Appendix C – Boring Logs and Well Construction Diagrams
Concrete

Overburden

Overburden (not sampled).

Siltstone

Weathered Siltstone bedrock (not sampled).

Siltstone

Gray siltstone; moderate to strong field strength; aphanitic, massive texture, some lamination visible below 24 feet; fresh to slightly decomposed, slightly disintegrated, becoming competent and fresh at 22 to 30 feet; moderate to intensely fractured, fracture frequency decreasing below 21.5 feet; bedding plane fractures and microfractures prevalent between 14 and 15.5 feet; some clay infilling and moisture apparent at 15.7 feet and 18 feet; possible healed fracture zone between 24 and 24.3 feet, infilling and cement visible.

**Geologist(s):** Erik S. Reinert & David P. Bouchard
**Subcontractor:** Parratt Wolff, Inc.
**Driller/Operator:** Bill Rice
**Method:** Hollow Stem Auger/Air Rotary

WSP Environment & Energy
5 Sullivan Street
Cazenovia, New York 13035
(315) 655-3900
**Boring Log: MW-12C**

**Project:** Emerson Power Transmission  
**Project No.:** 4507/Legacy 127491  
**Location:** Ithaca, New York  
**Completion Date:** April 27, 2010  
**Surface Elevation (feet AMSL*):** 586.94  
**TOC Elevation (feet AMSL*):** 586.35  
**Total Depth (feet):** 30  
**Borehole Diameter (inches):** 8.25/6

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### Sample Data

<table>
<thead>
<tr>
<th>Depth</th>
<th>Sample/Interval</th>
<th>PID/OVM (ppm)</th>
<th>Blow Count</th>
<th>% Recovery</th>
<th>Lithology</th>
<th>Description</th>
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<td>-</td>
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</table>
| 24    | 3               | NA            | -          | -          | Total: 100% RQD: 62.5% | Siltstone  
Gray siltstone; moderate to strong field strength; aphanitic, massive texture, some lamination visible below 24 feet; fresh to slightly decomposed, slightly disintegrated, becoming competent and fresh at 22 to 30 feet; moderate to intensely fractured, fracture frequency decreasing below 21.5 feet; bedding plane fractures and microfractures prevalent between 14 and 15.5 feet; some clay infilling and moisture apparent at 15.7 feet and 18 feet; possible healed fracture zone between 24 and 24.3 feet, infilling and cement visible. (continued) |
| 26    |                 | -             | -          | -          |           |             |
| 28    | 4               | NA            | -          | -          | Total: 100% RQD: 76% |
| 30    |                 | -             | -          | -          |           | Bottom of Boring at 30 feet |

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**Well Details**

*AMSL = Above mean sea level

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**Geologist(s):** Erik S. Reinert & David P. Bouchard  
**Subcontractor:** Parratt Wolff, Inc.  
**Driller/Operator:** Bill Rice  
**Method:** Hollow Stem Auger/Air Rotary  
**WSP Environment & Energy**

5 Sullivan Street  
Cazenovia, New York 13035  
(315) 655-3900
**Concrete**

**Overburden**
Overburden (not sampled).

**Siltstone**
Weathered Siltstone bedrock (not sampled).

**Siltstone**
Gray siltstone; moderate to strong field strength; aphanitic, massive texture; fresh to slightly decomposed, slightly disintegrated, becoming competent and fresh at 22 to 30 feet; intensely fractured, 85-degree dipping joint with orangish-brown iron staining and possible oil sheen, all other fractures are horizontal with no infilling or mineralization, petroleum odor and oily sheen in horizontal fracture at 20.6 feet.

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**Sample Data**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Sample/Interval</th>
<th>PID/OVM (ppm)</th>
<th>Blow Count</th>
<th>% Recovery</th>
<th>Lithology</th>
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<td>Siltstone</td>
<td>Weathered Siltstone bedrock (not sampled).</td>
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**Subsurface Profile**

**Well Details**

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**Geologist(s):** Erik S. Reinert & David P. Bouchard  
**Subcontractor:** Parratt Wolff, Inc.  
**Driller/Operator:** Bill Rice  
**Method:** Hollow Stem Auger/Air Rotary

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**Project:** Emerson Power Transmission  
**Project No.:** 4507/Legacy 127491  
**Location:** Ithaca, New York  
**Completion Date:** April 27, 2010  
**Surface Elevation (feet AMSL*):** 587.13  
**TOC Elevation (feet AMSL*):** 586.62  
**Total Depth (feet):** 30  
**Borehole Diameter (inches):** 8.25/6

*AMS L = Above mean sea level

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**Boring Log: MW-13C**

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**Well Details**

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**WSP Environment & Energy**  
**5 Sullivan Street**  
**Cazenovia, New York 13035**  
**(315) 655-3900**
**Subsurface Profile**

