# Attachment F – Wetlands Delineation Report

# Wetlands and Other Waters

# Delineation Report

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## STATEMENT OF CERTIFICATION

*The analyses, opinions and conclusions in this report are based entirely on EnviroScience's unbiased, professional judgment. EnviroScience's compensation is not in any way contingent on any action or event resulting from this study. Neither EnviroScience nor any EnviroScience employee has any vested interest in the property examined in this study.*

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## EXECUTIVE SUMMARY

EnviroScience, Inc. performed a delineation of wetlands and other waters in February and August 2016 for Tetra Tech within the 110.1 acre area associated with the proposed Trumbull Energy Center project located in the Village of Lordstown, Trumbull County, Ohio (the Study Area). The Study Area is bound on the south by Hallock-Young Road, on the west by Tod Avenue, and is located south of Henn Parkway. An easement containing overhead transmission lines crosses the eastern portion of the Study Area. This easement is approximately 200 feet wide and runs northeast to southwest through the Study Area. A narrow gravel access driveway, that originates at Hallock-Young Road, is located in the eastern portion of the Study Area. This access drive is approximately 475 feet and ends at a natural gas storage tank.

Seventeen wetlands were identified and delineated within the entire Study Area and account for 35.362 acres. One perennial stream, one intermittent stream, and three ephemeral streams were identified and delineated on-site, accounting for a total of 4,729 linear feet (1.120 acres). No other open water resources were identified within the Study Area. The Study Area is surrounded by industrial, residential, and forested land uses and includes open field, old field, forest, and wetland plant communities with the Study Area. Seven distinct vegetative communities were identified within the Study Area including three wetland community types, palustrine emergent, palustrine scrub/shrub, and palustrine forest.

Wetlands and waterbodies are under the jurisdiction of the Ohio Environmental Protection Agency or United States Army Corps of Engineers. No filling may occur within these areas without their written permission.

## 1.0 INTRODUCTION AND SITE DESCRIPTION

EnviroScience, Inc. (EnviroScience) performed a delineation of wetlands and other waters in February and August 2016 for Tetra Tech, Inc. (Tetra Tech) within the 110.1 acre area associated with the proposed Trumbull Energy Center (the Project) in the Village of Lordstown, Trumbull County, Ohio (the Study Area). The Study Area is bound on the south by Hallock-Young Road, on the west by Tod Avenue (OH-45), and is located south of Henn Parkway. An easement containing overhead transmission lines crosses the eastern portion of the Study Area. This easement is approximately 200 feet wide and runs northeast to southwest through the Study Area. A narrow gravel access driveway, that originates at Hallock-Young Road, is located in the eastern portion of the Study Area. This access drive is approximately 475 feet and ends at a natural gas storage tank.

Seven distinct vegetative communities were identified within the Study Area, including three wetland community types. The Study Area exists primarily as forest and wetland; the utility easement is dominated by open field, old field, and wetland communities. The land just northwest of the Study Area was actively being constructed during the field visit. The land to the northeast contains industrial buildings and associated stormwater feature. The land east of the Study Area includes residential development. The land use immediately west and south of the Study Area includes forest. The Study Area crosses seventeen wetlands, one perennial stream, one intermittent stream, and three ephemeral streams.

The Study Area is located in the Mahoning River drainage basin (Hydrologic # 05030103) which drains approximately 540 square miles in northeast Ohio and western Pennsylvania. It is within the Erie Drift Plain Plateau ecoregion (Woods *et al.* 1998) of Ohio. The Study Area is located within the area covered by the Northcentral and Northeast Regional Supplement (United States Army Corps of Engineers [USACE] 2012) and associated plant list (Lichvar 2012). The Study Area is regulated by the USACE Pittsburgh District.

## 2.0 METHODS

Government agencies regulate coastal and inland waters for commerce, flood control, and water quality. These water bodies provide numerous functions and values necessary to protect and sustain our quality of life. Wetlands comprise a significant portion of regulated waters. The USACE and United States Environmental Protection Agency (USEPA) jointly define wetlands as:

> "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a

> prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

The remaining deepwater aquatic habitats (open waters) are defined by the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) as:

> ". . . areas that are permanently inundated at mean annual water depths >6.6 ft or permanently inundated areas <6.6 ft in depth that do not support rooted emergent or woody plant species."

The methods used for determining and delineating wetlands and other waters (ponds, lakes, streams, rivers, etc.) strictly adhere to those found in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region* (USACE 2012). Wetlands and open water boundaries were determined by the disappearance of one or more of their diagnostic characteristics.

Ordinary high water marks (OHWM) defined the outermost regulatory boundaries of ephemeral and open waters.

Each sample plot and the perimeter of each wetland and other water was surveyed and marked in the field with plain pink flags and pink "wetland boundary" flags, respectively. A global positioning system (GPS) unit with submeter accuracy was used, in conjunction with aerial photography and topographic figures, for the survey. Computer Aided Design (CAD) software was used to determine wetland dimensions and Geographic Information Systems (GIS) software was used to produce a map of the Study Area showing wetlands and other waters.

## 2.1 WETLANDS

### 2.1.1 Determination

A review of secondary literature sources was performed to find known wetlands and other significant ecological resources and areas with high potential for wetlands in or near the proposed Study Area. Resources include the following:

1. United States Geological Survey (USGS) topographic maps;
2. National Wetlands Inventory (NWI) maps;
3. Web Soil Survey; and
4. Aerial Photographs.

A field inspection of the Study Area was then completed to identify major plant communities and to visually locate potential wetlands. The routine, on-site (Level 2) wetland determination was used to perform the delineation. Wetland communities were

classified according to the classification scheme of Cowardin *et al.* (1979) (Table 1). Mature non-wetland communities that had reached a stable equilibrium were classified according to Anderson (1982) and Gordon (1966, 1969). Disturbed and successional non-wetland communities were classified as one of the categories described in Table 2.

**Table 1. Wetland Communities (Cowardin *et al*. 1979)**

| Community | Description |
|---|---|
| PEM | Palustrine Emergent |
| PSS | Palustrine Scrub-Shrub |
| PFO | Palustrine Forested |
| POW | Palustrine Open Water |

**Table 2. Disturbed and Successional Non-Wetland Communities**

| Community | | Description |
|---|---|---|
| Disturbed | Urban | regularly maintained land; residential; industrial |
| | Agricultural | land used for producing crops or raising livestock; cropland; pastureland |
| | Cleared | disturbed areas devoid of most vegetation from recent clearing, grading or filling |
| Successional | Open Field | herbaceous community without woody vegetation |
| | Old Field | herbaceous community having woody vegetation coverage of <50% |
| | Scrub-Shrub | community dominated by woody vegetation <6 meters (m) (20 feet [ft]) tall |
| | Forest | community dominated by woody vegetation >6 m (20 ft) tall |

Sample plots were established within each natural community and potential wetland within the Study Area. Complete data for each sample plot were collected and recorded on the USACE's Routine Wetland Determination Data Forms contained in the applicable USACE Regional Supplement (USACE 2012). Vegetation, hydrology, and soils were evaluated at each sample plot.

#### 2.1.1.1 Vegetation

To detect the presence or absence of hydrophytic vegetation, four plant strata were evaluated within specific radii of the plot center. Each stratum was ranked by aerial cover in descending order of abundance. Table 3 provides information on each vegetative stratum.

**Table 3. Vegetative Strata**

| Stratum | Definition | Survey Area |
|---|---|---|
| Tree | woody plants > or equal to 3 inches (in) (7.6 centimeters [cm]) diameter at breast height (dbh), regardless of height | 30 ft (9.1 m) radius |
| Sapling/shrub | woody plants < 3 in. (7.6 cm) dbh and ≥3.28 ft (1 m) tall | 15 ft (4.6 m) radius |
| Herbaceous | herbs and woody plants less than 3.28 ft (1 m) in height | 5 ft (1.5 m) radius |
| Woody vines | woody vines > 3.28 ft (1 m) in height | 30 ft (9.1 m) radius |

Percent dominance was obtained for each species and within each stratum. Dominant species are those which cumulatively totaled in order of abundance immediately exceed 50 percent (%) and also include any individual species with an abundance of 20% or more (USACE 2012). Dominant taxa were identified using recognized local guides: nomenclature follows the *National List of Scientific Plant Names* (USDA 1982). Following the identification of each plant species present within the plot, all dominant species within each stratum were assigned a wetland indicator status according to Lichvar (2014). Indicators are summarized in Table 4.

**Table 4. Plant Indicators**

| Indicator | Category | Definition |
|---|---|---|
| OBL | Obligate Wetland | almost exclusively (> 99% of occurrences) found in wetlands |
| FACW | Facultative Wetland | most likely found in wetlands (67-99% of occurrences) |
| FAC | Facultative | equally likely found in wetlands or non-wetlands (34-66%) |
| FACU | Facultative Upland | most likely found in non-wetlands (1-33% occurrence in wetlands) |
| UPL | Obligate Upland | almost exclusively found in non-wetlands (< 1% occurrence in wetlands) |

An 'NI' (no indicator) designation represents species where not enough information is available to assign an indicator; an 'NL' (no listing) designation is given to species whose identification was not determined sufficiently enough to assign an indicator. Once the indicator status is assigned to each dominant species, the evaluator can perform the percent dominance test according to the protocol outlined within the applicable Regional Supplement (USACE 2012) to determine if the plot meets the criterion for hydrophytic vegetation.

#### 2.1.1.2 Hydrology

To detect the presence or absence of wetland hydrology, surface, and subsurface hydrologic indicators were evaluated at the sample plot and throughout the adjacent community. Primary sources of wetland hydrology include direct precipitation, headwater flooding, backwater flooding, groundwater or any combination of these. When obtaining data at each sample plot, the evaluator observes evidence of hydrology. Primary indicators of hydrology (only one of these is necessary to indicate sufficient wetland hydrology) include the presence of surface water, water marks, sediment deposits, drift deposits, etc. (USACE 2012). Secondary indicators of hydrology (which requires two or more at each sample plot) include surface soil cracks, drainage patterns, crayfish burrows, etc. (USACE 2012).

#### 2.1.1.3 Soils

The upper horizons of the soil at each sample plot were examined to detect the presence or absence of hydric soils indicators. Current USACE guidance requires the evaluator to assess the upper 20 inches of soil for hydric soil characteristics. Most indicators of hydric soils require an assessment of soil matrix color and mottle characteristics (Environmental Laboratory 1987, USACE 2012) for each horizon. These characteristics were determined by comparing a moist sample with *Munsell Soil Color Chart* (Munsell Color 2009) or *The Globe Soil Color Book* (Visual Color Systems 2004).

### 2.1.2 ORAM Categorization

Each wetland system was categorized in accordance with version 5.0 of the Ohio Environmental Protection Agency's (Ohio EPA's) Ohio Rapid Assessment Method for Wetlands (ORAM) (Mack 2000, 2001). Field scoring forms are contained in Appendix D.

Ohio EPA has established three primary and three intermediate categories of wetland quality which are based on a wetland's size, its hydrologic function, the types of plant communities present, the physical structure of the wetland plant community and the wetland's level of disturbance (OAC 3745-1-54). The relationship between the various wetland categories and their respective ORAM scores is presented in Table 5. EnviroScience also evaluated the Study Area for the presence of state threatened and endangered species as part of the ORAM evaluation.

**Table 5. ORAM Scores and Categories**

| ORAM Score | ORAM Category | Description |
|---|---|---|
| 0-29.9 | Category 1 | Lowest quality, and are generally characterized by hydrological isolation, lack of plant species diversity, insufficient habitat availability, and limited potential to perform major wetland functions. |
| 30-34.9 | Category 1 or 2 (Gray Zone) | ORAM score is insufficient to categorize wetland. In absence of a non-rapid method such as VIBI, assign the wetland to the higher functional category (Category 2) |
| 35-44.9 | Modified Category 2 (Modified 2) | Category 2 wetlands that may be of lower quality or degraded but have reasonable potential to be restored. |
| 45-59.9 | Category 2 | Wetlands that have the capability to support a moderate wildlife community or maintain mid-level hydrological functions. |
| 60-64.9 | Category 2 or 3 (Gray Zone) | ORAM score is insufficient to categorize wetland. In absence of a non-rapid method such as VIBI, assign the wetland to the higher functional category (Category 3) |
| 65-100 | Category 3 | Highest quality, generally characterized by a high level of biological diversity and topographical variation, threatened or endangered species, large numbers of native species, or a high level of functional importance to its surroundings. |

Category 3 wetlands have the highest quality, and are generally characterized by a high level of biological diversity and topographical variation, large numbers of native species or a high level of functional importance to its surroundings. Category 2 wetlands have the capability to support a moderate wildlife community or maintain mid-level hydrological functions. Category 2 also includes wetlands that may be of lower quality or degraded, but have reasonable potential to be restored (Modified Category 2). Category 1 wetlands are of the lowest quality, and are generally characterized by hydrological isolation, lack of plant species diversity, insufficient habitat availability, and limited potential to perform major wetland functions (OAC 3745-1-54).

Since the ORAM is a rapid assessment method, there are certain wetland scores which fail to clearly differentiate the wetland's functional category. The so-called "gray zone" wetlands fall between the definite scoring breaks between the categories. Ohio EPA requires that "gray zone" wetlands be considered as the higher category unless more detailed functional assessments such as the VIBI or AmphIBI are conducted on those wetlands. As a result of this requirement, wetlands whose scores fall between the breakpoints for Categories 1 and 2 (1 or 2 gray zone wetlands) wetlands will be considered as Category 2 wetland for purposes of this report. Wetlands whose scores fall between the breakpoints for Categories 2 and 3 wetlands (2 or 3 gray zone wetlands) will be considered a Category 3 wetland for purposes of this report.

### 2.1.3 Cowardin Wetland Classification

The United States Fish and Wildlife Service (USFWS) NWI uses the *Classification of Wetlands and Deepwater Habitats of the United States* to classify wetland habitat types (Cowardin *et al.* 1979). This classification system is hierarchical and defines five major systems – Marine, Estuarine, Riverine, Lacustrine, and Palustrine. The Palustrine system was the only type of wetland system identified within the Study Area and is defined as including all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean driven-derived salts is below 0.5 percent (Cowardin *et al.* 1979).

## 2.2 OTHER WATERS

Other waters include ephemeral and open waters. These waters are broken down into two categories: 1) ponds and lakes; and 2) streams and rivers.

### 2.2.1 Ponds and Lakes

Palustrine systems other than wetlands, and lacustrine waters are addressed as ponds and lakes, respectively. These non-linear open waters may harbor important aquatic communities such as vegetated shallows (aquatic bed) and mud flats. They are classified according to Cowardin *et al.* (1979).

### 2.2.2 Streams and Rivers

Riverine systems are linear flowing waters bounded by a channel. Cowardin *et al.* (1979) divides these system into four groups, however, for the purpose of this report streams are placed into three regulatory types, listed below.

Ephemeral: An ephemeral stream only conveys runoff precipitation and meltwater. It is permanently located above the water table and is most often dry.

Intermittent: An intermittent stream is located below the water table for parts of the year, but does have dry periods.

Perennial: A perennial stream typically has flowing water throughout the entire year.

In addition to flow characteristics, the USACE has defined other regulatory categories that apply to streams, which are listed below (USACE and USEPA, 2007).

Traditional Navigable Waters (TNW): all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide.

Relatively Permanent Waters (RPW): non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months).

Non-Relatively Permanent Waters (Non-RPW): non-navigable tributaries of traditional navigable waters that are not relatively permanent where the tributaries typically do not have continuous flow at least seasonally (e.g., typically three months).

The USACE and USEPA will assert jurisdiction under the Clean Water Act on Traditional Navigable Waters (TNWs) and all wetlands adjacent to them, non-navigable tributaries of TNWs that are Relatively Permanent Waters (RPW) (i.e., tributaries that typically flow year-round or have continuous flow at least seasonally); and wetlands that directly abut such tributaries. In addition, the agencies will assert jurisdiction over every water body that is not an RPW if that water body is determined (on the basis of a fact-specific analysis) to have a significant nexus with a TNW.

