Wetland Delineation and Watercourse Identification Report
ET-Braddock Well Pad Project Area
North Braddock & East Pittsburgh Boroughs / North Versailles Township, Allegheny County, PA

Prepared For:
Merrion Oil & Gas Corporation
610 Reilly Avenue
Farmington, NM

September 2017
Revised April 2018
1.0 PROJECT LOCATION AND DESCRIPTION
Ecotune Environmental Consultants was retained by Marion Oil & Gas Corporation to conduct a wetland and watercourse investigation of a portion of the Edgar Thomson Works (the Site), located along the south side of Braddock Avenue in North Braddock and East Pittsburgh Boroughs and North Versailles Township, Allegheny County, PA. The Site consists of the eastern end of the overall Edgar Thomson Works plant. And is the potential future site of a gas well development area.

The vast majority of the Site consists of developed land inclusive of warehouse space, access ways, railroad tracks, stockpile areas and a very small extent of old field habitat.

According to the Braddock, PA USGS Map, no “blue-line” streams are located on the Site. However, it is likely that a stream enclosure is located through the central portion of the Site (flowing from north to south).

The Site is depicted in Figure 1 (Location Map, Braddock, PA, USGS Map), Figure 2 (2016 Google Aerial Image), Figures 3 & 3A (Proposed Conditions Plans), Figures 4 and 4A (USDA Soils Map and Legend), and Figure 5 (National Wetland Inventory Map).

This Report identifies and delineates all jurisdictional watercourses and wetlands within the limits of the Site.

2.0 WETLAND DELINEATION METHODOLOGY
The methodology used to determine the existence and extent of jurisdictional wetlands is set forth in the 1987 Corps of Engineers Wetland Delineation Manual. This manual has been supplemented by a number of regional supplements to more accurately delineate wetland in the United States. Because of its location, the Site was delineated using the U. S. Army Corps of Engineers. 2012 Regional Supplement to the Corps of Engineers Wetland delineation Manual: Eastern Mountain and Piedmont Region.

No recent development or earthmoving has occurred within the Site. Therefore, the Routine Onsite Determination Method was invoked due to the undisturbed nature of the Site (the soils, hydrology and/or vegetation have not been recently or significantly disturbed).

Identified wetlands were classified using the Cowardin Classification system and were delineated using the three parameter approach, inclusive of vegetation, hydrology and soil evaluation. According to the three parameter approach, all three criteria must be evaluated and must meet specific standards in order for an area to be considered a wetland. These three criteria are as follows:

1. **Hydrophytic Vegetation Indicators**: Hydrophytic vegetation in the Region is now identified by using one of four indicators. The indicators are as follows:
   - **Indicator 1 – Rapid Test for Hydrophytic Vegetation** – all dominant species across all strata are rated OBL or FACW, or a combination of these two categories based on a visual estimation,
   - **Indicator 2 – Dominance Test** – More than 50% of the dominant plant species (using the 50/20 rule) across all strata are rated OBL, FACW, or FAC,
   - **Indicator 3 – Prevalence Test** – the Prevalence Index is 3.0 or less, or
   - **Indicator 4 – Morphological Adaptations** – the plant community passes either the Dominance Test or the Prevalence Test after reconsideration of the indicator status of certain plant species that exhibit morphological adaptations for life in wetlands.

If the plant community passes any one of the four hydrophytic vegetation indicator tests, the vegetation is considered to be hydrophytic.

2. **Hydric Soil Indicators**: Hydric soil indicators are formed predominantly by the accumulation or loss of iron, manganese, sulfur or carbon compounds in a saturated, anaerobic environment. Hydric soil indicators are presented in three groups:
   - **All Soils** - used in any soil regardless of texture,
   - **Sandy Soils** - used in soil layers with USDA textures of loamy fine sand or courser, and
   - **Loamy or Clayey Soils** - used with soil layers of very fine sand or finer.

