCREEN MATERIAL</th>
<th>FILTER MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface: Steel Stick-up Protective Casing</td>
<td>Type: Schedule 40 PVC</td>
<td>Type: Global #5 sand</td>
</tr>
<tr>
<td>Monitor: Schedule 40 PVC</td>
<td>Slot Size: 0.010&quot;</td>
<td>Setting: 5.5-15.0'</td>
</tr>
</tbody>
</table>

SEAL MATERIAL

| Type: Bentonite chips | Setting: 3-5.5' |
| Type: Concrete | Setting: 0-3' |

COMMENTS:

1) Cave-in and sand in bottom of borehole

LEGEND

- Concrete
- Bentonite Seal
- Silica Sandpack

Client: USACE
Location: Niagara Falls Storage Site
Project No.: 11176781

URS Corporation
MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW946
DRILLING SUMMARY

Geologist: 

Drilling Company: Boart Longyear

Driller: 

Rig Make/Model: Spyder Sonic drilling rig

Date: 11/18/2012

GEOLOGIC LOG

Depth(ft.) Description
0-0.5 Top soil
0.5-2 Silty sand
2-3.5 Silty clay
3.5-5.5 Clayey silt
5.5-6.3 Sand
6.3-12 Silty clay/clayey silt
12-14.5 Silty sand
14.5-15.5 Silt
15.5-20 Silty clay

WELL DESIGN

CASING MATERIAL
Surface: Steel Stick-up Protective Casing
Monitor: Schedule 40 PVC

SCREEN MATERIAL
Top of bentonite 4.0’
Top of sand 6.5’
Top of screen 8.5’

FILTER MATERIAL
Type: Schedule 40 PVC
Slot Size: 0.010"

SEAL MATERIAL
Type: Bentonite chips
Setting: 4-6.5’

COMMENTS:
1) Cave-in and sand in bottom of borehole

LEGEND

Concrete
Bentonite Seal
Silica Sandpack

Client: USACE
Location: Niagara Falls Storage Site
Project No.: 11176781

URS Corporation
MONITORING WELL CONSTRUCTION DETAILS
Well Number: MW947
DRILLING SUMMARY

Geologist: [Redacted]
Drilling Company: [Redacted]
Driller: [Redacted]
Rig Make/Model: Spyder Sonic drilling rig
Date: 11/16/2012

GEOLOGIC LOG

<table>
<thead>
<tr>
<th>Depth(ft.)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.3</td>
<td>Top soil</td>
</tr>
<tr>
<td>0.3-15</td>
<td>Silty clay</td>
</tr>
</tbody>
</table>

WELL DESIGN

<table>
<thead>
<tr>
<th>CASING MATERIAL</th>
<th>SCREEN MATERIAL</th>
<th>FILTER MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface: Steel Stick-up Protective Casing</td>
<td>Type: Schedule 40 PVC</td>
<td>Type: Global #5 sand</td>
</tr>
<tr>
<td>Monitor: Schedule 40 PVC</td>
<td>Slot Size: 0.010&quot;</td>
<td>Setting: 4-15.0'</td>
</tr>
</tbody>
</table>

SEAL MATERIAL

| Type: Bentonite chips | Setting: 3-4' |
| Type: Concrete | Setting: 0-3' |

COMMENTS:

Client: USACE
Location: Niagara Falls Storage Site
Project No.: 11176781

URS Corporation
MONITORING WELL CONSTRUCTION DETAILS
Well Number: MW948
DRILLING SUMMARY

Geologist: [Redacted]
Drilling Company: Boart Longyear
Driller: [Redacted]
Rig Make/Model: Spyder Sonic drilling rig
Date: 11/11/2012

GEOLOGIC LOG

<table>
<thead>
<tr>
<th>Depth(ft.)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.5</td>
<td>Top soil</td>
</tr>
<tr>
<td>0.5-13.5</td>
<td>Silty clay/ clayey silt</td>
</tr>
<tr>
<td>13.5-20.0</td>
<td>Silty clay</td>
</tr>
</tbody>
</table>

| D           | Top of bentonite 3.0'             |
| E           |                                    |
| P           | Top of sand 7.8'                  |
| T           | Top of screen 10.0'               |
| H           | Bottom of screen 20.0'            |