> "A significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or an insubstantial effect on the chemical, physical, and/or biological, integrity of a TNW. Principal considerations when evaluating significant nexus include the volume, duration, and frequency of the flow of water in the tributary and the proximity of the tributary to a TNW, plus the hydrologic, ecologic, and other functions performed by the tributary and all of its adjacent wetlands." (Rapanos 2006).

### 2.2.3 HHEI and QHEI

Data collection for all streams included the completion of either the Ohio EPA Headwater Habitat Evaluation Index (HHEI) for primary headwater habitat (PHWH) streams or the Qualitative Habitat Evaluation Index (QHEI) for larger streams. Biologists are Ohio EPA trained to assess streams using the QHEI and HHEI. Following the Ohio EPA guidance, any stream with a drainage area of less than or equal to one square mile (2.589 square kilometer) and pools with a maximum water depths less than or equal to 15.75 in (40 cm) were evaluated using the HHEI (Ohio EPA 2012). The QHEI was used to evaluate streams with drainage areas greater than one square mile and pools with maximum water

depths greater than 15.75 in (40 cm; Ohio EPA 2006). The assessment location is representative of the stream/headwater within the Study Area.

## 3.0 LITERATURE REVIEW

### 3.1 USGS TOPOGRAPHIC MAP

The USGS 7.5-minute topographic series (Warren Quadrangle) is shown on Figure 2 (Appendix A). The Study Area is depicted as relatively flat with elevations ranging from approximately 950 feet above mean sea level (AMSL) to 970 feet AMSL. One USGS named stream, Mud Creek, is depicted flowing northeast through the Study Area.

### 3.2 NWI MAP

The NWI map (Warren Quadrangle) of the Study Area is shown on Figure 3 in Appendix A. Two wetland systems are depicted within the Study Area and along Mud Creek. A portion of a palustrine forested, broad-leaved deciduous/emergent, persistent, seasonally flooded (PFO1/EM1C) system is shown along the northern border and a palustrine scrub-shrub, broad-leaved deciduous, temporarily flooded (PSS1A) system is shown in the southwestern portion of the Study Area. Both identified wetland systems correspond with Wetland W-1.

### 3.3 COUNTY SOIL SURVEY

The Study Area is found on the *Soil Survey of Trumbull County, Ohio* and was accessed on the Soil Survey Geographic (SSURGO) Database (USDA, 2010) (Figure 4, Appendix A). Eight soil types and Water (W), which comprises 1.0 acre (0.7%) of the Study Area, are depicted within the Study Area. Two of these soil types are listed as predominantly hydric within Trumbull County. All soil types and descriptions are listed in Table 6.

**Table 6. Soil Types Mapped within the Study Area**

| Symbol | Soil Type | Status | Common Landform | Percent Hydric | Acres in Study Area | Percent Within Study Area |
|---|---|---|---|---|---|---|
| Ct | Condit silt loam | Predominantly Hydric | depressions on till plains, flats on till plains | 95 | 9.1 | 8.3 |
| Ho | Holly silt loam, frequently flooded | Predominantly Hydric | flood plains | 92 | 20.8 | 18.9 |
| MgA | Mahoning silt loam, 0 to 2 percent slopes | Predominantly Non-Hydric | depressions | 10 | 0.8 | 0.7 |

| Symbol | Soil Type | Status | Common Landform | Percent Hydric | Acres in Study Area | Percent Within Study Area |
|---|---|---|---|---|---|---|
| MgB | Mahoning silt loam, 2 to 6 percent slopes | Predominantly Non-Hydric | depressions | 10 | 4.6 | 4.2 |
| RsB | Rittman silt loam, 2 to 6 percent slopes | Not Hydric | knolls on till plains | 0 | 3.4 | 3.1 |
| RsC | Rittman silt loam, 6 to 12 percent slopes | Not Hydric | drainageways on till plains, ridges on till plains | 0 | 3.6 | 3.3 |
| WbA | Wadsworth silt loam, 0 to 2 percent slopes | Predominantly Non-Hydric | depressions | 8 | 40.1 | 36.5 |
| WbB | Wadsworth silt loam, 2 to 6 percent slopes | Predominantly Non-Hydric | till plains | 8 | 26.7 | 24.3 |

### 3.4 AERIAL PHOTOGRAPHY

A recent aerial photograph of the Study Area is shown on Figure 5 (Appendix A). The Study Area is bound on the south by Hallock-Young Road, on the west by OH-45, and is located south of Henn Parkway. The Study Area is depicted as predominantly forested land. An easement crosses the eastern portion of the Study Area. This easement is approximately 200 feet wide and runs northeast to southwest through the Study Area. A narrow gravel access driveway, that originates at Hallock-Young Road, is depicted in the eastern portion of the Study Area. This access drive is approximately 475 feet and ends at a natural gas storage tank. The aerial map depicts a structure near the southwest corner of the Study Area. This structure was not present during the field survey. Several wetlands and stream crossings are visible on the aerial map. The surrounding land use consists of residential, forested, and industrial property.

### 3.5 U.S. FISH AND WILDLIFE SERVICE

The Study Area was examined for suitable habitat for federally listed species whose known range includes Trumbull County, Ohio. These species are the federally endangered Indiana bat (*Myotis sodalis*), the federally threatened northern long-eared bat (*Myotis septentrionalis*), the federally endangered clubshell (*Pleurobema clava*), the federally threatened eastern massasauga (*Sistrurus catenatus catenatus*), the federal species of concern eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), and the federal species of concern bald eagle (*Haliaeetus leucocephalus*).

Living or dead trees with shedding or peeling bark or cavities may serve as roosting trees for the Indiana bat and/or the northern long-eared bat. In addition, sheds and barns may serve as roosting habitat for the northern long-eared bat. No potential winter

hibernaculum, barns or sheds are located within the Study Area. The Study Area is predominantly forested and contains a significant riparian corridor. An in-depth habitat analysis was not performed; however, all on-site forested areas contained some trees that displayed suitable habitat features. Suitable habitat features include, but are not limited to, larger canopy trees, trees exhibiting peeling bark, holes or crevices, open understory, and stream or wetland corridors. All tree clearing is recommended to occur within the USFWS approved seasonal clearing window of October 1 through March 31. If the seasonal clearing restriction cannot be followed, further coordination with the USFWS is recommended prior to clearing any trees within the Study Area.

The clubshell mussel prefers clean, loose sand and gravel in medium to small rivers and streams. Mud Creek is a larger stream with appropriate substrate for the clubshell. However, Mud Creek is not listed in Appendix A of the Ohio Mussel Protocol and does not have a drainage area over ten square miles.

Preferred habitat for the eastern massasauga includes wet areas including wet prairies, marshes, and low areas along rivers and lakes. Massasaugas also use adjacent uplands during part of the year. The majority of the Study Area is composed of upland and wetland forest, which is not preferable habitat for the eastern massasauga. However, the existing transmission easement has potential eastern massasauga habitat, especially around the delineated PEM wetlands.

The eastern hellbender is found in habitats with swift-running, fairly shallow, and highly oxygenated water. They require an abundance of large, flat rocks or logs for use as cover objects. Mud Creek does not provide appropriate habitat for the eastern hellbender.

The bald eagle nests in large trees near water. No bald eagle habitat was observed within the Study Area.

If wetlands or streams will be impacted in association with the Project, USFWS coordination will be initiated by the USACE. If no wetland or stream impacts are proposed, USFWS coordination is not required. Coordination with the Ohio Department of Natural Resources (ODNR) is recommended in accordance with Ohio's rules regarding threatened and endangered species.

### 3.6 FEMA Flood Insurance Rate Map

The Federal Emergency Management Agency (FEMA) produces Flood Insurance Rate Maps (FIRM) that shows the locations of predictable floodplain during precipitation flood events. The FIRM map of the Study Area identified one area located within the FEMA-defined 100-year flood zone located within the Study Area (Figure 6, Appendix A). This

area corresponds to the floodplain of Mud Creek. Prior to construction in the 100-year flood zone, coordination with the Village of Lordstown is recommended.

## 4.0 RESULTS

Thirty-four sample plots were established within seven natural communities. Three of these communities are considered wetland. Table 7 summarizes the sample plot data.

**Table 7. Sample Plot Results**

| Sample Plot | Photo* | Community** | Hydrophytic Vegetation | Wetlands Hydrology | Hydric Soil | Status | Location |
|---|---|---|---|---|---|---|---|
| SP-1 | 1 | maintained lawn | | | X | Non-Wetland | SP-1 |
| SP-2 | 2 | PSS | X | X | X | Wetland | W-1 |
| SP-3 | 3 | PFO | X | X | X | Wetland | W-1 |
| SP-4 | 4 | PFO | X | X | X | Wetland | W-2 |
| SP-5 | 5 | Forest | | X | | Non-Wetland | SP-5 |
| SP-6 | 6 | PFO | X | X | X | Wetland | W-1 |
| SP-7 | 7 | PEM | X | X | X | Wetland | W-1 |
| SP-8 | 8 | PSS | X | X | X | Wetland | W-1 |
| SP-9 | 9 | PFO | X | X | X | Wetland | W-3 |
| SP-10 | 10 | Forest | | | | Non-Wetland | SP-10 |
| SP-11 | 11 | PFO | X | X | X | Wetland | W-4 |
| SP-12 | 12 | PFO | X | X | X | Wetland | W-5 |
| SP-13 | 13 | PFO | X | X | X | Wetland | W-1 |
| SP-14 | 14 | PEM | X | X | X | Wetland | W-1 |
| SP-15 | 15 | PEM | X | X | X | Wetland | W-1 |
| SP-16 | 16 | PFO | X | X | X | Wetland | W-1 |
| SP-17 | 17 | PFO | X | X | X | Wetland | W-1 |
| SP-18 | 18 | Forest | | X | | Non-Wetland | SP-18 |
| SP-19 | 19 | PFO | X | X | X | Wetland | W-6 |
| SP-20 | 20 | PEM | X | X | X | Wetland | W-7 |
| SP-21 | 21 | Old field | | | X | Non-Wetland | SP-21 |
| SP-22 | 22 | Forest | | X | | Non-Wetland | SP-22 |
| SP-23 | 23 | PFO | X | X | X | Wetland | W-7 |
| SP-24 | 24 | PSS | X | X | X | Wetland | W-10 |
| SP-25 | 25 | Open field | | | | Non-Wetland | SP-25 |
| SP-26 | 26 | PEM | X | X | X | Wetland | W-11 |

| Sample Plot | Photo* | Community** | Hydrophytic Vegetation | Wetlands Hydrology | Hydric Soil | Status | Location |
|---|---|---|---|---|---|---|---|
| SP-27 | 27 | PEM | X | X | X | Wetland | W-13 |
| SP-28 | 28 | PEM | X | X | X | Wetland | W-14 |
| SP-29 | 29 | PFO | X | X | X | Wetland | W-13 |
| SP-30 | 30 | Forest | | X | | Non-Wetland | SP-30 |
| SP-31 | 31 | PFO | X | X | X | Wetland | W-17 |
| SP-32 | 32 | Open Field | | | | Non-Wetland | SP-32 |
| SP-33 | 33 | PSS | X | X | X | Wetland | W-7 |
| SP-34 | 34 | PFO | X | X | X | Wetland | W-8 |

*photos are located in Appendix B
** PEM = Palustrine Emergent; PSS = Palustrine Scrub/Shrub; PFO = Palustrine Forest.

Each sample plot, delineated wetland, and other waters are illustrated on Figure 5 (Appendix A). The following section describes general conditions found within each plant community and summarizes relevant information from the data forms, located in Appendix C.

### 4.1 NON-WETLANDS

Four upland communities exist within the Study Area and include maintained lawn, open field, old field, and forest. The maintained lawn community is represented by Sample Plot 1. Typical vegetation within this community includes Kentucky bluegrass (*Poa pratensis*, FACU), common selfheal (*Prunella vulgaris*, FACU), white clover (*Trifolium repens*, FACU), red clover (*Trifolium pratense*, FACU), bird's foot trefoil (*Lotus corniculatus*, FACU), orchard grass (*Dactylis glomorata*, FACU), reed canary grass (*Phalaris arundinacea*, FACW), Queen Anne's lace (*Daucus carota*, FACU), great plantain (*Plantago major*, FACU), and common dandelion (*Taraxacum officinale*, FACU) in the herbaceous layer.

The open field community is represented by Sample Plots 25 and 32. Dominant herbaceous species within this community include Kentucky bluegrass, orchard grass, oldfield cinquefoil (*Potentilla simplex*, FACU), tall goldenrod (*Solidago altissima*, FACU), Canadian horseweed (*Conyza canadensis*, FACU), common yarrow (*Achillea millefolium*, FAC), flat-top goldenrod (*Euthamia graminifolia*, FAC), rough-leaf goldenrod (*Solidago rugosa*, FAC), eastern daisy fleabane (*Erigeron annuus*, FACU), Canada goldenrod (*Solidago canadensis*, FACU), and common evening primrose (*Oenothera biennis*, FACU).

The old field community is represented by Sample Plot 21. This community consists of similar herbaceous species as the open field community, but has a higher percentage of woody shrub species including Allegheny blackberry (*Rubus allegheniensis*, FACU), rambler rose (*Rosa multiflora*, FACU), and glossy buckthorn (*Frangula alnus*, FAC).

The forested vegetative community is represented by Sample Plots 5, 10, 18, 22, and 30. Typical tree species include pin oak (*Quercus palustris*, FACW), sugar maple (*Acer saccharum*, FACU), red maple (*Acer rubrum*, FAC), black cherry (*Prunus serotina*, FACU), American elm (*Ulmus americana*, FACW), green ash (*Fraxinus americana*, FACW), crab apple (*Malus coronaria*, UPL), and bigtooth aspen (*Populus grandidentata,* FACU). The shrub layer of this community contains tree saplings, glossy buckthorn, rambler rose, Allegheny blackberry, spicebush (*Lindera benzoin*, FACW), and silky dogwood (*Cornus amomum*, FACW). Typical herbaceous plants within the forest include Pennsylvania sedge (*Carex pennsylvanica*, UPL), rough-leaf goldenrod, Christmas fern (*Polystichum acrostichoides*, FAC), Spinulose wood fern (*Dryopteris carthusiana*, FACW), upright wood sorrel (*Oxalis stricta*, FACU), jumpseed (*Persicaria virginiana*, FAC), cream avens (*Geum virginianum*, FACU), woodland strawberry (*Fragaria vesca*, UPL), and common selfheal. The woody vine layer of the forest community is dominated by eastern poison ivy (*Toxicodendron radicans*, FAC).

## 4.2 WETLANDS

Seventeen wetlands were identified and delineated within the Study Area. On-site wetlands are composed of PEM, PSS, and PFO vegetative communities. The delineated wetlands have been categorized using the ORAM; scoring forms are included in Appendix D. Wetland results are given in Table 8 and are briefly described in the following section. Wetland size has been determined for areas within the Study Area. Wetlands are illustrated on Figure 5 (Appendix A).