If one or more of the hydric soil indicators is present, then the soil is hydric.
3. Wetland Hydrology Indicators

Wetland hydrology indicators are used in conjunction with indicators of hydric soil and hydrophytic vegetation to determine if an area is wetland under the Corps Manual. Hydrology indicators are often the most transitory of the wetland indicators.

Wetland hydrology indicators are presented in four groups:
- **Group A** - based on direct observation of surface water or groundwater during a visit.
- **Group B** - consists of evidence that the site is subject to flooding or ponding, although it may not be inundated currently.
- **Group C** - consists of other evidence that the soil is saturated or was saturated recently.
- **Group D** - consists of landscape, vegetation and soil features that indicate contemporary rather than historical wet conditions.

Within each group, indicators are categorized into one of two groups – primary and secondary indicators, based on their reliability within the region.

3.0 WETLAND DELINEATION RESULTS

Wetland Determination Data Forms were completed for each habitat type located within the Site and can be seen in Appendix A of this report. Data Forms sampling locations are indicated on Figure 3.

At no point within the limits of the Site were all three required wetland parameters met, therefore, no wetlands exist within the limits of the Site.

4.0 WATERCOURSE DETERMINATION

No defined bed or bank areas exist on the Site. Therefore, no open or natural watercourses are located within the Site boundaries.

However, there appears to be a stream enclosure that bisects the site. The stream enclosure appears to originate north of the Site on the north side of Braddock Avenue near the terminus of O’Connell Boulevard. The stream enclosure proceeds south through the Site and terminates at an end wall along Turtle Creek south of the Site (refer to Figure 3A).

It appears that both the proposed water and gas lines to be installed to the west of the pad area will cross the stream enclosure.

Relevant photographs of the Site are contained in Appendix B and are keyed to Figure 3.
Figure 1 – Location Map (Braddock, PA USGS Map)
Figure 2 – Location Map (2016 Google Earth)
### Map Unit Legend

<table>
<thead>
<tr>
<th>Map Unit Symbol</th>
<th>Map Unit Name</th>
<th>Acres in AOI</th>
<th>Percent of AOI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CuC</td>
<td>Culleoka channery silt loam, 8 to 15 percent slopes</td>
<td>1.4</td>
<td>0.6%</td>
</tr>
<tr>
<td>EvC</td>
<td>Ernest-Vandergrift silt loams, 8 to 15 percent slopes</td>
<td>8.9</td>
<td>4.1%</td>
</tr>
<tr>
<td>GQF</td>
<td>Gilpin-Upshur complex, very steep</td>
<td>42.9</td>
<td>19.9%</td>
</tr>
<tr>
<td>UB</td>
<td>Urban land</td>
<td>95.8</td>
<td>44.4%</td>
</tr>
<tr>
<td>UCB</td>
<td>Urban land-Culleoka complex, gently sloping</td>
<td>0.2</td>
<td>0.1%</td>
</tr>
<tr>
<td>URB</td>
<td>Urban land-Rainsboro complex, gently sloping</td>
<td>55.4</td>
<td>25.7%</td>
</tr>
<tr>
<td>W</td>
<td>Water</td>
<td>11.0</td>
<td>5.1%</td>
</tr>
<tr>
<td><strong>Totals for Area of Interest</strong></td>
<td></td>
<td><strong>215.6</strong></td>
<td><strong>100.0%</strong></td>
</tr>
</tbody>
</table>

**Figure 4A – Site Soils Legend**  
**USDA Soil Survey**
Figure 5 – NWI Map
APPENDIX A
WETLAND DETERMINATION DATA FORMS
overall content won't be complete
### VEGETATION (Four Strata) - Use scientific names of plants.