WELL DESIGN

<table>
<thead>
<tr>
<th>CASING MATERIAL</th>
<th>SCREEN MATERIAL</th>
<th>FILTER MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface: Steel Stick-up Protective Casing</td>
<td>Type: Schedule 40 PVC</td>
<td>Type: Global #5 sand, Setting: 7.8-20.0'</td>
</tr>
<tr>
<td>Monitor: Schedule 40 PVC</td>
<td>Slot Size: 0.010&quot;</td>
<td></td>
</tr>
</tbody>
</table>

SEAL MATERIAL

| Type: Bentonite chips | Setting: 3-7.8' |
| Type: Concrete        | Setting: 0-3'   |

COMMENTS: [Redacted]

LEGEND

- Concrete
- Bentonite Seal
- Silica Sandpack

Client: USACE
Location: Niagara Falls Storage Site
Project No.: 11176781

URS Corporation
MONITORING WELL CONSTRUCTION DETAILS
Well Number: MW950
**DRILLING SUMMARY**

Geologist: [Name]

Drilling Company: Boart Longyear

Driller: [Name]

Rig Make/Model: Spyder Sonic, drilling rig

Date: 11/11/2012

**GEOLOGIC LOG**

<table>
<thead>
<tr>
<th>Depth(ft.)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.5</td>
<td>Top soil</td>
</tr>
<tr>
<td>0.5-5.0</td>
<td>Silty clay/clayey silt</td>
</tr>
<tr>
<td>5.0-7.0</td>
<td>Silty sand</td>
</tr>
<tr>
<td>7.0-10.0</td>
<td>Silty clay</td>
</tr>
<tr>
<td>10.0-10.5</td>
<td>Silty sand</td>
</tr>
<tr>
<td>10.5-14.0</td>
<td>Clay</td>
</tr>
<tr>
<td>14.0-16.5</td>
<td>Clayey silt</td>
</tr>
<tr>
<td>16.5-20.0</td>
<td>Clay</td>
</tr>
</tbody>
</table>

**WELL DESIGN**

**CASING MATERIAL**

Surface: Steel Stick-up Protective Casing

Monitor: Schedule 40 PVC

**SCREEN MATERIAL**

Type: Schedule 40 PVC

Slot Size: 0.010"

**FILTER MATERIAL**

Type: Global #5 sand

Setting: 7.9-20.0'

**SEAL MATERIAL**

Type: Bentonite chips

Setting: 3-7.8'

Type: Concrete

Setting: 0-3'

**COMMENTS:**

**LEGEND**

- Concrete
- Bentonite Seal
- Silica Sandpack

**MONITORING WELL CONSTRUCTION DETAILS**

Client: USACE

Location: Niagara Falls Storage Site

Project No.: 11176781

URS Corporation

Well Number: MW951
DRILLING SUMMARY

Geologist: 

Drilling Company: Boart Longyear

Driller: 

Rig Make/Model: Spyder Sonic drilling rig

Date: 11/19/2012

GEOLOGIC LOG

<table>
<thead>
<tr>
<th>Depth(ft.)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.3</td>
<td>Top soil</td>
</tr>
<tr>
<td>0.3-10</td>
<td>Clayey silt to Silty clay</td>
</tr>
</tbody>
</table>

WELL DESIGN

<table>
<thead>
<tr>
<th>CASING MATERIAL</th>
<th>SCREEN MATERIAL</th>
<th>FILTER MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface: Steel Stick-up Protective Casing</td>
<td>Type: Schedule 40 PVC</td>
<td>Type: Bentonite chips Setting: 3-4'</td>
</tr>
<tr>
<td>Monitor: Schedule 40 PVC</td>
<td>Slot Size: 0.010&quot;</td>
<td>Type: Concrete Setting: 0-3'</td>
</tr>
</tbody>
</table>

COMMENTS:

LEGEND

- Concrete
- Bentonite Seal
- Silica Sandpack

Client: USACE Location: Niagara Falls Storage Site Project No.: 11176781

URS Corporation MONITORING WELL CONSTRUCTION DETAILS Well Number: MW952
## DRILLING SUMMARY