**Table 8. Wetland Results within the Study Area**

| Wetland | | Photo* | Cowardin Classification | ORAM Score | ORAM Category | Size within Study Area (acres) |
|---|---|---|---|---|---|---|
| W-1 | a | 35-37 | PEM | 52 | 2 | 1.819 |
| | | | PSS | | | 2.833 |
| | | | PFO | | | 13.871 |
| | b | | PFO | | | 0.123 |
| W-2 | | 38 | PFO | 52 | 2 | 0.157 |
| W-3 | | 39 | PFO | 39 | Modified 2 | 0.272 |
| W-4 | | 40 | PFO | 39 | Modified 2 | 1.951 |
| W-5 | | 41 | PFO | 52 | 2 | 0.064 |

| Wetland | Photo* | Cowardin Classification | ORAM Score | ORAM Category | Size within Study Area (acres) |
|---|---|---|---|---|---|
| W-6 | 42 | PFO | 35 | Modified 2 | 0.064 |
| W-7 | 43-44 | PEM | 44 | Modified 2 | 3.310 |
| | | PSS | | | 2.386 |
| | | PFO | | | 7.152 |
| W-8 | 45 | PEM | 44 | Modified 2 | 0.029 |
| | | PFO | | | 0.189 |
| W-9 | 46 | PFO | 52 | 2 | 0.073 |
| W-10 | 47 | PSS | 21.5 | 1 | 0.107 |
| W-11 | 48 | PEM | 36 | Modified 2 | 0.023 |
| W-12 | 49 | PEM | 36 | Modified 2 | 0.032 |
| W-13 | 50-51 | PEM | 36 | Modified 2 | 0.081 |
| | | PFO | | | 0.729 |
| W-14 | 52 | PEM | 36 | Modified 2 | 0.013 |
| W-15 | 53 | PFO | 35.5 | Modified 2 | 0.049 |
| W-16 | 54 | PFO | 35.5 | Modified 2 | 0.012 |
| W-17 | 55 | PFO | 35.5 | Modified 2 | 0.023 |
| **Total Wetland** | | | | | **35.362** |

*photos are located in Appendix B

All of Wetlands W-2, W-3, W-4, W-5, W-6, W-9, W-15, W-16, W-17, and a portion of Wetlands W-1, W-7, W-8, and W-13 are dominated by PFO vegetation. On-site PFO wetlands are represented by Sample Plots 3, 4, 6, 9, 11, 12, 13, 16, 17, 19, 23, 29, 31, and 34. Typical trees within the PFO community include red maple, American elm, green ash, pin oak, hawthorn, and silver maple (*Acer saccharinum*, FACW). The shrub layer is comprised of young trees, rambler rose, gray dogwood (*Cornus racemosa*, FAC), glossy buckthorn, and spicebush. The herbaceous layer contains tree and shrub seedlings, common fox sedge (*Carex vulpinoidea*, OBL), lamp rush (*Juncus effusus*, OBL), fowl manna grass (*Glyceria striata*, OBL), rice cut grass (*Leersia oryzoides,* OBL), reed canary grass, farewell summer (*Symphyotrichum lateriflorum*, FACW), white avens (*Geum canadense*, FAC), Spinulose wood fern, harvestlice (*Agrimonia parviflora*, FAC), white grass (*Leersia virginica*, FACW), sensitive fern (*Onoclea sensibilis*, FACW), cream avens, rough-leaf goldenrod, green bulrush (*Scirpus atrovirens*, OBL), spotted touch-me-not (*Impatiens capensis*, FACW), and jumpseed. The vine layer contains eastern poison ivy.

All of Wetland W-10 and portions of Wetlands W-1 and W-7 are dominated by PSS vegetation. On-site PSS wetlands are represented by Sample Plots 2, 8, 24, and 33. Typical shrub species within the on-site PSS wetlands include gray dogwood, spicebush, false glossy buckthorn, and pin oak saplings. Herbaceous vegetation within this

community includes rice cut grass, cardinal flower (*Lobelia cardinalis*, OBL), reed canary grass, arrow leaf tearthumb (*Persicaria sagittata*, OBL), spotted touch-me-not, fowl manna grass, and eastern poison ivy.

All of Wetlands W-11, W-12, W-14, and portions of Wetlands W-1, W-7, W-8, and W-13 are dominated by PEM vegetation. On-site PEM wetlands are represented by Sample Plots 7, 14, 15, 20, 26, 27, and 28. Herbaceous species within on-site PEM wetlands include reed canary grass, broom sedge (*Carex scoparia*, FACW), hop sedge (*Carex lupulina*, OBL), squarrose sedge (*Carex squarrosa*, OBL), cottongrass bulrush (*Scirpus cyperinus*, OBL), flat-top goldenrod, pin oak seedlings, panic grass (*Panicum* sp., NI), poverty rush (*Juncus tenuis*, FAC), lamp rush, rice cut grass, and false glossy buckthorn seedlings.

**Wetland W-1** is a large riparian wetland complex that is associated with Mud Creek, a perennial stream. This wetland is largely comprised of PFO vegetation, but also contains portions of PSS and PEM wetland. Wetland W-1 has several ephemeral and intermittent stream channels that provide hydrology. **Wetland W-2**, a PFO wetland, is hydrologically connected to Wetland W-1 by way of Stream S-3. **Wetland W-5**, a PFO wetland, is connected by sheet flow to Stream S-2, which flows into Wetland W-1. **Wetland W-9**, a PFO wetland, is located within the floodplain near Wetland W-1. Due to their proximity, similar plant communities, and hydrologic connection, these wetlands were scored together using the ORAM scoring method. These wetlands fell within the range for Category 2 wetlands due to large size, medium buffers, moderately high interspersion, and moderate amount of microtopographic features. Invasive species, including glossy buckthorn and reed canary grass, are present in extensive amounts.

**Wetlands W-3** and **W-4** are both PFO wetlands that are located east of the Mud Creek complex. These wetlands are close in proximity and have a similar plant community and were scored together using the ORAM scoring method. These wetlands scored within the range for Modified Category 2 wetlands. Both wetlands were likely formed due to past farming activities as evidenced by the presence of remnant furrows. These wetlands have medium buffers and low surrounding land use. Modifications are primarily due to past farming and filling. The invasive glossy buckthorn is present in moderate amounts in both wetlands.

**Wetland W-6** is a PFO wetland located on the south side of Stream S-1. This wetland is within the range for a Modified Category 2 wetland. This wetland has modifications due to the dredging of Stream S-1. This wetland has a sparse amount of the invasive glossy buckthorn.

**Wetlands W-7** and **W-8** are artificially separated by a narrow driveway and were scored together. These wetlands assessed as Modified Category 2 wetlands using the ORAM scoring method. These wetlands have modifications due to road and driveway filling/grading, ATV trails, easement construction, mowing, and dredging. Wetland W-7 has a mix of PEM, PSS, and PFO vegetative communities and is located partially within the cleared transmission easement. Wetland W-8 is dominated by PFO vegetation with a small section of PEM along Hallock Young Road. Invasive species, including glossy buckthorn and reed canary grass are present at a moderate level within these wetlands.

**Wetland W-10** is a PSS wetland located within the transmission easement. Due to the easement, this wetland has narrow buffers and moderately high surrounding land use. Impacts due to herbicide application, mowing, clear cutting, ATV activity, and filling are evident within this wetland. This wetland assessed within the range for a Category 1 wetland.

**Wetland W-13** has PFO and PEM communities and is partially located within the transmission easement. **Wetlands W-11**, **W-12**, and **W-14** are PEM wetlands located entirely within the transmission easement and are hydrologically connected to Wetland W-13. Therefore, these wetlands were scored together and assessed within the range for Modified Category 2 wetlands. Impacts due to herbicide application, mowing, clear cutting, ATV activity, and filling are evident within these wetlands. These wetlands have a moderate coverage of invasive species cover.

**Wetlands W-15** and **W-16** are both PFO wetlands located within the northeast corner of the Study Area. These wetlands were scored together and assessed within the range for Modified Category 2 wetlands. These wetlands have modifications due to ATV usage, filling, and selective cutting. Invasive species coverage is sparse within these wetlands.

**Wetland W-17** is located south of Wetland W-13 and has a PFO vegetative cover. This wetland has medium buffers and low surrounding land use. Observed modifications are due to ATV usage, minor filling, and selective cutting. The invasive glossy buckthorn is present in this wetland in sparse amounts.

### 4.3 STREAMS AND RIVERS

One perennial stream, one intermittent stream, and three ephemeral streams were identified and delineated within the Study Area. The results are depicted in Table 9 and illustrated on Figure 5 (Appendix A). Ephemeral and intermittent streams have been assessed using the HHEI and the perennial stream was assessed using the QHEI; the scoring forms are included in Appendix E. Each stream classification, based on the QHEI

or HHEI score, is located in Table 9. Locations of these streams are depicted in Appendix A, Figure 5 and representative photographs are included in Appendix B.

**Table 9. Stream Results within the Study Area**

| Stream | Photos* | Type | Average Bankfull Width (feet) | Average Depth at Time of Survey (inch) | Length Within Study Area (linear feet) | Area Within Study Area (acres) | QHEI/ HHEI Score |
|---|---|---|---|---|---|---|---|
| Mud Creek | 56-57 | Perennial | 12 | 12 | 3,803 | 1.048 | 52.75 |
| S-1 | 58-59 | Ephemeral | 4 | 0 | 648 | 0.060 | 22 |
| S-2 | 60-61 | Ephemeral | 1.5 | 0 | 44 | 0.002 | 23 |
| S-3 | 62-63 | Ephemeral | 1.5 | 0 | 59 | 0.002 | 25 |
| S-4 | 64-65 | Intermittent | 2 | 0 | 175 | 0.008 | 18 |
| **Total Stream** | | | | | **4,729** | **1.120** | |

*photos are located in Appendix B

**Mud Creek** originates within the Study Area from a culvert under Hallock Young Road. Mud Creek is flowing north through the Study Area and draining east into Meander Creek Reservoir. The assessment of the on-site portion of Mud Creek resulted in a QHEI score of 52.75, classifying it as a Warmwater Habitat Aquatic Life Use Potential and 'Fair' using the narrative rating. A white heelsplitter mussel (*Lasmigona complanata*) was identified on-site within Mud Creek. Additionally, beaver activity was observed along the southern reach of the stream.

**Stream S-1** is an ephemeral stream that appears to be either man-made or channelized. Stream S-1 originates in Wetland W-7 and flows west into Mud Creek. This stream assessed within the range for a Modified Class I Primary Headwater Habitat (PHWH) stream using the HHEI.

**Stream S-2** is an ephemeral stream that is conveying sheet flow west into Mud Creek. This stream assessed as a Class I PHWH stream.

**Stream S-3** is an ephemeral stream that connects Wetland W-2 to Wetland W-1, which is located along the banks of Mud Creek. Stream S-3 assessed within the range for a Class I PHWH stream.

**Stream S-4** is located within Wetland W-1 and is conveying water east towards Mud Creek. This stream assessed as a Class I PHWH stream.

### 4.4 PONDS AND LAKES

No open water aquatic resources were identified within the Study Area.

## 5.0 ASSUMPTIONS AND DISCLAIMERS

The constant influence of human activity on the Study Area can result in a rapid change of ecological boundaries. Over time, natural succession and changes in hydrology can also affect their boundaries. Precision of GPS collected data is subject to variation caused by canopy cover, atmospheric interference and satellite configuration. Because slight inaccuracies are possible, all acreages and derived boundaries presented in this report are approximate.

The results and conclusions contained in this report apply to the year and date in which the data were collected. This report is not considered officially valid until it is approved by the USACE. The report is then valid for a period of five years. Refer to the USACE's Regulatory Guidance Letter # 94-1 (23 May 1994).

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# Appendix A:

# Figures

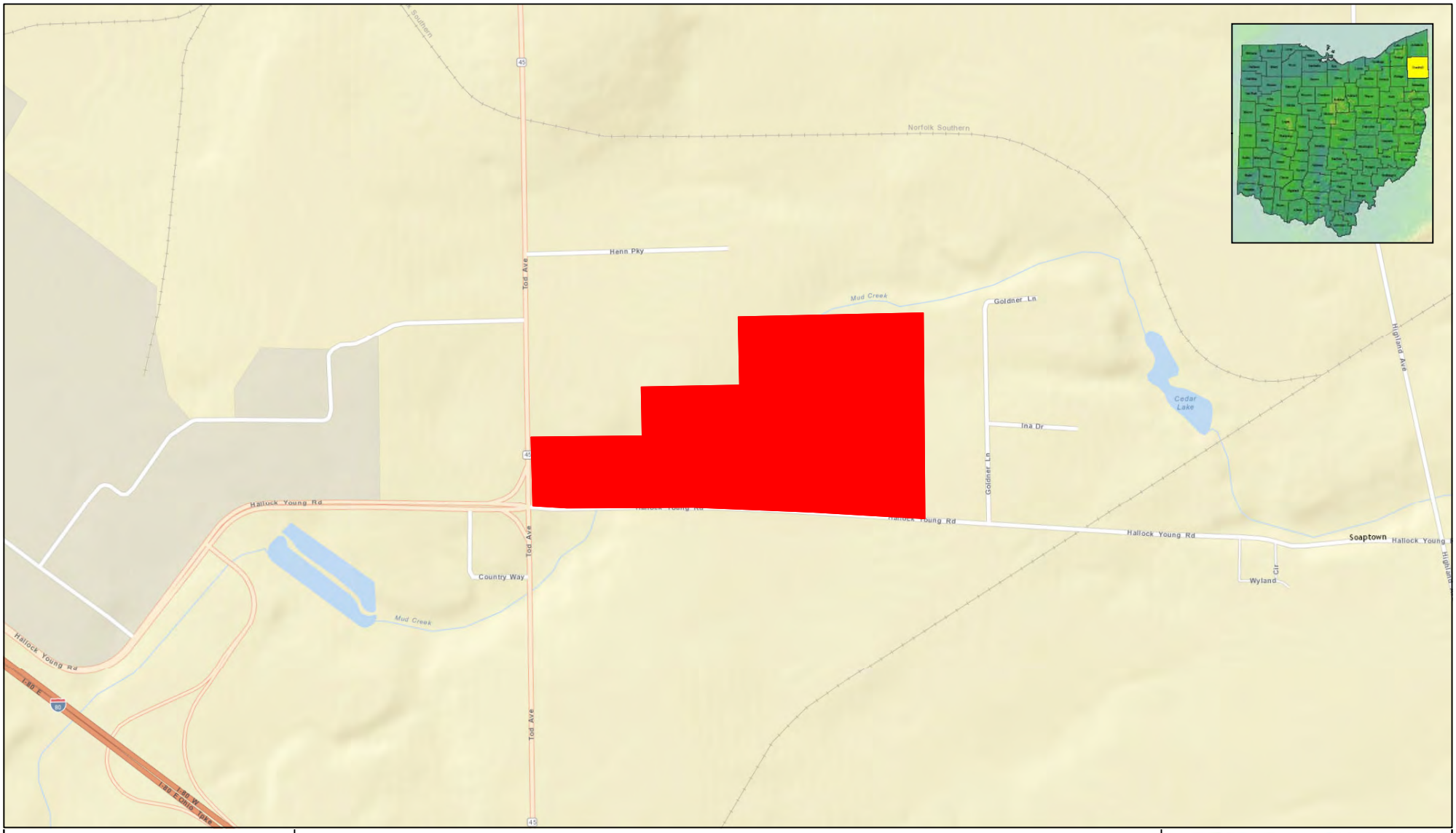


Figure 1. Location of Site on Highway Map of Trumbull County, Ohio. TetraTech - Lordstown.

Project Area

0 750 1,500 3,000 Feet

0 250 500 1,000 Meters

EnviroScience
Excellence In Any Environment

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Basemap courtesy of Esri.