#### Tree Stratum (Plot size: 30’)

<table>
<thead>
<tr>
<th>Sampling Point</th>
<th>DF-1</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>No.</th>
<th>Scientific Name</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Verbesina alternifolia</td>
<td>50</td>
<td>X</td>
<td>FAC</td>
</tr>
<tr>
<td>2.</td>
<td>Solidago altissima</td>
<td>20</td>
<td></td>
<td>FACU</td>
</tr>
<tr>
<td>3.</td>
<td>Alliaria petiolata</td>
<td>10</td>
<td></td>
<td>FACU</td>
</tr>
</tbody>
</table>

**50/20 = Total Cover**

#### Sapling/Shrub Stratum (Plot size: 15’)

<table>
<thead>
<tr>
<th>No.</th>
<th>Scientific Name</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Verbesina alternifolia</td>
<td>50</td>
<td>X</td>
<td>FAC</td>
</tr>
<tr>
<td>2.</td>
<td>Solidago altissima</td>
<td>20</td>
<td></td>
<td>FACU</td>
</tr>
</tbody>
</table>

**50/20 = Total Cover**

#### Herb Stratum (Plot size: 5’)

<table>
<thead>
<tr>
<th>No.</th>
<th>Scientific Name</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Verbesina alternifolia</td>
<td>50</td>
<td>X</td>
<td>FAC</td>
</tr>
<tr>
<td>2.</td>
<td>Solidago altissima</td>
<td>20</td>
<td></td>
<td>FACU</td>
</tr>
</tbody>
</table>

**50/20 = Total Cover**

#### Woody Vine Stratum (Plot size: 30’)

<table>
<thead>
<tr>
<th>No.</th>
<th>Scientific Name</th>
<th>% Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Verbesina alternifolia</td>
<td>50</td>
<td>X</td>
<td>FAC</td>
</tr>
<tr>
<td>2.</td>
<td>Solidago altissima</td>
<td>20</td>
<td></td>
<td>FACU</td>
</tr>
</tbody>
</table>

**50/20 = Total Cover**

---

**Dominance Test worksheet:**

- Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)
- Total Number of Dominant Species Across All Strata: 3 (B)
- Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

- Total % Cover of:
  - OBL species x 1 =
  - FACW species x 2 =
  - FAC species x 3 =
  - FACU species x 4 =
  - UPL species x 5 =
- Column Totals: (A) (B)
- Prevalence Index = B/A =

**Hydrophytic Vegetation Indicators:**

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is > 50%
3. Prevalence Test is ≤ 3.0
4. Morphological Adaptations

**Definitions of Vegetation Strata:**

- **Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ____ No X

Remainder: (Include photo numbers here or on a separate sheet.)
### Profile Description:
(Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Color (moist)</th>
<th>%</th>
<th>Redox Features</th>
<th>Color (moist)</th>
<th>%</th>
<th>Type</th>
<th>Loc</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-3</td>
<td>NA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3-16</td>
<td>10YR/5</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.
2Location: PL=Pore Lining, M=Matrix.

### Hydric Soil Indicators:
- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) **(LRR N)**
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron Manganese Masses (F12) **(LRR N, MLRA 136, 147)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

### Indicators for Problematic Hydric Soils:
- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Other (Explain in Remarks)

### Restrictive Layer (if observed):
- Type: 
- Depth (inches): 
- Hydric Soil Present? Yes _____ No _____ X

### Remarks:
WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: ET-braddock Well Pad
City/County: Allegheny
Applicant/Owner: Marion Oil & Gas
State: PA
Investigator(s): ECOTUNE- PG
Sampling Date: 12-04-2017
Section, Township, Range: Braddock Boro
Landform (hillslope, terrace, etc.): Flat
Local relief (concave, convex, none): None
Slope (%): 3
Lat: 40.3937°
Long: 79.8461°
Datum: 
Soil Map Unit Name: UB
NWI Classification: Not Mapped

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

<table>
<thead>
<tr>
<th>Hydrophytic Vegetation Present?</th>
<th>Yes</th>
<th>No</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydric Soil Present?</td>
<td>Yes</td>
<td>No</td>
<td>X</td>
</tr>
<tr>
<td>Wetland Hydrology Present?</td>
<td>Yes</td>
<td>No</td>
<td>X</td>
</tr>
<tr>
<td>Is the Sampled Area within a Wetland?</td>
<td>Yes</td>
<td>No</td>
<td>X</td>
</tr>
</tbody>
</table>