**Geologist:**

**Drilling Company:**
Boart Longyear

**Driller:**

**Rig Make/Model:**
Spyder Sonic drilling rig

**Date:**
11/19/2012

## GEOLOGIC LOG

<table>
<thead>
<tr>
<th>Depth(ft.)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.3</td>
<td>Top soil</td>
</tr>
<tr>
<td>0.3-6.0</td>
<td>Silty clay</td>
</tr>
<tr>
<td>6.0-6.5</td>
<td>Silt and Sand</td>
</tr>
<tr>
<td>6.5-10.0</td>
<td>Silty clay</td>
</tr>
</tbody>
</table>

## WELL DESIGN

### CASING MATERIAL
- **Surface:** Steel Stick-up Protective Casing
- **Monitor:** Schedule 40 PVC

### SCREEN MATERIAL
- **Type:** Schedule 40 PVC
- **Slot Size:** 0.010"

### FILTER MATERIAL
- **Type:** Global #5 sand
- **Setting:** 4-10.0'

### SEAL MATERIAL
- **Type:** Bentonite chips
- **Setting:** 3-4'

### COMMENTS:

### LEGEND

- **Concrete**
- **Bentonite Seal**
- **Silica Sandpack**

---

**Client:** URS Corporation

**Location:** Niagara Falls Storage Site

**Project No.:** 11176781

**Well Number:** MW953
**DRILLING SUMMARY**

Geologist: [Name]

Drilling Company: Boart Longyear

Driller: [Name]

Rig Make/Model: Spyder Sonic drilling rig

Date: 11/20/2012

**GEOLOGIC LOG**

<table>
<thead>
<tr>
<th>Depth(ft.)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.3</td>
<td>Top soil</td>
</tr>
<tr>
<td>0.3-10.0</td>
<td>Silty clay</td>
</tr>
</tbody>
</table>

**WELL DESIGN**

**CASING MATERIAL**

Surface: Steel Stick-up Protective Casing

Monitor: Schedule 40 PVC

**SCREEN MATERIAL**

Type: Schedule 40 PVC

Slot Size: 0.010"

**FILTER MATERIAL**

Type: Global #5 sand

Setting: 4-10.0'

**SEAL MATERIAL**

Type: Bentonite chips

Setting: 3-4'

Type: Concrete

Setting: 0-3'

**COMMENTS:**

**LEGEND**

- [Concrete]
- [Bentonite Seal]
- [Silica Sandpack]

**Client:** USACE

**Location:** Niagara Falls Storage Site

**Project No.:** 11176781

**URS Corporation**

**MONITORING WELL CONSTRUCTION DETAILS**

**Well Number:** MW954
DRILLING SUMMARY

Geologist: [Name]
Drilling Company: Boart Longyear
Driller: [Name]
Rig Make/Model: Spyder Sonic drilling rig
Date: 11/20/2012

GEOLOGIC LOG

<table>
<thead>
<tr>
<th>Depth(ft.)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.3</td>
<td>Top soil</td>
</tr>
<tr>
<td>0.3-3.5</td>
<td>Silty clay</td>
</tr>
<tr>
<td>3.5-14</td>
<td>Silty sand</td>
</tr>
<tr>
<td>14-15</td>
<td>Silty clay</td>
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</tbody>
</table>

WELL DESIGN

<table>
<thead>
<tr>
<th>CASING MATERIAL</th>
<th>SCREEN MATERIAL</th>
<th>FILTER MATERIAL</th>
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<tbody>
<tr>
<td>Type:</td>
<td>Type:</td>
<td>Type:</td>
</tr>
<tr>
<td>Surface: Steel Stick-up Protective Casing</td>
<td>Schedule 40 PVC</td>
<td>Global #5 sand</td>
</tr>
<tr>
<td>Monitor: Schedule 40 PVC</td>
<td>Slot Size: 0.010&quot;</td>
<td>Setting: 4.0-15.0'</td>
</tr>
</tbody>
</table>

SEAL MATERIAL

| Type: Bentonite chips | Setting: 3-4' |
| Type: Concrete | Setting: 0-3' |

COMMENTS:

Client: USACE
Location: Niagara Falls Storage Site
Project No.: 11176781

URS Corporation
MONITORING WELL CONSTRUCTION DETAILS
Well Number: MW955
DRILLING SUMMARY

Geologist: [Redacted]
Drilling Company: Boart Longyear
Driller: [Redacted]
Rig Make/Model: Spyder Sonic drilling rig
Date: 11/12/2012