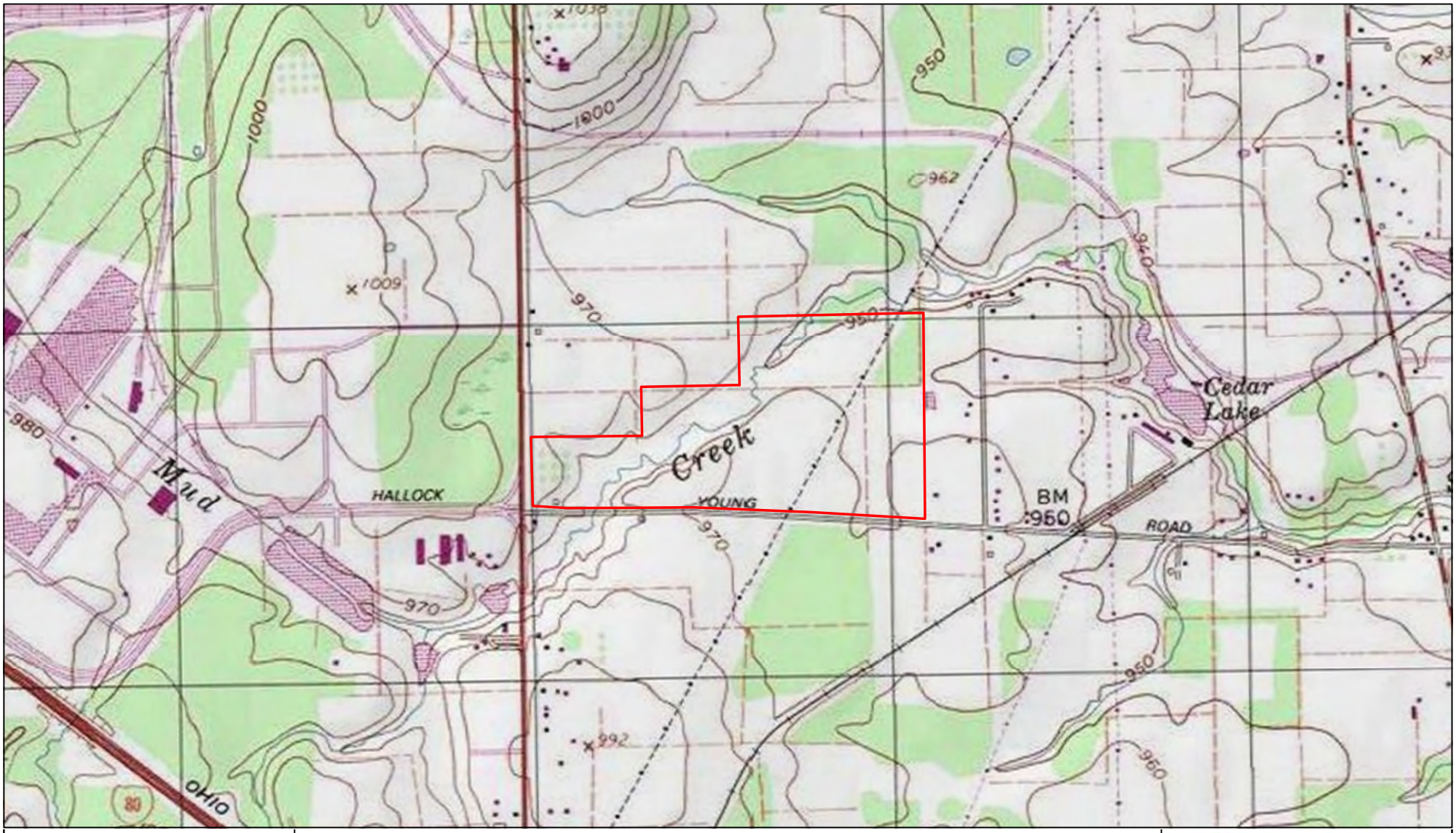


Figure 2. USGS 7.5-minute Topographic Map of Warren Quadrangle. TetraTech - Lordstown.

Project Area

0 750 1,500 3,000 Feet

0 250 500 1,000 Meters

EnviroScience
Excellence In Any Environment

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Date: 9/9/2016

Basemap courtesy of National Geographic Society (2013).

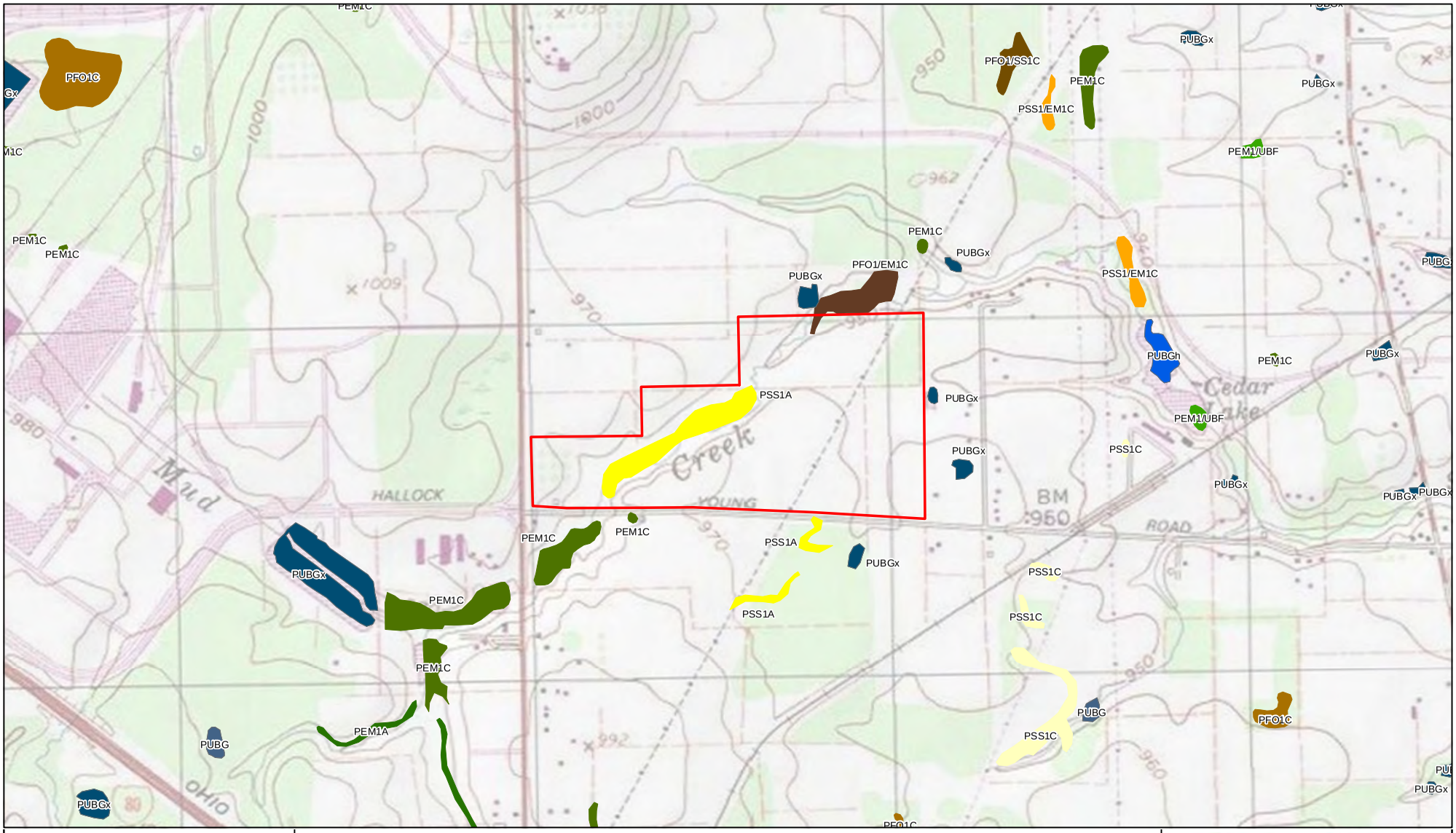


Figure 3.
NWI Map of Site (Warren Quadrangle).
TetraTech - Lordstown.

Project Area

0 750 1,500 3,000 Feet

0 250 500 1,000 Meters

EnviroScience
Excellence In Any Environment

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Date: 9/9/2016

Basemap courtesy of National Geographic Society (2013). NWI data courtesy of USFWS (current as of June 1, 2016).

Figure 4.
Soil Map of Site in Trumbull County, Ohio.
TetraTech - Lordstown.

Project Area

0 750 1,500 3,000 Feet

0 250 500 1,000 Meters

EnviroScience
Excellence In Any Environment

Path: P:\10_Projects\TTTetraTech\470NR\8940_Lordstown\GIS_LordstownEasternSect\Map4_Soil.mxd

Date: 9/9/2016

Basemap courtesy of Esri. Soil data courtesy of SSURGO.

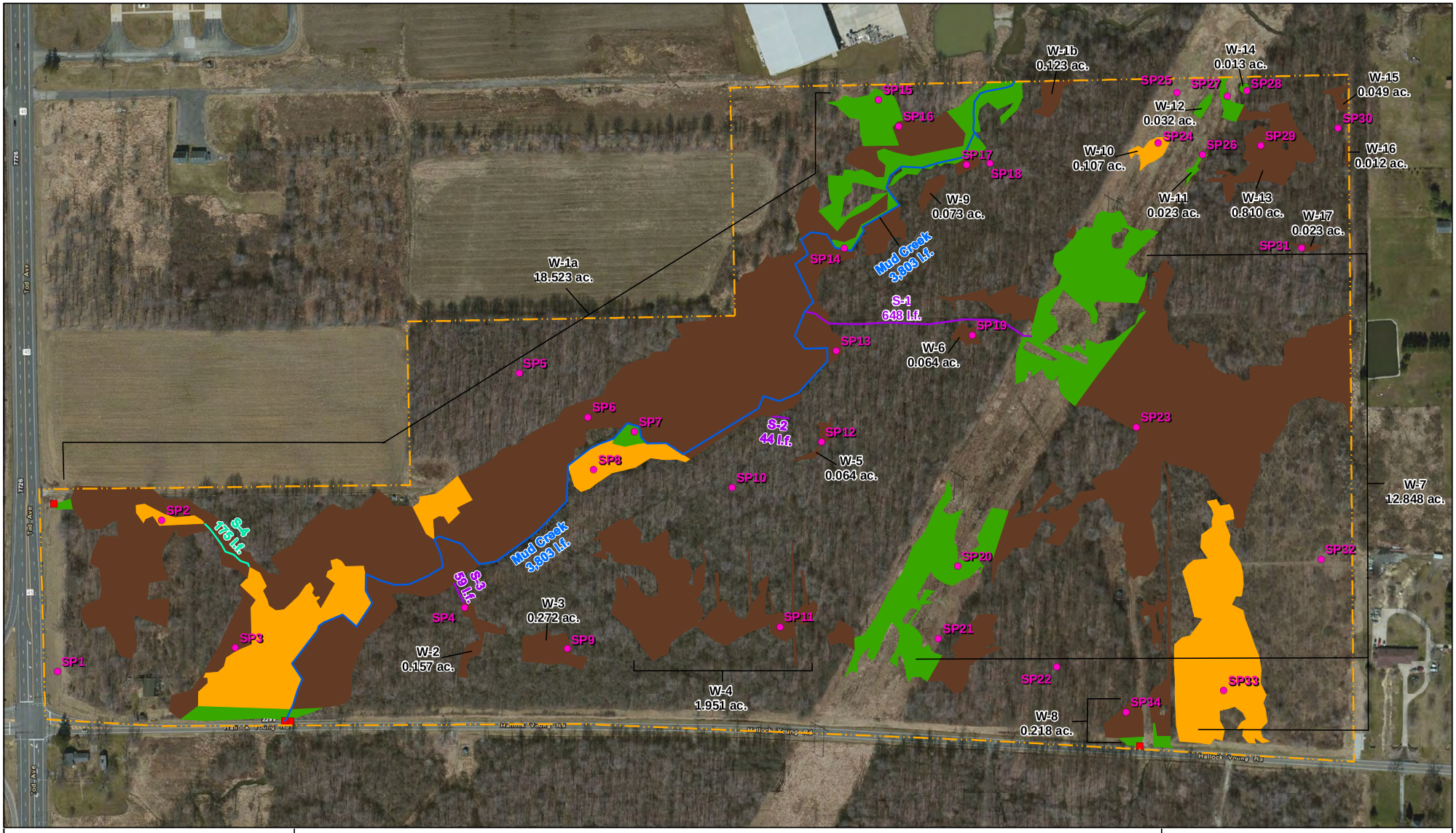


Figure 5. Site Map of
Wetlands and Other Water Resources.
TetraTech - Lordstown.

Sample Plot
Culvert
Project Area
Stream (Ephemeral)
Stream (Intermittent)
Stream (Perennial)
Wetland (PEM)
Wetland (PFO)
Wetland (PSS)

0 250 500 1,000 Feet
0 75 150 300 Meters

EnviroScience
Excellence In Any Environment

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Date: 12/10/2016

Basemap courtesy of Esri.

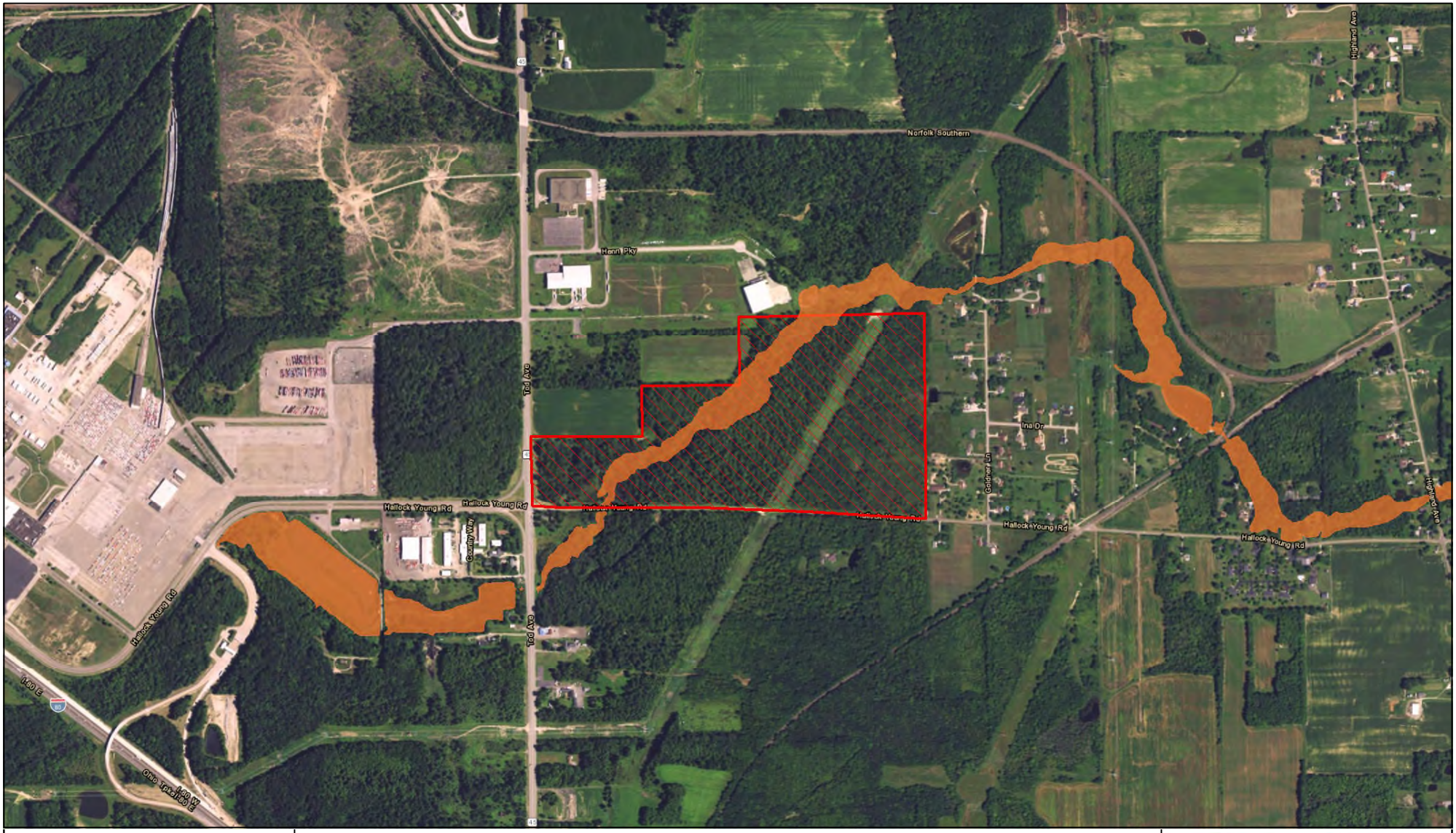


Figure 6.
FEMA Map of Site in Trumbull County, Ohio.
TetraTech - Lordstown.

100-Year Flood Zone
Project Area

0 750 1,500 3,000 Feet
0 250 500 1,000 Meters

EnviroScience
Excellence In Any Environment

Basemap courtesy of Esri. Flood data courtesy of FEMA.

Date: 9/9/2016 Path: P:\10_Projects\TTTetraTech\470NR\8940_Lordstown\GIS_Lordstown\EasternSect\Map6_FEMA.mxd

# Appendix B:

# Photographs

Photo 1. Sample Plot 1 representing mowed field.

Photo 2. Sample Plot 2 within a PSS portion of Wetland W-1a.

Photo 3. Sample Plot 3 within a PFO portion of Wetland W-1a.

Photo 4. Sample Plot 4 within Wetland W-2.

Photo 5. Sample Plot 5 representing a forest community.

Photo 6. Sample Plot 6 within a PFO portion of Wetland W-1a.

Photo 7. Sample Plot 7 within a PEM portion of a Wetland W-1a

Photo 8. Sample Plot 8 within a PSS portion of Wetland W-1a.

Photo 9. Sample Plot 9 within Wetland W-3.