Remarks:

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- Aquatic Fauna (B13)

Secondary Indicators (minimum of two required)

- True Aquatic Plants (B14)
- Oxygen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots (C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)
- Moss Trim Lines (C8)
- Dry-Season Water Table (C10)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Stunted or Stressed Plants (D1)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- Microtopographic Relief (D4)
- FAC-Neutral Test (D5)

Field Observations:

- Surface Water Present? Yes No X Depth (inches): _______
- Water Table Present? Yes No X Depth (inches): _______
- Saturation Present? Yes No X Depth (inches): _______

Wetland Hydrology Present? Yes No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Remarks:
# VEGETATION (Four Strata)

- Use scientific names of plants.

## Definitions of Vegetation Strata:

- **Tree** – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
- **Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody Vine** – All woody vines greater than 3.28 ft in height.

## Sampling Point: DF-2

### Dominance Test worksheet:

<table>
<thead>
<tr>
<th>Number of Dominant Species That Are OBL, FACW, or FAC:</th>
<th>0 (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Dominant Species Across All Strata:</td>
<td>3 (B)</td>
</tr>
<tr>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC:</td>
<td>0 (A/B)</td>
</tr>
</tbody>
</table>

### Prevalence Index worksheet:

<table>
<thead>
<tr>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>OBL species</td>
<td>x 1 =</td>
</tr>
<tr>
<td>FACW species</td>
<td>X 2 =</td>
</tr>
<tr>
<td>FAC species</td>
<td>X 3 =</td>
</tr>
<tr>
<td>FACU species</td>
<td>X 4 =</td>
</tr>
<tr>
<td>UPL species</td>
<td>X 5 =</td>
</tr>
</tbody>
</table>

Column Totals: (A) (B)

Prevalence Index = B/A =

### Hydrophytic Vegetation Indicators:

1. Rapid Test for Hydrophytic Vegetation
2. Dominance Test is > 50%
3. Prevalence Test is ≤ 3.0
4. Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
   - Problematic Hydrophytic Vegetation² (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

### Hydrophytic Vegetation Present?:

Yes [ ] No [ ]

---

### Tree Stratum (Plot size: 30’)

<table>
<thead>
<tr>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

50/20 = [ ] = Total Cover

### Sapling/Shrub Stratum (Plot size: 15’)

<table>
<thead>
<tr>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
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<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
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<tr>
<td>7.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

50/20 = [ ] = Total Cover

### Herb Stratum (Plot size: 5’)

<table>
<thead>
<tr>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Polygonatum biflorum</td>
<td>2</td>
<td>FACU</td>
</tr>
<tr>
<td>2. Polystichum acrostichoides</td>
<td>3</td>
<td>X FACU</td>
</tr>
<tr>
<td>3. Dactylis glomerata</td>
<td>5</td>
<td>X FACU</td>
</tr>
<tr>
<td>4. Solidago altissima</td>
<td>5</td>
<td>X FACU</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

50/20 = 7.5 / 3 = 15 = Total Cover

### Woody Vine Stratum (Plot size: 30’)

<table>
<thead>
<tr>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

50/20 = 5/2 = Total Cover

Remarks: (Include photo numbers here or on a separate sheet.)
## Profile Description:
(Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2-16</td>
<td>10YR5/6</td>
<td>98</td>
<td>10YR4/4</td>
<td>Mineral</td>
</tr>
</tbody>
</table>

1 Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. 2 Location: PL=Pore Lining, M=Matrix.

### Hydric Soil Indicators:
- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)

### Indicators for Problematic Hydric Soils:
- 2 cm Muck (A10) (MLRA 147)
- Coast Prairie Redox (A16) (MLRA 147, 148)
- Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

### Restrictive Layer (if observed):
- Type: 
- Depth (inches): 
- Hydric Soil Present?: Yes _____ No ___ X ___

### Remarks:

3 Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
APPENDIX B
SITE PHOTOGRAPHS

All Photographs Taken On December 4, 2017

Figure 3 – Photograph Location Plan