GEOLOGIC LOG

<table>
<thead>
<tr>
<th>Depth(ft.)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.3</td>
<td>Top soil</td>
</tr>
<tr>
<td>0.3-5.2</td>
<td>Silty clay</td>
</tr>
<tr>
<td>5.2-6.0</td>
<td>Silty sand</td>
</tr>
<tr>
<td>6.0-14.0</td>
<td>Silty clay/clayey silt</td>
</tr>
<tr>
<td>14.0-16.0</td>
<td>Silty sand</td>
</tr>
<tr>
<td>16.0-16.5</td>
<td>Silty clay</td>
</tr>
<tr>
<td>16.5-17.0</td>
<td>Silty sand</td>
</tr>
<tr>
<td>17.0-20.0</td>
<td>Silty clay</td>
</tr>
</tbody>
</table>

WELL DESIGN

<table>
<thead>
<tr>
<th>CASING MATERIAL</th>
<th>SCREEN MATERIAL</th>
<th>FILTER MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface: Steel Stick-up Protective Casing</td>
<td>Type: Schedule 40 PVC</td>
<td>Type: Global #5 sand</td>
</tr>
<tr>
<td>Monitor: Schedule 40 PVC</td>
<td>Slot Size: 0.010&quot;</td>
<td>Setting: 7.9-20.0'</td>
</tr>
</tbody>
</table>

SEAL MATERIAL

| Type: Bentonite chips | Setting: 3-7.8' |
| Type: Concrete        | Setting: 0-3' |

COMMENTS:

LEGEND

- Concrete
- Bentonite Seal
- Silica Sandpack

Client: USACE
Location: Niagara Falls Storage Site
Project No.: 11176781

ERS Corporation
MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW956
DRILLING SUMMARY

Geologist:

Drilling Company:
Boart Longyear

Driller:

Rig Make/Model:
Spyder Sonic drilling rig

Date:
11/13/2012

GEOLOGIC LOG

Depth(ft.) | Description
-----------|-------------
0-0.3      | Top soil
0.3-5.8    | Silty clay to clayey silt
5.8-8.0    | Silty sand
8.0-9.8    | Silty clay
9.8-10.8   | Sand
10.8-14.0  | Silty clay
14.0-15.0  | Clay

WELL DESIGN

<table>
<thead>
<tr>
<th>CASING MATERIAL</th>
<th>SCREEN MATERIAL</th>
<th>FILTER MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type: Steel Stick-up Protective Casing</td>
<td>Type: Schedule 40 PVC</td>
<td>Type: Concrete</td>
</tr>
<tr>
<td>Monitor: Schedule 40 PVC</td>
<td>Slot Size: 0.010&quot;</td>
<td>Setting: 0-3'</td>
</tr>
<tr>
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<td></td>
<td>Setting: 3-4'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type: Global #5 sand</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Setting: 4.0-15.0'</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type: Bentonite chips</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Setting: 3-4'</td>
</tr>
</tbody>
</table>

COMMENTS:

LEGEND

- Concrete
- Bentonite Seal
- Silica Sandpack

Client: USACE
Location: Niagara Falls Storage Site
Project No.: 11176781

URS Corporation
MONITORING WELL CONSTRUCTION DETAILS

Well Number: MW957
DRILLING SUMMARY

Geologist: [Name]
Drilling Company: Boart Longyear
Driller: [Name]
Rig Make/Model: Spyder Sonic drilling rig
Date: 11/130/2012

GEOLOGIC LOG

<table>
<thead>
<tr>
<th>Depth(ft.)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.3</td>
<td>Top soil</td>
</tr>
<tr>
<td>0.3-3.0</td>
<td>Silty clay</td>
</tr>
<tr>
<td>3.0-3.8</td>
<td>Sand</td>
</tr>
<tr>
<td>3.8-5.0</td>
<td>Silty clay</td>
</tr>
<tr>
<td>5.0-5.5</td>
<td>Silty sand</td>
</tr>
<tr>
<td>5.5-10.0</td>
<td>Silty clay</td>
</tr>
</tbody>
</table>