Photo 10. Sample Plot 10 representing a forest community.

Photo 11. Sample Plot 11 in Wetland W-4.

Photo 12. Sample Plot 12 within Wetland W-5.

Photo 13. Sample Plot 13 within a PFO portion of Wetland W-1a.

Photo 14. Sample Plot 14 within a PEM portion of Wetland W-1a.

Photo 15. Sample Plot 15 within a PEM portion of Wetland W-1a.

Photo 16. Sample Plot 16 within a PFO portion of Wetland W-1a.

Photo 17. Sample Plot 17 within a PFO portion of Wetland W-1a.

Photo 18. Sample Plot 18 representing a forest community.

Photo 19. Sample Plot 19 in Wetland W-6.

Photo 20. Sample Plot 20 within a PEM portion of Wetland W-7.

Photo 21. Sample Plot 21 representing an old field community.

Photo 22. Sample Plot 22 representing a forest community.

Photo 23. Sample Plot 23 in a PFO portion of Wetland W-7.

Photo 24. Sample Plot 24 within Wetland W-10.

Photo 25. Sample Plot 25 representing an open field community.

Photo 26. Sample Plot 26 within W-11.

Photo 27. Sample Plot 27 within the PEM portion of Wetland W-13.

Photo 28. Sample Plot 28 within Wetland W-14.

Photo 29. Sample Plot 29 within the PFO portion of Wetland W-13.

Photo 30. Sample Plot 30 representing a forest community.

Photo 31. Sample Plot 31 within Wetland W-17.

Photo 32. Sample Plot 32 representing an open field community.

Photo 33. Sample Plot 33 within the PSS portion of Wetland W-7.

Photo 34. Sample Plot 34 within Wetland W-8.

Photo 35. Wetland W-1, PEM, facing northeast.

Photo 36. Wetland W-1, PSS, facing east.

Photo 37. Wetland W-1, PFO, facing east.

Photo 38. Wetland W-2 facing southeast.

Photo 39. Wetland W-3 facing west.

Photo 40. Wetland W-4 facing west.

Photo 41. Wetland W-5 facing south.

Photo 42. Wetland W-6 facing west.

Photo 43. Wetland W-7, PEM, facing west.

Photo 44. Wetland W-7, PFO, facing west.

Photo 45. Wetland W-8 facing south.

Photo 46. Wetland W-9 facing north.

Photo 47. Wetland W-10 facing northwest.

Photo 48. Wetland W-11 facing southwest.

Photo 49. Wetland W-12 facing northeast.

Photo 50. Wetland W-13, PFO, facing east.

Photo 51. Wetland W-13, PEM, facing south.

Photo 52. Wetland W-14 facing north.

Photo 53. Wetland W-15 facing north.

Photo 54. Wetland W-16 facing north.

Photo 55. Wetland W-17 facing east.

Photo 56. Mud Creek facing south, upstream.

Photo 57. Mud Creek facing north, downstream.

Photo 58. Stream S-1 facing east, upstream.

Photo 59. Stream S-1 facing west, downstream.

Photo 60. Stream S-2 facing east, upstream.

Photo 61. Stream S-2 facing west, downstream.

Photo 62. Stream S-3 facing southeast, upstream.

Photo 63. Stream S-3 facing northwest, downstream.

Photo 64. Stream S-4 facing northwest, upstream.

Photo 65. Stream S-4 facing southeast, downstream.

# Appendix C:

# Routine Wetland Determination Data Forms

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 23 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-1

Investigator(s): A. Gilmore, R. Warren; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): non Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.143973 Long: -80.85868 Datum: WGS 84

Soil Map Unit Name: WbB - Wadsworth silt loam, 2 to 6 percent slopes NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes _____ | No X | **Is the Sampled Area within a Wetland?** **Yes** _____ **No** X |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: _____ |
| Wetland Hydrology Present? | Yes _____ | No X | |

Remarks: (Explain alternative procedures here or in a separate report.)
Mowed open field.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ 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? (includes capillary fringe) | 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:
No hydrology observed.

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-1

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Dactylis glomerata* | 70 | Yes | FACU |
| 2. *Lotus corniculatus* | 20 | Yes | FACU |
| 3. *Taraxacum officinale* | 5 | No | FACU |
| 4. *Trifolium pratense* | 5 | No | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =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: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 100 | x 4 = | 400 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 400 (B) |

Prevalence Index = B/A = 4.00

**Hydrophytic Vegetation Indicators:**

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

____ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-1

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 4/2 | 85 | 10YR 5/6 | 10 | C | M | Loamy/Clayey | Prominent redox concentrations |
| | | | 2.5YR 3/2 | 5 | | | | silty loam with gravel |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

# WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 23 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-2

Investigator(s): A. Gilmore, R. Warren; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.145103 Long: -80.855789 Datum: WGS 84

Soil Map Unit Name: WbB - Wadsworth silt loam, 2 to 6 percent slopes NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-1. |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PSS in W-1.

## HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- x Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-2

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. *Cornus racemosa* | 45 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 45 | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Leersia oryzoides* | 30 | Yes | OBL |
| 2. *Lobelia cardinalis* | 20 | Yes | OBL |
| 3. *Cornus racemosa* | 20 | Yes | FAC |
| 4. *Phalaris arundinacea* | 15 | No | FACW |
| 5. *Persicaria sagittata* | 15 | No | OBL |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| 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
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-2

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR 4/1 | 98 | 10YR 5/6 | 2 | C | PL | Loamy/Clayey | Prominent redox concentrations |
| 4-16 | 2.5Y 5/1 | 75 | 7.5YR 5/6 | 25 | C | M | Loamy/Clayey | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 23 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-3

Investigator(s): A. Gilmore, R. Warren; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.144128 Long: -80.855077 Datum: WGS 84

Soil Map Unit Name: Ho - Hlly silt loam, frequently flooded NWI classification: PSS1A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-1. |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO in W-1.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- x Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- x Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-3

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Acer rubrum* | 55 | Yes | FAC |
| 2. *Ulmus americana* | 20 | Yes | FACW |
| 3. *Fraxinus pennsylvanica* | 10 | No | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 85 | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. *Rosa multiflora* | 25 | Yes | FACU |
| 2. *Cornus racemosa* | 15 | Yes | FAC |
| 3. *Fraxinus pennsylvanica* | 10 | No | FACW |
| 4. *Frangula alnus* | 10 | No | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 60 | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Glyceria striata* | 20 | Yes | OBL |
| 2. *Onoclea sensibilis* | 20 | Yes | FACW |
| 3. *Impatiens capensis* | 15 | Yes | FACW |
| 4. *Solidago gigantea* | 15 | Yes | FACW |
| 5. *Geum canadense* | 10 | No | FAC |
| 6. *Solidago rugosa* | 10 | No | FAC |
| 7. *Agrimonia parviflora* | 10 | No | FAC |
| 8. *Juncus effusus* | 5 | No | OBL |
| 9. *Symphyotrichum prenanthoides* | 5 | No | FAC |
| 10. *Scirpus atrovirens* | 5 | No | OBL |
| 11. | | | |
| 12. | | | |
| | 115 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. *Parthenocissus quinquefolia* | 10 | Yes | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 77.8% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: |
|---|---|
| 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
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-3

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 4/1 | 90 | 7.5YR 5/8 | 10 | C | PL/M | Loamy/Clayey | Prominent redox concentrations |
| 10-16 | 2.5Y 5/2 | 85 | 7.5YR 5/8 | 15 | C | M | Loamy/Clayey | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 24 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-4

Investigator(s): L. Sayre; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.144401 Long: -80.852771 Datum: WGS 84

Soil Map Unit Name: Wadsworth silt loam, 2 to 6 percent slopes (WbB) NWI classification: PSS1A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-2 |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- X Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-4

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Acer rubrum* | 25 | Yes | FAC |
| 2. *Ulmus americana* | 20 | Yes | FACW |
| 3. *Quercus palustris* | 15 | Yes | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 60 | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. *Ulmus americana* | 10 | Yes | FACW |
| 2. *Cornus racemosa* | 8 | Yes | FAC |
| 3. *Fraxinus pennsylvanica* | 5 | No | FACW |
| 4. *Rosa multiflora* | 5 | No | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 28 | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Persicaria virginiana* | 5 | Yes | FAC |
| 2. *Toxicodendron radicans* | 5 | Yes | FAC |
| 3. *Glyceria striata* | 3 | No | OBL |
| 4. *Potentilla simplex* | 3 | No | FACU |
| 5. *Geum canadense* | 2 | No | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 18 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| 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

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-4

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 4/2 | 80 | 10YR 4/6 | 20 | C | M | Loamy/Clayey | Prominent redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 23 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-5

Investigator(s): A. Gilmore; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): non Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.146167 Long: -80.852179 Datum: WGS 84

Soil Map Unit Name: RsC - Rittman silt loam, 6 to 12 percent slopes NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** _____ **No** X |
| Hydric Soil Present? | Yes _____ | No X | If yes, optional Wetland Site ID: _____ |
| Wetland Hydrology Present? | Yes _____ | No X | |

Remarks: (Explain alternative procedures here or in a separate report.)
Forest.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ 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? (includes capillary fringe) | 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:
No hydrology observed.

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-5

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Acer rubrum* | 65 | Yes | FAC |
| 2. *Malus sp.* | 10 | No | NI |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 75 | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. *Frangula alnus* | 30 | Yes | FAC |
| 2. *Rosa multiflora* | 5 | No | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 35 | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Persicaria virginiana* | 20 | Yes | FAC |
| 2. *Cornus racemosa* | 15 | Yes | FAC |
| 3. *Geum virginianum* | 5 | No | FACU |
| 4. *Rubus allegheniensis* | 5 | No | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 45 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 130 | x 3 = | 390 |
| FACU species | 15 | x 4 = | 60 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 145 (A) | | 450 (B) |

Prevalence Index = B/A = 3.10

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-5

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-10 | 10YR 5/3 | 100 | | | | | Loamy/Clayey | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 24 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-6

Investigator(s): L. Sayre; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.145824 Long: -80.851498 Datum: WGS 84

Soil Map Unit Name: Holly silt loam, frequently flooded (Ho) NWI classification: PSS1A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-1a |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

- X Surface Water (A1)
- X High Water Table (A2)
- X 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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes X | No _____ | Depth (inches): 1 |
| Water Table Present? | Yes X | No _____ | Depth (inches): 0 |
| Saturation Present? (includes capillary fringe) | Yes X | No _____ | Depth (inches): 0 |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-6

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Acer rubrum* | 30 | Yes | FAC |
| 2. *Ulmus americana* | 15 | Yes | FACW |
| 3. *Fraxinus pennsylvanica* | 10 | No | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 55 | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. *Frangula alnus* | 30 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 30 | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Impatiens capensis* | 40 | Yes | FACW |
| 2. *Toxicodendron radicans* | 20 | Yes | FAC |
| 3. *Glyceria striata* | 10 | No | OBL |
| 4. *Carex sp.* | 5 | No | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 75 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: |
|---|---|
| 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

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-6

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 4/2 | 98 | 7.5YR 4/6 | 2 | C | M | Loamy/Clayey | Prominent redox concentrations |
| 3-10 | 10YR 5/1 | 55 | 10YR 4/2 | 45 | C | M | Loamy/Clayey | |
| 10-12 | 10YR 5/4 | 60 | 10YR 6/2 | 40 | C | M | Loamy/Clayey | Distinct redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 26 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-7

Investigator(s): A. Gilmore; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.145706 Long: -80.851035 Datum: WGS 84

Soil Map Unit Name: Ho - Holly silt loam NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-1 |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PEM on RDB of Mud Creek.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-7

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. *Fraxinus pennsylvanica* | 8 | Yes | FACW |
| 2. *Cephalanthus occidentalis* | 5 | Yes | OBL |
| 3. *Cornus amomum* | 5 | Yes | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 18 | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Phalaris arundinacea* | 35 | Yes | FACW |
| 2. *Urtica dioica* | 20 | Yes | FAC |
| 3. *Impatiens capensis* | 20 | Yes | FACW |
| 4. *Mentha arvensis* | 15 | No | FACW |
| 5. *Lysimachia nummularia* | 15 | No | FACW |
| 6. *Persicaria sagittata* | 10 | No | OBL |
| 7. *Vernonia noveboracensis* | 5 | No | FACW |
| 8. *Cirsium arvense* | 5 | No | FACU |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 125 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. *Vitis riparia* | 20 | Yes | FAC |
| 2. *Parthenocissus quinquefolia* | 10 | Yes | FACU |
| 3. | | | |
| 4. | | | |
| | 30 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| 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

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-7

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 10YR 4/1 | 90 | 7.5YR 4/6 | 10 | C | PL | Loamy/Clayey | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 24 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-8

Investigator(s): L. Sayre; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.145427 Long: -80.851449 Datum: WGS 84

Soil Map Unit Name: Holly silt loam, frequently flooded (Ho) NWI classification: PSS1A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-1a |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PSS

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

- X Surface Water (A1)
- X High Water Table (A2)
- X 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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes X | No _____ | Depth (inches): 2 |
| Water Table Present? | Yes X | No _____ | Depth (inches): 0 |
| Saturation Present? (includes capillary fringe) | Yes X | No _____ | Depth (inches): 0 |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-8

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. *Cornus racemosa* | 50 | Yes | FAC |
| 2. *Lindera benzoin* | 20 | Yes | FACW |
| 3. *Rubus allegheniensis* | 15 | No | FACU |
| 4. *Frangula alnus* | 10 | No | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 95 | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Impatiens capensis* | 65 | Yes | FACW |
| 2. *Lysimachia nummularia* | 14 | No | FACW |
| 3. *Carex vulpinoidea* | 10 | No | OBL |
| 4. *Glyceria striata* | 5 | No | OBL |
| 5. *Agrimonia parviflora* | 3 | No | FAC |
| 6. *Urtica dioica* | 3 | No | FAC |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| 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
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-8

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 5/2 | 75 | 10YR 5/6 | 20 | C | M | Loamy/Clayey | Prominent redox concentrations |
| | | | N 6/ | 5 | C | M | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 23 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-9

Investigator(s): A. Gilmore; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.144075 Long: -80.851748 Datum: WGS 84

Soil Map Unit Name: WbB- Wadsworth silt loam, 2 to 6 percent slopes NWI classification: PSS1A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-3. |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO in W-3. Sample Plot was originally delineated in June 23, 2015 and revisited and verified Aug 23, 2016.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X 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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes X | No _____ | Depth (inches): 6" |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:
Standing water about 0.25" recent precipitaiton.

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-9

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Acer rubrum* | 60 | Yes | FAC |
| 2. *Crateagus sp.* | 30 | Yes | NI |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 90 | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. *Ulmus americana* | 30 | Yes | FACW |
| 2. *Cornus racemosa* | 20 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 50 | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Fraxinus pennsylvanica* | 25 | Yes | FACW |
| 2. *Glyceria striata* | 20 | Yes | OBL |
| 3. *Impatiens capensis* | 20 | Yes | FACW |
| 4. *Toxicodendron radicans* | 5 | No | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 70 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. *Parthenocissus quinquefolia* | 10 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: |
|---|---|
| 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
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-9

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 5/2 | 100 | | | | | Loamy/Clayey | silty clay |
| 3-16 | 2.5Y 5/1 | 60 | 2.5Y 5/2 | 40 | D | M | Loamy/Clayey | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 26 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-10

Investigator(s): A. Gilmore; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): hilltop Local relief (concave, convex, none): convex Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.14527 Long: -80.850065 Datum: WGS 84

Soil Map Unit Name: WbB - Wadsworth silt loam, 2 to 6 percent slopes NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** _____ **No** X |
| Hydric Soil Present? | Yes _____ | No X | If yes, optional Wetland Site ID: _____ |
| Wetland Hydrology Present? | Yes _____ | No X | |

Remarks: (Explain alternative procedures here or in a separate report.)
Forest.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | 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:
No hydrology observed.