<table>
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<tr>
<th>Depth</th>
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<th>% Recovery</th>
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<td>22</td>
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<td>20%</td>
<td><strong>Siltstone</strong></td>
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<td>Gray siltstone; moderate to strong field strength; aphanitic, massive texture; fresh to slightly decomposed, slightly disintegrated, becoming competent and fresh at 22 to 30 feet; intensely fractured, 85-degree dipping joint with orangish-brown iron staining and possible oil sheen, all other fractures are horizontal with no infilling or mineralization, petroleum odor and oily sheen in horizontal fracture at 20.6 feet. <em>continued</em></td>
</tr>
<tr>
<td>24</td>
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<td>NA</td>
<td>-</td>
<td>Total: 100% RQD: 62.5%</td>
<td></td>
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<tr>
<td>26</td>
<td>4</td>
<td>NA</td>
<td>-</td>
<td>Total: 100% RQD: 76%</td>
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<tr>
<td>30</td>
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<td>Bottom of Boring at 30 feet</td>
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* AMSL = Above mean sea level
**Boring Log: MW-14C**

**Project:** Emerson Power Transmission  
**Project No.:** 4507/Legacy 127491  
**Location:** Ithaca, New York  
**Completion Date:** March 15, 2011

**Surface Elevation (feet AMSL):** 586.61  
**TOC Elevation (feet AMSL):** 588.31  
**Total Depth (feet):** 45  
**Borehole Diameter (inches):** 4

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**Sample Data**

<table>
<thead>
<tr>
<th>Depth</th>
<th>Sample/Interval</th>
<th>PID/OVM (ppm)</th>
<th>Blow Count</th>
<th>% Recovery</th>
<th>Lithology</th>
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**Subsurface Profile**

- **Ground Surface**
  - **Silty Clay**
    - Dark brown, moist, silty clay overburden

- **Ithaca siltstone**
  - Light gray siltstone; weak to moderate field strength; thinly bedded; fresh to slightly decomposed; slightly disintegrated; intensely to moderately fractured with near vertical joints with iron staining at 14.5 to 15 feet and 19 feet, all other fractures are thin and horizontal.

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**Well Details**

**Sample Data Subsurface Profile**

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**Geologist(s):** Rob Wallace  
**Subcontractor:** Parratt Wolff, Inc.  
**Driller/Operator:**  
**Method:** Air Rotary

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**WSP Environment & Energy**  
11190 Sunrise Valley Drive  
Suite 300  
Reston, VA 20191
**Ithaca siltstone**

Light gray siltstone; weak to moderate field strength; thinly bedded; fresh to slightly decomposed; slightly disintegrated; intensely to moderately fractured with near vertical joints with iron staining at 14.5 to 15 feet and 19 feet, all other fractures are thin and horizontal. (continued)
**Ithaca siltstone**

Light gray siltstone; weak to moderate field strength; thinly bedded; fresh to slightly decomposed; slightly disintegrated; intensely to moderately fractured with near vertical joints with iron staining at 14.5 to 15 feet and 19 feet, all other fractures are thin and horizontal. *(continued)*

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**Bottom of Boring at 45 feet**

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**Geologist(s):** Rob Wallace  
**Subcontractor:** Parratt Wolff, Inc.  
**Driller/Operator:**  
**Method:** Air Rotary  
**WSP Environment & Energy**  
11190 Sunrise Valley Drive  
Suite 300  
Reston, VA 20191
Boring Log: MW-15C

Project: Emerson Power Transmission
Project No.: 4507/Legacy 127491
Location: Ithaca, New York
Completion Date: March 16, 2011

Surface Elevation (feet AMSL*): 586.76
TOC Elevation (feet AMSL*): 586.27
Total Depth (feet): 45

Borehole Diameter (inches): 4

*AMSL = Above mean sea level

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Sample Data

<table>
<thead>
<tr>
<th>Depth</th>
<th>Sample/Interval</th>
<th>PID/OVM (ppm)</th>
<th>Blow Count</th>
<th>% Recovery</th>
<th>Lithology</th>
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<tr>
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<tr>
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<td>Dark brown, moist, silty clay overburden</td>
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Subsurface Profile

<table>
<thead>
<tr>
<th>Depth</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td><em>Ithaca siltstone</em></td>
</tr>
<tr>
<td></td>
<td>Light gray siltstone; moderate field strength; thinly bedded; fresh to slightly decomposed; slightly disintegrated, becoming competent at 13.3 to 21.3 feet; intensely fractured with 30-degree dipping joint with iron staining at 12.8 feet, all other fractures are thin and horizontal.</td>
</tr>
</tbody>
</table>

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Geologist(s): Rob Wallace
Subcontractor: Parratt Wolff, Inc.
Driller/Operator: Method: Air Rotary

WSP Environment & Energy
11190 Sunrise Valley Drive
Suite 300
Reston, VA 20191
Ithaca siltstone

Light gray siltstone; moderate field strength; thinly bedded; fresh to slightly decomposed; slightly disintegrated, becoming competent at 13.3 to 21.3 feet; intensely fractured with 30-degree dipping joint with iron staining at 12.8 feet, all other fractures are thin and horizontal. (continued)
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Bottom of Boring at 45 feet