WELL DESIGN

<table>
<thead>
<tr>
<th>CASING MATERIAL</th>
<th>SCREEN MATERIAL</th>
<th>FILTER MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface:</td>
<td>Type:</td>
<td>Type:</td>
</tr>
<tr>
<td>Steel Stick-up</td>
<td>Schedule 40 PVC</td>
<td>Bentonite chips</td>
</tr>
<tr>
<td>Protective Casing</td>
<td></td>
<td>Setting: 3-4'</td>
</tr>
<tr>
<td>Monitor:</td>
<td>Slot Size:</td>
<td>Setting: 0-3'</td>
</tr>
<tr>
<td>Schedule 40 PVC</td>
<td>0.010&quot;</td>
<td></td>
</tr>
</tbody>
</table>

COMMENTS:

LEGEND

- Concrete
- Bentonite Seal
- Silica Sandpack

Client: USACE
Location: Niagara Falls Storage Site
Project No.: 11176781

URS Corporation
MONITORING WELL CONSTRUCTION DETAILS
Well Number: MW958
**DRILLING SUMMARY**

**Geologist:**

**Drilling Company:** Boart Longyear

**Driller:**

**Rig Make/Model:** Spyder Sonic drilling rig

**Date:** 11/12/2012

**GEOLOGIC LOG**

<table>
<thead>
<tr>
<th>Depth(ft.)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.3</td>
<td>Top soil</td>
</tr>
<tr>
<td>0.3-13.0</td>
<td>Silty clay to clayey silt</td>
</tr>
<tr>
<td>13.0-14.0</td>
<td>Silty sand</td>
</tr>
<tr>
<td>14.0-15.0</td>
<td>Silty clay</td>
</tr>
</tbody>
</table>

**WELL DESIGN**

<table>
<thead>
<tr>
<th>CASING MATERIAL</th>
<th>SCREEN MATERIAL</th>
<th>FILTER MATERIAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type:</td>
<td>Setting:</td>
<td>Type:</td>
</tr>
<tr>
<td>Surface: Steel Stick-up Protective Casing</td>
<td>Global #5 sand</td>
<td>Bentonite chips</td>
</tr>
<tr>
<td>Monitor: Schedule 40 PVC</td>
<td>Slot Size: 0.010&quot;</td>
<td>Setting: 3-4&quot;</td>
</tr>
</tbody>
</table>

**COMMENTS:**

**LEGEND**

- Concrete
- Bentonite Seal
- Silica Sandpack

**Client:** USACE  
**Location:** Niagara Falls Storage Site  
**Project No.:** 11176781

**URS Corporation**

**MONITORING WELL CONSTRUCTION DETAILS**

**Well Number:** MW959
**DRILLING SUMMARY**

Geologist: [Redacted]
Drilling Company: Boart Longyear
Rig Make/Model: Spyder Sonic drilling rig
Date: 11/11/2012

---

**GEOLOGIC LOG**

<table>
<thead>
<tr>
<th>Depth(ft.)</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-0.3</td>
<td>Top soil</td>
</tr>
<tr>
<td>0.3-4.5</td>
<td>Clayey silt</td>
</tr>
<tr>
<td>4.5-7.0</td>
<td>Sand</td>
</tr>
<tr>
<td>7.0-9.5</td>
<td>Silty clay</td>
</tr>
<tr>
<td>9.5-10.8</td>
<td>Silty sand</td>
</tr>
<tr>
<td>10.8-15.0</td>
<td>Silty clay</td>
</tr>
</tbody>
</table>

---

**WELL DESIGN**

**CASING MATERIAL**

- **Surface**: Steel Stick-up Protective Casing
- **Monitor**: Schedule 40 PVC

**SCREEN MATERIAL**

- **Type**: Schedule 40 PVC
- **Slot Size**: 0.010"

**FILTER MATERIAL**

- **Type**: Global #5 sand
- **Setting**: 4.0-15.0'

---

**SEAL MATERIAL**

- **Type**: Bentonite chips
- **Setting**: 3.4'
- **Type**: Concrete
- **Setting**: 0-3'

---

**COMMENTS:**

---

**LEGEND**

- Concrete
- Bentonite Seal
- Silica Sandpack

---

**Client**: USACE  
**Location**: Niagara Falls Storage Site  
**Project No.**: 11176781  
**URS Corporation**  
**MONITORING WELL CONSTRUCTION DETAILS**  
**Well Number**: MW960