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-10

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Acer rubrum* | 40 | Yes | FAC |
| 2. *Ulmus americana* | 20 | Yes | FACW |
| 3. *Fraxinus pennsylvanica* | 10 | No | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 70 | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. *Acer rubrum* | 30 | Yes | FAC |
| 2. *Lindera benzoin* | 15 | Yes | FACW |
| 3. *Rosa multiflora* | 10 | No | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 55 | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Carex pensylvanica* | 25 | Yes | UPL |
| 2. *Fraxinus pennsylvanica* | 10 | Yes | FACW |
| 3. *Syphyotrichum sp.* | 5 | No | NI |
| 4. *Fragaria vesca* | 2 | No | UPL |
| 5. *Geum virginianum* | 2 | No | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 44 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. *Parthenocissus quinquefolia* | 20 | Yes | FACU |
| 2. *Toxicodendron radicans* | 10 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| | 30 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 55 | x 2 = | 110 |
| FAC species | 80 | x 3 = | 240 |
| FACU species | 32 | x 4 = | 128 |
| UPL species | 27 | x 5 = | 135 |
| Column Totals: | 194 (A) | | 613 (B) |

Prevalence Index = B/A = 3.16

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-10

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR 4/2 | 100 | | | | | Loamy/Clayey | silt loam |
| 4-8 | 10YR 5/2 | 90 | 10YR 5/6 | | | | Loamy/Clayey | silt loam with rocks |
| 8-12 | 10YR 6/3 | 100 | | | | | Loamy/Clayey | silt loam |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 24 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-11

Investigator(s): L. Sayre; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.144207 Long: -80.849613 Datum: WGS 84

Soil Map Unit Name: Wadsworth silt loam, 0 to 2 percent slopes (WbA) NWI classification: none

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-4 |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ 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? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-11

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Acer rubrum* | 40 | Yes | FAC |
| 2. *Quercus palustris* | 30 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 70 | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. *Frangula alnus* | 25 | Yes | FAC |
| 2. *Ulmus americana* | 15 | Yes | FACW |
| 3. *Fraxinus pennsylvanica* | 15 | Yes | FACW |
| 4. *Rosa multiflora* | 5 | No | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 60 | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Solidago rugosa* | 20 | Yes | FAC |
| 2. *Toxicodendron radicans* | 20 | Yes | FAC |
| 3. *Glyceria striata* | 15 | Yes | OBL |
| 4. *Geum canadense* | 5 | No | FAC |
| 5. *Quercus palustris* | 5 | No | FACW |
| 6. *Oxalis stricta* | 2 | No | FACU |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 67 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| 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

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-11

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 4/2 | 85 | 10YR 4/6 | 2 | C | M | Loamy/Clayey | Prominent redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 24 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-12

Investigator(s): L. Sayre; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.144207 Long: -80.849613 Datum: WGS 84

Soil Map Unit Name: Wadsworth silt loam, 2 to 6 percent slopes (WbB) NWI classification: none

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-5 |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ 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? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-12

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Quercus palustris* | 30 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 30 | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. *Frangula alnus* | 10 | Yes | FAC |
| 2. *Fraxinus pennsylvanica* | 5 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 15 | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Glyceria striata* | 3 | No | OBL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 3 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: |
|---|---|
| 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
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-12

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 4/1 | 85 | 10YR 4/4 | 15 | C | M | Loamy/Clayey | Distinct redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 26 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-13

Investigator(s): A. Gilmore; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.14629 Long: 80.848996 Datum: WGS 84

Soil Map Unit Name: Ho - Hlly silt loam, frequently flooded NWI classification: PSS1A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | |
| Wetland Hydrology Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-1. |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO in W-1.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-13

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Acer rubrum* | 30 | Yes | FAC |
| 2. *Ulmus americana* | 5 | No | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 35 | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. *Lindera benzoin* | 25 | Yes | FACW |
| 2. *Cornus racemosa* | 15 | Yes | FAC |
| 3. *Fraxinus pennsylvanica* | 5 | No | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 45 | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Leersia virginica* | 10 | Yes | FACW |
| 2. *Onoclea sensibilis* | 10 | Yes | FACW |
| 3. *Dryopteris carthusiana* | 10 | Yes | FACW |
| 4. *Symphyotrichum lateriflorum* | 5 | No | FAC |
| 5. *Glechoma hederacea* | 5 | No | FACU |
| 6. *Geum canadense* | 2 | No | FAC |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 42 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. *Parthenocissus quinquefolia* | 15 | Yes | FACU |
| 2. *Toxicodendron radicans* | 10 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| | 25 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 87.5% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: |
|---|---|
| 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
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-13

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 4/1 | 98 | 10YR 5/8 | 2 | C | PL/M | Loamy/Clayey | Prominent redox concentrations |
| 8-16 | 10YR 4/1 | 88 | 7.5YR 5/8 | 12 | C | M | Loamy/Clayey | " |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 26 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-14

Investigator(s): A. Gilmore; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.147067 Long: -80.8489 Datum: WGS 84

Soil Map Unit Name: Ho - Holly silt loam, frequently flooded NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-1. |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PEM in W-1, active floodplain.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X 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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes X | No _____ | Depth (inches): 10" |
| Saturation Present? (includes capillary fringe) | Yes X | No _____ | Depth (inches): 8" |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-14

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Phalaris arundinacea* | 30 | Yes | FACW |
| 2. *Impatiens capensis* | 20 | Yes | FACW |
| 3. *Persicaria sagittata* | 20 | Yes | OBL |
| 4. *Poa palustris* | 20 | Yes | FACW |
| 5. *Boehmeria cylindrica* | 10 | No | OBL |
| 6. *Urtica dioica* | 5 | No | FAC |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 105 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. *Convolvulus arvensis* | 10 | Yes | UPL |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 10 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| 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
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-14

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-1 | 10YR 4/1 | 100 | | | | | Sandy | |
| 1-5 | 10YR 4/2 | 80 | 10YR 5/8 | 20 | C | M | Sandy | |
| 5-16 | 5Y 4/1 | 70 | 5YR 4/6 | 30 | C | M | Sandy | Prominent redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ? Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown, Trumbull Sampling Date: 12/16/2015

Applicant/Owner: TetraTech State: OH Sampling Point: SP-15

Investigator(s): B. Slaby and M. Gilmore, EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression/slope Local relief (concave, convex, none): concave Slope (%): 5

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.148187 Long: -80.848528 Datum: WGS84

Soil Map Unit Name: Rittman silt loam, 2 to 6 percent slopes (RsB) NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** ____ |
| Hydric Soil Present? | Yes X | No ____ | |
| Wetland Hydrology Present? | Yes X | No ____ | If yes, optional Wetland Site ID: W-1 |

Remarks: (Explain alternative procedures here or in a separate report.)
PEM.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No X | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No X | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No X | Depth (inches): ____ |

**Wetland Hydrology Present?** **Yes** X **No** ____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-15

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Phalaris arundinacea* | 100 | Yes | FACW |
| 2. *Persicaria sagittata* | 50 | Yes | OBL |
| 3. *Rubus sp.* | 5 | No | NL |
| 4. *Cirsium arvense* | 1 | No | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 156 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 50 | x 1 = | 50 |
| FACW species | 100 | x 2 = | 200 |
| FAC species | 0 | x 3 = | 0 |
| FACU species | 1 | x 4 = | 4 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 151 (A) | | 254 (B) |

Prevalence Index = B/A = 1.68

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-15

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 3/2 | 98 | 10YR 6/8 | 2 | C | PL/M | Loamy/Clayey | Prominent redox concentrations |
| 3-10 | 2.5Y 4/2 | 92 | 10YR 5/6 | 8 | C | PL/M | Loamy/Clayey | Prominent redox concentrations |
| 10-20 | 10YR 4/1 | 85 | 2.5Y 6/3 | 10 | C | M | Loamy/Clayey | Distinct redox concentrations |
| | | | 5YR 4/6 | 5 | C | PL | | Prominent redox concentrations |
| | | | | | | | | decomposing wood at 10 inches |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown, Trumbull Sampling Date: 12/16/2015

Applicant/Owner: TetraTech State: OH Sampling Point: SP-16

Investigator(s): B. Slaby and M. Gilmore, EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression/slope Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.147983 Long: -80.848324 Datum: WGS84

Soil Map Unit Name: Holly silt loam, frequently flooded (Ho) NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: W-1 |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-16

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Fraxinus pennsylvanica* | 30 | Yes | FACW |
| 2. *Acer rubrum* | 30 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 60 | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. *Cornus amomum* | 40 | Yes | FACW |
| 2. *Frangula alnus* | 35 | Yes | FAC |
| 3. *Rosa multiflora* | 10 | No | FACU |
| 4. *Rubus allegheniensis* | 5 | No | FACU |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 90 | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Carex squarrosa* | 20 | Yes | OBL |
| 2. *Phalaris arundinacea* | 20 | Yes | FACW |
| 3. *Symphyotrichum sp.* | 5 | No | NL |
| 4. *Poaceae sp.* | 5 | No | NL |
| 5. *Rubus allegheniensis* | 2 | No | FACU |
| 6. *Toxicodendron radicans* | 2 | No | FAC |
| 7. *Achillea millefolium* | 2 | No | FACU |
| 8. *Geum canadense* | 1 | No | FAC |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 57 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. *Vitis riparia* | 5 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 5 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 20 | x 1 = | 20 |
| FACW species | 90 | x 2 = | 180 |
| FAC species | 73 | x 3 = | 219 |
| FACU species | 19 | x 4 = | 76 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 202 (A) | | 495 (B) |

Prevalence Index = B/A = 2.45

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)
Symphyotrichum sp. is probably lanceolatum.

## SOIL

Sampling Point: SP-16

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 3/2 | 100 | | | | | Loamy/Clayey | |
| 2-12 | 10YR 4/2 | 90 | 5YR 3/4 | 10 | C | PL/M | Loamy/Clayey | Prominent redox concentrations |
| 12-16 | 2.5Y 5/3 | 60 | 7.5YR 6/8 | 40 | C | PL/M | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | refusal at 16 in. (roots) |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown, Trumbull Sampling Date: 26 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-17

Investigator(s): Ann Gilmore, EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): floodplain Local relief (concave, convex, none): concave Slope (%): 5-10

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.147681 Long: -80.847653 Datum: WGS84

Soil Map Unit Name: Ho - Holly silt loam, frequently flooded NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** ____ |
| Hydric Soil Present? | Yes X | No ____ | |
| Wetland Hydrology Present? | Yes X | No ____ | If yes, optional Wetland Site ID: W-1 |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- X 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)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No X | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No X | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No X | Depth (inches): ____ |

**Wetland Hydrology Present?** **Yes** X **No** ____

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

Remarks:
Sample plot taken near upslope wetland boundary; hydrologic indicators weaker than further within wetland (which has water stained leaves)

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-17

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Fraxinus pennsylvanica* | 30 | Yes | FACW |
| 2. *Acer rubrum* | 15 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 45 | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. *Cornus amomum* | 45 | Yes | FACW |
| 2. *Acer rubrum* | 10 | No | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 55 | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Carex vulpinoidea* | 30 | Yes | OBL |
| 2. *Phalaris arundinacea* | 20 | Yes | FACW |
| 3. *Symphyotrichum lateriflorum* | 10 | No | FAC |
| 4. *Geum canadense* | 10 | No | FAC |
| 5. *Dryopteris carthusiana* | 5 | No | FACW |
| 6. *Agrimonia parviflora* | 5 | No | FAC |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 80 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. *Toxicodendron radicans* | 25 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 25 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 30 | x 1 = | 30 |
| FACW species | 100 | x 2 = | 200 |
| FAC species | 75 | x 3 = | 225 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 205 (A) | | 455 (B) |

Prevalence Index = B/A = 2.22

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)
Symphyotrichum sp. is probably lanceolatum.

## SOIL

Sampling Point: SP-17

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR 4/1 | 90 | 7.5YR 5/8 | 10 | C | PL/M | Loamy/Clayey | Prominent redox concentrations |
| 5-10 | 10YR 4/1 | 70 | 7.5YR 5/8 | 30 | C | M | Loamy/Clayey | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown, Trumbull Sampling Date: 26 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-18

Investigator(s): Ann Gilmore, EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): convex Slope (%): 5-10

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.14769 Long: -80.847653 Datum: WGS84

Soil Map Unit Name: WbA - Wadsworth silt loam, 0 to 2 percent slopes NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** **Yes** ____ **No** X |
| Hydric Soil Present? | Yes ____ | No X | If yes, optional Wetland Site ID: W-1 |
| Wetland Hydrology Present? | Yes ____ | No X | |

Remarks: (Explain alternative procedures here or in a separate report.)
Forest upslope of floodplain wetland system.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ 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? (includes capillary fringe) | 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:
No hydrology observed.

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-18

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Acer rubrum* | 30 | Yes | FAC |
| 2. *Prunus serotina* | 10 | Yes | FACU |
| 3. *Quercus palustris* | 5 | No | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 45 | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. *Cornus amomum* | 65 | Yes | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 65 | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Carex pensylvanica* | 25 | Yes | UPL |
| 2. *Solidago rugosa* | 15 | Yes | FAC |
| 3. *Polystichum acrostichoides* | 10 | No | FAC |
| 4. *Lycopodium clavatum* | 10 | No | FAC |
| 5. *Dryopteris carthusiana* | 5 | No | FACW |
| 6. *Crataegus sp.* | 5 | No | NI |
| 7. *Oxalis stricta* | 2 | No | FACU |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 72 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. *Toxicodendron radicans* | 30 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 30 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 75 | x 2 = | 150 |
| FAC species | 95 | x 3 = | 285 |
| FACU species | 12 | x 4 = | 48 |
| UPL species | 25 | x 5 = | 125 |
| Column Totals: | 207 (A) | | 608 (B) |

Prevalence Index = B/A = 2.94

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)
Symphyotrichum sp. is probably lanceolatum.

## SOIL

Sampling Point: SP-18

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 4/4 | 100 | | | | | Loamy/Clayey | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: roots

Depth (inches): 8"

**Hydric Soil Present?** **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 24 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-19

Investigator(s): L. Sayre; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.146389 Long: -80.847628 Datum: WGS 84

Soil Map Unit Name: Wadsworth silt loam, 0 to 2 percent slopes (WbA) NWI classification: none

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-6 |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-19

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Quercus palustris* | 50 | Yes | FACW |
| 2. *Acer rubrum* | 30 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 80 | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. *Frangula alnus* | 20 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 20 | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Toxicodendron radicans* | 10 | Yes | FAC |
| 2. *Glyceria striata* | 7 | Yes | OBL |
| 3. *Cinna arundinacea* | 5 | Yes | FACW |
| 4. *Osmunda spectabilis* | 3 | No | OBL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 25 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| 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

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-19

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 4/1 | 80 | 10YR 4/6 | 20 | C | M | Loamy/Clayey | Prominent redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 24 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-20

Investigator(s): L. Sayre; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.144643 Long: -80.847819 Datum: WGS 84

Soil Map Unit Name: Wadsworth silt loam, 0 to 2 percent slopes (WbA) NWI classification: none

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-7 |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PEM

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-20

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. *Cornus amomum* | 10 | Yes | FACW |
| 2. *Frangula alnus* | 5 | Yes | FAC |
| 3. *Rubus allegheniensis* | 5 | Yes | FACU |
| 4. *Viburnum dentatum* | 3 | No | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 23 | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Phalaris arundinacea* | 75 | Yes | FACW |
| 2. *Scirpus cyperinus* | 25 | Yes | OBL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| 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

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-20

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 4/2 | 90 | 10YR 3/4 | 10 | C | PL | Loamy/Clayey | Distinct redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 24 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-21

Investigator(s): L. Sayre; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.144095 Long: -80.848023 Datum: WGS 84

Soil Map Unit Name: Wadsworth silt loam, 0 to 2 percent slopes (WbA) NWI classification: none

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes _____ | No X | **Is the Sampled Area within a Wetland?** **Yes** _____ **No** X |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: _____ |
| Wetland Hydrology Present? | Yes _____ | No X | |

Remarks: (Explain alternative procedures here or in a separate report.)
old field

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ 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? (includes capillary fringe) | 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:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-21

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. *Rubus allegheniensis* | 15 | Yes | FACU |
| 2. *Frangula alnus* | 10 | Yes | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 25 | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Dactylis glomerata* | 25 | Yes | FACU |
| 2. *Solidago rugosa* | 25 | Yes | FAC |
| 3. *Poa pratensis* | 22 | Yes | FACU |
| 4. *Euthamia graminifolia* | 15 | No | FAC |
| 5. *Potentilla simplex* | 5 | No | FACU |
| 6. *Symphyotrichum sp.* | 5 | No | NI |
| 7. *Scirpus cyperinus* | 3 | No | OBL |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 3 | x 1 = | 3 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 50 | x 3 = | 150 |
| FACU species | 67 | x 4 = | 268 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 120 (A) | | 421 (B) |

Prevalence Index = B/A = 3.51

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-21

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 4/2 | 100 | | | | | Loamy/Clayey | |
| 6-12 | 10YR 4/2 | 90 | 10YR 4/6 | 10 | C | M | Loamy/Clayey | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 24 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-22

Investigator(s): L. Sayre; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): 3

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.143863 Long: -80.846843 Datum: WGS 84

Soil Map Unit Name: Wadsworth silt loam, 0 to 2 percent slopes (WbA) NWI classification: none

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** **Yes** ____ **No** X |
| Hydric Soil Present? | Yes ____ | No X | If yes, optional Wetland Site ID: _____ |
| Wetland Hydrology Present? | Yes ____ | No X | |

Remarks: (Explain alternative procedures here or in a separate report.)
Forest

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ 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? (includes capillary fringe) | 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:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-22

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Acer saccharum* | 40 | Yes | FACU |
| 2. *Quercus palustris* | 20 | Yes | FACW |
| 3. *Prunus serotina* | 3 | No | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 63 | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. *Frangula alnus* | 45 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 45 | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: |
|---|---|
| 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

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-22

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 4/2 | 100 | | | | | Loamy/Clayey | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Compacted Soils

Depth (inches): 6+

**Hydric Soil Present?** **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 30 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-23

Investigator(s): N.Knowles; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.154669 Long: -80.8460 Datum: WGS 84

Soil Map Unit Name: Condit silt loam NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-7 |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- X Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-23

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Quercus palustris* | 40 | Yes | FACW |
| 2. *Acer saccharinum* | 30 | Yes | FACW |
| 3. *Ulmus americana* | 20 | Yes | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 90 | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Cornus racemosa* | 15 | Yes | FAC |
| 2. *Frangula alnus* | 15 | Yes | FAC |
| 3. *Glyceria striata* | 15 | Yes | OBL |
| 4. *Carex sp.* | 5 | No | NL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 50 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: |
|---|---|
| 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:**

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-23

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 5/1 | 90 | 10YR 5/8 | 10 | C | PL | Loamy/Clayey | Prominent redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 30 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-24

Investigator(s): A. Gilmore; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.14782 Long: -80.845726 Datum: WGS 84

Soil Map Unit Name: WbB - Wadsworth silt loam, 2 to 6 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, 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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | |
| Wetland Hydrology Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-10. |

Remarks: (Explain alternative procedures here or in a separate report.)
PSS, soil and vegeatation disturbed in ROW. Veg appears to have been sprayed this season, and soil within ROW is fill dirt with lots of rocks, as wee as ATV traffic. Fill dirt is creating an artificial shallow aquitard.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-24

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. *Frangula alnus* | 30 | Yes | FAC |
| 2. *Rubus allegheniensis* | 15 | Yes | FACU |
| 3. *Quercus palustris* | 5 | No | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 50 | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Dichanthelium clandestinum* | 30 | Yes | FACW |
| 2. *Carex scoparia* | 25 | Yes | FACW |
| 3. *Frangula alnus* | 20 | Yes | FAC |
| 4. *Phalaris arundinacea* | 20 | Yes | FACW |
| 5. *Solidago gigantea* | 5 | No | FACW |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| 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
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-24

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-5 | 10YR 3/2 | 90 | 10YR 5/8 | 10 | C | PL | Sandy | Prominent redox concentrations |
| 5-7 | 10YR 5/3 | 70 | 10YR 5/1 | 20 | RM | M | Loamy/Clayey | Sandy silt loam |
| | | | 10YR 5/8 | 10 | C | M | | Prominent redox concentrations |
| 7-12 | 10YR 5/4 | 100 | | | | | | Fill dirt |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ? Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: Aquitard?

Depth (inches): 12"

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown, Trumbull Sampling Date: 30 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-25

Investigator(s): Ann Gilmore, EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): none Local relief (concave, convex, none): flat Slope (%): 5-10

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.14782 Long: -80.845726 Datum: WGS84

Soil Map Unit Name: WbA - Wadsworth silt loam, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil X, 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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ___ | No X | **Is the Sampled Area within a Wetland?** **Yes** ___ **No** X |
| Hydric Soil Present? | Yes ___ | No X | |
| Wetland Hydrology Present? | Yes ___ | No X | If yes, optional Wetland Site ID: _____ |

Remarks: (Explain alternative procedures here or in a separate report.)
Open field, disturbed veg (sprayed in ROW) and soil (compacted, and fill dirt, hard to dig soil pit).

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ 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? (includes capillary fringe) | 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:
No hydrology observed.

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-25

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Oenothera biennis* | 20 | Yes | FACU |
| 2. *Solidago altissima* | 20 | Yes | FACU |
| 3. *Conyza canadensis* | 15 | Yes | DACU |
| 4. *Achillea millefolium* | 15 | Yes | FAC |
| 5. *Euthamia graminifolia* | 10 | No | FAC |
| 6. *Solidago rugosa* | 10 | No | FAC |
| 7. *Erigeron annuus* | 10 | No | FACU |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | 20 | Yes | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 20 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 20.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 0 | x 2 = | 0 |
| FAC species | 35 | x 3 = | 105 |
| FACU species | 50 | x 4 = | 200 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 85 | (A) | 305 (B) |

Prevalence Index = B/A = 3.59

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)
Symphyotrichum sp. is probably lanceolatum.

## SOIL

Sampling Point: SP-25

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 4/2 | 100 | | | | | Loamy/Clayey | silt loam with rocks |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: rocks

Depth (inches): 2"

**Hydric Soil Present?** **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown, Trumbull Sampling Date: 12/16/2015

Applicant/Owner: TetraTech State: OH Sampling Point: SP-26

Investigator(s): B. Slaby and M. Gilmore, EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): flat ground Local relief (concave, convex, none): none Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.147724 Long: -80.845286 Datum: WGS84

Soil Map Unit Name: Wadsworth silt loam, 0 to 2 percent slopes (WbA) NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: W-11 |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PEM.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:
Phalaris exhibiting very few oxidized rhizospheres (weak hydrology)

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-26

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Phalaris arundinacea* | 40 | Yes | FACW |
| 2. *Carex scoparia* | 40 | Yes | FACW |
| 3. *Euthamia graminifolia* | 10 | No | FAC |
| 4. *Juncus effusus* | 3 | No | OBL |
| 5. *Dichanthelium implicatum* | 3 | No | FAC |
| 6. *Frangula alnus* | 2 | No | FAC |
| 7. *Quercus palustris* | 1 | No | FACW |
| 8. *Juncus tenuis* | 1 | No | FAC |
| 9. *Lycopus sp.* | 1 | No | OBL |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 101 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 4 | x 1 = | 4 |
| FACW species | 81 | x 2 = | 162 |
| FAC species | 16 | x 3 = | 48 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 101 (A) | | 214 (B) |

Prevalence Index = B/A = 2.12

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-26

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-15 | 10YR 4/2 | 70 | 5YR 3/4 | 25 | C | PL/M | Loamy/Clayey | Prominent redox concentrations |
| | | | 7.5YR 5/6 | 5 | C | PL/M | | Prominent redox concentrations |
| 15-20 | 2.5Y 5/1 | 60 | 7.5YR 5/8 | 40 | C | M | Sandy | Prominent redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 30 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-27

Investigator(s): A. Gilmore; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.148165 Long: -80.845026 Datum: WGS 84

Soil Map Unit Name: WbB - Wadsworth silt loam, 2 to 6 percent slopes NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | |
| Wetland Hydrology Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-13. |

Remarks: (Explain alternative procedures here or in a separate report.)
PEM.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-27

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Carex scoparia* | 35 | Yes | FACW |
| 2. *Lotus corniculatus* | 25 | Yes | FACW |
| 3. *Rubus allegheniensis* | 20 | Yes | FACU |
| 4. *Doellingeria umbellata* | 12 | No | FACW |
| 5. *Frangula alnus* | 12 | No | FAC |
| 6. *Scirpus cyperinus* | 10 | No | OBL |
| 7. *Phalaris arundinacea* | 10 | No | FACW |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 124 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| 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
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-27

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR 4/1 | 80 | 7.5YR 4/6 | 20 | C | M | Loamy/Clayey | Prominent redox concentrations |
| 4-10 | 2.5Y 7/3 | 60 | 2.5Y 6/1 | 10 | RM | M | Loamy/Clayey | |
| | | | 10YR 5/8 | 30 | C | M | | Prominent redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 30 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-28

Investigator(s): A. Gilmore; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.148202 Long: -80.844829 Datum: WGS 84

Soil Map Unit Name: WbA - Wadsworth silt loam, 0 to 2 percent slopes NWI classification: N/A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, 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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-14. |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PEM in ROW, veg and soil siturbed from spraying, fill dirt, machinary /ATV vehicles.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ 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? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-28

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. | | | |
| 2. | 15 | Yes | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 15 | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Phalaris arundinacea* | 15 | Yes | FACW |
| 2. *Carex scoparia* | 15 | Yes | FACW |
| 3. *Carex lupulina* | 15 | Yes | OBL |
| 4. *Carex squarrosa* | 10 | No | OBL |
| 5. *Quercus palustris* | 5 | No | FACW |
| 6. *Frangula alnus* | 5 | No | FAC |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 65 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| 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
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-28

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 5/1 | 90 | 10YR 5/8 | 10 | C | PL/M | Loamy/Clayey | Distinct Redox Concentrations |
| 2-8 | 10YR 5/1 | 70 | 10YR 5/8 | 30 | C | PL | Loamy/Clayey | Prominent Redox Concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown, Trumbull Sampling Date: 12/16/2015

Applicant/Owner: TetraTech State: OH Sampling Point: SP-29

Investigator(s): B. Slaby and M. Gilmore, EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.147784 Long: -80.844698 Datum: WGS84

Soil Map Unit Name: Wadsworth silt loam, 0 to 2 percent slopes (WbA) NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: W-4 |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO. Sample Plot was re-veisited and cerified in 2016.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-29

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Quercus palustris* | 85 | Yes | FACW |
| 2. *Acer rubrum* | 15 | No | FAC |
| 3. *Ulmus americana* | 5 | No | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 105 | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. *Frangula alnus* | 8 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 8 | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Quercus palustris* | 7 | Yes | FACW |
| 2. *Carex vulpinoidea* | 5 | Yes | OBL |
| 3. *Juncus effusus* | 1 | No | OBL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 13 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 6 | x 1 = | 6 |
| FACW species | 97 | x 2 = | 194 |
| FAC species | 23 | x 3 = | 69 |
| FACU species | 0 | x 4 = | 0 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 126 (A) | | 269 (B) |

Prevalence Index = B/A = 2.13

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-29

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-3 | 10YR 3/1 | 97 | 5YR 3/4 | 3 | C | PL | Loamy/Clayey | Prominent redox concentrations |
| 3-20 | 2.5Y 6/1 | 60 | 7.5YR 5/8 | 40 | C | PL/M | Loamy/Clayey | Prominent redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- X Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- X Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown, Trumbull Sampling Date: 12/16/2015

Applicant/Owner: TetraTech State: OH Sampling Point: SP-30

Investigator(s): B. Slaby and M. Gilmore, EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): flat ground Local relief (concave, convex, none): convex Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.147905 Long: -80.843921 Datum: WGS84

Soil Map Unit Name: Wadsworth silt loam, 0 to 2 percent slopes (WbA) NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** _____ **No** X |
| Hydric Soil Present? | Yes _____ | No X | If yes, optional Wetland Site ID: _____ |
| Wetland Hydrology Present? | Yes _____ | No X | |

Remarks: (Explain alternative procedures here or in a separate report.)
Forest. Sample plot was re-visited and verified in 2016.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | 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:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-30

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Quercus palustris* | 75 | Yes | FACW |
| 2. *Populus grandidentata* | 20 | Yes | FACU |
| 3. *Ulmus americana* | 5 | No | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 100 | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. *Frangula alnus* | 15 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 15 | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Doellingeria umbellata* | 10 | Yes | FACW |
| 2. *Frangula alnus* | 5 | Yes | FAC |
| 3. *Rubus occidentalis* | 2 | No | UPL |
| 4. Unknown dicot | 2 | No | NL |
| 5. *Prunella vulgaris* | 1 | No | FAC |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 20 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. *Toxicodendron radicans* | 5 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | 5 | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 90 | x 2 = | 180 |
| FAC species | 26 | x 3 = | 78 |
| FACU species | 20 | x 4 = | 80 |
| UPL species | 2 | x 5 = | 10 |
| Column Totals: | 138 (A) | | 348 (B) |

Prevalence Index = B/A = 2.52

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)
Unknown dicot possibly Claytonia virginica confused about warm December weather.

## SOIL

Sampling Point: SP-30

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-15 | 10YR 4/3 | 100 | | | | | Loamy/Clayey | refusal at 15 inches (roots/rocks) |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 30 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-31

Investigator(s): N.Knowles; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.147003 Long: -80.844312 Datum: WGS 84

Soil Map Unit Name: Wadsworth silt loam, 0 to 2 percent slopes NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No ____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** ____ |
| Hydric Soil Present? | Yes X | No ____ | |
| Wetland Hydrology Present? | Yes X | No ____ | If yes, optional Wetland Site ID: Wetland W-17 |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No X | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No X | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No X | Depth (inches): ____ |

**Wetland Hydrology Present?** **Yes** X **No** ____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-31

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Quercus palustris* | 45 | Yes | FACW |
| 2. *Acer saccharum* | 40 | Yes | FACU |
| 3. *Fraxinus pennsylvanica* | 15 | No | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 100 | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Frangula alnus* | 5 | Yes | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 5 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | Multiply by: |
|---|---|
| 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:**

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-31

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-2 | 10YR 2/2 | 100 | | | | | Loamy/Clayey | |
| 2-4 | 10YR 4/1 | 80 | 10YR 7/4 | 20 | C | M | Loamy/Clayey | |
| 4-10 | 10YR 6/4 | 75 | 10YR 7/6 | 15 | c | m | Loamy/Clayey | Distinct redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 30 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-32

Investigator(s): N.Knowles; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): non Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.144641 Long: -80.844173 Datum: WGS 84

Soil Map Unit Name: Mahoning silt loam, 2 to 6 percent slopes NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes 0 | No X | **Is the Sampled Area within a Wetland?** **Yes** _____ **No** X |
| Hydric Soil Present? | Yes _____ | No X | If yes, optional Wetland Site ID: _____ |
| Wetland Hydrology Present? | Yes _____ | No X | |

Remarks: (Explain alternative procedures here or in a separate report.)
Open Field

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ 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? (includes capillary fringe) | 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:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-32

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Solidago rugosa* | 30 | Yes | FAC |
| 2. *Solidago canadensis* | 25 | Yes | FACU |
| 3. *Rubus allegheniensis* | 15 | No | FACU |
| 4. *Doellingeria umbellata* | 15 | No | FACW |
| 5. *Poa pratensis* | 15 | No | FACU |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0 | x 1 = | 0 |
| FACW species | 15 | x 2 = | 30 |
| FAC species | 30 | x 3 = | 90 |
| FACU species | 55 | x 4 = | 220 |
| UPL species | 0 | x 5 = | 0 |
| Column Totals: | 100 (A) | | 340 (B) |

Prevalence Index = B/A = 3.40

**Hydrophytic Vegetation Indicators:**

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-32

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 4/4 | 100 | | | | | Loamy/Clayey | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ___ **No** X

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 30 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-33

Investigator(s): N.Knowles; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.143662 Long: -80.845174 Datum: WGS 84

Soil Map Unit Name: Wadsworth silt loam, 0 to 2 percent slopes NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-7 |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PSS

### HYDROLOGY

**Wetland Hydrology Indicators:**

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-33

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | | =Total Cover | |
| **Sapling/Shrub Stratum (Plot size: 15')** | | | |
| 1. *Cornus racemosa* | 15 | Yes | FAC |
| 2. *Frangula alnus* | 10 | Yes | FAC |
| 3. *Viburnum lentago* | 10 | Yes | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 35 | =Total Cover | |
| **Herb Stratum (Plot size: 5')** | | | |
| 1. *Typha angustifolia* | 25 | Yes | OBL |
| 2. *Epilobium coloratum* | 15 | Yes | OBL |
| 3. *Glyceria striata* | 15 | Yes | OBL |
| 4. *Carex crinita* | 10 | No | OBL |
| 5. *Agrimonia parviflora* | 10 | No | FAC |
| 6. *Carex stipata* | 10 | No | OBL |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 85 | =Total Cover | |
| **Woody Vine Stratum (Plot size: 30')** | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| 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:**

X 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-33

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-16 | 10YR 5/1 | 90 | 2.5YR 3/6 | 10 | C | PL | Loamy/Clayey | Prominent redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

## WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Trumbull Energy Center City/County: Lordstown/Trumbull Sampling Date: 30 Aug 2016

Applicant/Owner: TetraTech State: OH Sampling Point: SP-34

Investigator(s): A. Gilmore, L.Sayre; EnviroScience, Inc. Section, Township, Range: _____

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): _____

Subregion (LRR or MLRA): LRR R, MLRA 139 Lat: 41.143512 Long: -80.846158 Datum: WGS 84

Soil Map Unit Name: Ct - Condit silt loam NWI classification: N/A

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.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes X | No _____ | **Is the Sampled Area within a Wetland?** **Yes** X **No** _____ |
| Hydric Soil Present? | Yes X | No _____ | If yes, optional Wetland Site ID: Wetland W-7 |
| Wetland Hydrology Present? | Yes X | No _____ | |

Remarks: (Explain alternative procedures here or in a separate report.)
PFO.

### HYDROLOGY

**Wetland Hydrology Indicators:**

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)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes _____ | No X | Depth (inches): _____ |
| Water Table Present? | Yes _____ | No X | Depth (inches): _____ |
| Saturation Present? (includes capillary fringe) | Yes _____ | No X | Depth (inches): _____ |

**Wetland Hydrology Present?** **Yes** X **No** _____

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

Remarks:

**VEGETATION** – Use scientific names of plants.

Sampling Point: SP-34

| Tree Stratum (Plot size: 30') | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. *Quercus palustris* | 25 | Yes | FACW |
| 2. *Acer rubrum* | 20 | Yes | FAC |
| 3. *Ulmus americana* | 20 | Yes | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 65 | =Total Cover | |

| Sapling/Shrub Stratum (Plot size: 15') | | | |
|---|---|---|---|
| 1. *Frangula alnus* | 10 | Yes | FAC |
| 2. *Quercus palustris* | 5 | Yes | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| | 15 | =Total Cover | |

| Herb Stratum (Plot size: 5') | | | |
|---|---|---|---|
| 1. *Quercus palustris* | 5 | Yes | FACW |
| 2. *Glyceria striata* | 5 | Yes | OBL |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 10 | =Total Cover | |

| Woody Vine Stratum (Plot size: 30') | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| | | =Total Cover | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: |
|---|---|---|
| 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

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

**Definitions of Vegetation Strata:**

**Tree** – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

**Sapling/shrub** – Woody plants less than 3 in. DBH and greater than or equal to 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 vines** – All woody vines greater than 3.28 ft in height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

## SOIL

Sampling Point: SP-34

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | Matrix % | Redox Features Color (moist) | Redox Features % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-4 | 10YR 5/1 | 80 | 10YR 5/8 | 20 | C | M | Loamy/Clayey | Prominent redox concentrations |
| 4-10 | 10YR 6/2 | 75 | 10YR 6/8 | 25 | C | M | Loamy/Clayey | Prominent redox concentrations |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ High Chroma Sands (S11) (**LRR K, L)**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ? Redox Depressions (F8)
- ___ Marl (F10) (**LRR K, L**)

**Indicators for Problematic Hydric Soils[3]:**

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ? Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** X **No** ___

Remarks:

This data form is revised from Northcentral and Northeast Regional Supplement Version 2.0 to include the NRCS Field Indicators of Hydric Soils version 7.0 March 2013 Errata. (http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_051293.docx)

# Appendix D:

# Ohio Rapid Assessment Method for Wetlands v. 5.0 Rating Forms

# Background Information

| | |
|---|---|
| **Name:** | Laura Sayre |
| **Date:** | 8/26/2016 |
| **Affiliation:** | EnviroScience, Inc. |
| **Address:** | 5070 Stow Road, Stow Ohio 44224 |
| **Phone Number:** | 330-688-0111 |
| **e-mail address:** | LSayre@EnviroScienceInc.com |
| **Name of Wetland:** | W-1, W-2, W-5, and W-9 |
| **Vegetation Communit(ies):** | PEM/PSS/PFO |
| **HGM Class(es):** | Riverine |

**Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.**

Please refer to site wetlands and water resources map.

| | |
|---|---|
| Lat/Long or UTM Coordinate | 41.145479N, -80.852313W |
| USGS Quad Name | Warren |
| County | Trumbull |
| Township | Lordstown Township |
| Section and Subsection | |
| Hydrologic Unit Code | 05030103 |
| Site Visit | 2/2016, 8/2016 |
| National Wetland Inventory Map | attached |
| Ohio Wetland Inventory Map | |
| Soil Survey | attached |
| Delineation report/map | attached |

| | |
|---|---|
| **Name of Wetland:** | W-1, W-2, W-5, and W-9 |
| **Wetland Size (acres, hectares):** | 18.94 ac. onsite, Approximately 25 acres total |

**Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.**

Please refer to site wetlands and water resources map.

**Comments, Narrative Discussion, Justification of Category Changes:**

| | | | |
|---|---|---|---|
| **Final score :** | 52 | **Category:** | 2 |

# Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|---|---|---|---|
| **Step 1** | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| **Step 2** | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | X | |
| **Step 3** | Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary. | X | |
| **Step 4** | Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes. | X | |
| **Step 5** | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | X | |
| **Step 6** | Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications. | X | |

**End of Scoring Boundary Determination. Begin Narrative Rating on next page.**

# Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| # | Question | Circle one | |
|---|---|---|---|
| 1 | **Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 2 | NO<br><br>Go to Question 2 |
| 2 | **Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 3 | NO<br><br>Go to Question 3 |
| 3 | **Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 4 | NO<br><br>Go to Question 4 |
| 4 | **Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 5 | NO<br><br>Go to Question 5 |
| 5 | **Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES<br><br>Wetland is a Category 1 wetland<br><br>Go to Question 6 | NO<br><br>Go to Question 6 |
| 6 | **Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 7 | NO<br><br>Go to Question 7 |
| 7 | **Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 8a | NO<br><br>Go to Question 8a |
| 8a | **"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 8b | NO<br><br>Go to Question 8b |

| | | | |
|---|---|---|---|
| **8b** | **Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | YES<br><br>Wetland should be evaluated for possible Category 3 status.<br><br>Go to Question 9a | NO<br><br>Go to Question 9a |
| **9a** | **Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish? | YES<br><br>Go to Question 9b | NO<br><br>Go to Question 10 |
| **9b** | Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 9c |
| **9c** | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation. | YES<br><br>Go to Question 9d | NO<br><br>Go to Question 10 |
| **9d** | Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 10 | NO<br><br>Go to Question 9e |
| **9e** | Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 10 |
| **10** | **Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality. | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 11 | NO<br><br>Go to Question 11 |
| **11** | **Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Complete Quantitative Rating | NO<br><br>Complete Quantitative Rating |

**Table 1. Characteristic plant species.**

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|---|---|---|---|---|
| *Lythrum salicaria* | *Zygadenus elegans var. glaucus* | *Calla palustris* | *Carex cryptolepis* | *Calamagrostis canadensis* |
| *Myriophyllum spicatum* | *Cacalia plantaginea* | *Carex atlantica var. capillacea* | *Carex lasiocarpa* | *Calamogrostis stricta* |
| *Najas minor* | *Carex flava* | *Carex echinata* | *Carex stricta* | *Carex atherodes* |
| *Phalaris arundinacea* | *Carex sterilis* | *Carex oligosperma* | *Cladium mariscoides* | *Carex buxbaumii* |
| *Phragmites australis* | *Carex stricta* | *Carex trisperma* | *Calamagrostis stricta* | *Carex pellita* |
| *Potamogeton crispus* | *Deschampsia caespitosa* | *Chamaedaphne calyculata* | *Calamagrostis canadensis* | *Carex sartwellii* |
| *Ranunculus ficaria* | *Eleocharis rostellata* | *Decodon verticillatus* | *Quercus palustris* | *Gentiana andrewsii* |
| *Rhamnus frangula* | *Eriophorum viridicarinatum* | *Eriophorum virginicum* | | *Helianthus grosseserratus* |
| *Typha angustifolia* | *Gentianopsis spp.* | *Larix laricina* | | *Liatris spicata* |
| *Typha xglauca* | *Lobelia kalmii* | *Nemopanthus mucronatus* | | *Lysimachia quadriflora* |
| | *Parnassia glauca* | *Schechzeria palustris* | | *Lythrum alatum* |
| | *Potentilla fruticosa* | *Sphagnum spp.* | | *Pycnanthemum virginianum* |
| | *Rhamnus alnifolia* | *Vaccinium macrocarpon* | | *Silphium terebinthinaceum* |
| | *Rhynchospora capillacea* | *Vaccinium corymbosum* | | *Sorghastrum nutans* |
| | *Salix candida* | *Vaccinium oxycoccos* | | *Spartina pectinata* |
| | *Salix myricoides* | *Woodwardia virginica* | | *Solidago riddellii* |
| | *Salix serissima* | *Xyris difformis* | | |
| | *Solidago ohioensis* | | | |
| | *Tofieldia glutinosa* | | | |
| | *Triglochin maritimum* | | | |
| | *Triglochin palustre* | | | |

**End of Narrative Rating. Begin Quantitative Rating on next page.**

ORAM v. 5.0 Field Form Quantitative Rating

# Wetlands W-1, W-2, W-5 and W-9

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | Date: 8/26/2016 |
|---|---|---|

| 4 | 4 |
|---|---|
| max 6 pts. | subtotal |

## Metric 1. Wetland Area (size).

Select one size class and assign score.

| | |
|---|---|
| | >50 acres (>20.2ha) (6 pts) |
| | 25 to <50 acres (10.1 to <20.2ha) (5 pts) |
| 4 | 10 to <25 acres (4 to <10.1 ha) (4 pts) |
| | 3 to <10 acres (1.2 to <4 ha) (3 pts) |
| | 0.3 to < 3 acres (012 to <1.2ha) (2 pts) |
| | 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) |
| | <0.1 acres (0.04ha) (0 pts) |

| 9 | 13 |
|---|---|
| max 14 pts. | subtotal |

## Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

| | |
|---|---|
| | WIDE. Buffers average 50m (164 ft) or more around wetland perimeter (7) |
| 4 | MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) |
| | NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) |
| | VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) |

2b. Intensity of surrounding land use. Select one or double check and average.

| | |
|---|---|
| 7 | VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) |
| | LOW. Old field (>10 years), shrubland, young second growth forest. (5) |
| 3 | MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) |
| | HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) |

| 16 | 29 |
|---|---|
| max 30 pts. | subtotal |

## Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

| | |
|---|---|
| | High pH groundwater (5) |
| | Other groundwater (3) |
| 1 | Precipitation (1) |
| 3 | Seasonal/Intermittent surface water (3) |
| | Perennial surface water (lake or stream (5) |

3b. Connectivity. Score all that apply.

| | |
|---|---|
| 1 | 100 year floodplain (1) |
| 1 | Between stream/lake and other human use (1) |
| | Part of wetland/upland (e.g. forest), complex (1) |
| 1 | Part of riparian or upland corridor (1) |

on/saturation. Score one or dbl check.

| | |
|---|---|
| | Semi- to permanently inundated/saturated (4) |
| | Regularly inundated/saturated (3) |
| 2 | Seasonally inundated (2) |
| 1 | Seasonally saturated in upper 30cm (12in) (1) |

3c. Maximum water depth. Select only one and assign score.

| | |
|---|---|
| | >0.7 (27.6in) (3) |
| | 0.4 to 0.7m (15.7 to 27.6in) (2) |
| 1 | <0.4m (<15.7in) (1) |

3e. Modifications to natural hydrologic regime. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (12) |
| 7 | Recovered (7) |
| 3 | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| X | ditch | | point source (nonstormwater) |
| | tile | X | filling/grading |
| X | dike | X | road bed/RR track |
| | weir | | dredging |
| X | stormwater input | | Other: |

| 13 | 42 |
|---|---|
| max 20 pts. | subtotal |

## Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

| | |
|---|---|
| 4 | None or none apparent (4) |
| 3 | Recovered (3) |
| | Recovering (2) |
| | Recent or no recovery (1) |

4b. Habitat development. Select only one and assign score.

| | |
|---|---|
| | Excellent (7) |
| | Very good (6) |
| 5 | Good (5) |
| | Moderately good (4) |
| | Fair (3) |
| | Poor to fair (2) |
| | Poor (1) |

4c. Habitat alteration. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (9) |
| 6 | Recovered (6) |
| 3 | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| X | mowing | X | shrub/sapling removal |
| | grazing | | herbaceous/aquatic bed removal |
| X | clearcutting | X | sedimentation |
| | selective cutting | | dredging |
| X | woody debris removal | | farming |
| X | toxic pollutants | | nutrient enrichment |

| 42 |
|---|
| subtotal this page |

last revised 1 February 2001 jim

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | 12/16/2015 |
|---|---|---|

42
subtotal first page

## Metric 5. Special Wetlands.

0 max 10 pts. | 42 subtotal

Check all that apply and score as indicated.

| | |
|---|---|
| | Bog (10) |
| | Fen (10) |
| | Old growth forest (10) |
| | Mature forested wetland (5) |
| | Lake Erie coastal/tributary wetland -unrestricted hydrology (10) |
| | Lake Erie coastal/tributary wetland-restricted hydrology (5) |
| | Lake Plain Sand Prairies (Oak Openings) (10) |
| | Relict Wet Prairies (10) |
| | Known occurrence state/federal threatened or endangered species (10) |
| | Significant migratory songbird/water fowl habitat or usage (10) |
| | Category 1 Wetland. See Question 1 Qualitative Rating (-10) |

## Metric 6. Plant communities, interspersion, microtopography.

10 max 20 pts. | 52 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

| | |
|---|---|
| | Aquatic bed |
| 2 | Emergent |
| 2 | Shrub |
| 2 | Forest |
| | Mudflats |
| | Open Water |
| | Other_____ |

6b. Horizontal (plan view) Interspersion.
Score only one.

| | |
|---|---|
| | High (5) |
| 4 | Moderately high (4) |
| | Moderate (3) |
| | Moderately low (2) |
| | Low (1) |
| | None (0) |

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

| | |
|---|---|
| -5 | Extensive >75% cover (-5) |
| | Moderate 25-75% cover (-3) |
| | Sparse 5-25% cover (-1) |
| | Nearly absent <5% cover (0) |
| | Absent (1) |

6d. Microtopography.
Score all present using 0 to 3 scale.

| | |
|---|---|
| 1 | Vegetated hummucks/tussucks |
| 2 | Coarse woody debris >15cm (6in) |
| 1 | Standing dead >25cm (10in) dbh |
| 1 | Amphibian breeding pools |

**Vegatation Community Cover Scale**

| | |
|---|---|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality. |
| 3 | Present and comprises significant part, or more, of wetland's vegetation and is of high quality. |

**Narrative Description of Vegetation Quality**

| | |
|---|---|
| low | Low spp diversity and/or predominance of nonnative or disturbance tolerant native species |
| mod | Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened, or endangered spp |
| high | A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp |

**Mudflat and Open Water Class Quality**

| | |
|---|---|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

**Microtopography Cover Scale**

| | |
|---|---|
| 0 | Absent |
| 1 | Present in very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

52 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM score calibration report for the scoring breakpoints between categories at the following address: http://epa.state.oh.us/dsw/401/401.html

# ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|---|---|---|---|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 4 | |
| | Metric 2. Buffers and surrounding land use | 9 | |
| | Metric 3. Hydrology | 16 | |
| | Metric 4. Habitat | 13 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 10 | |
| | TOTAL SCORE | 52 | Category based on score breakpoints 2 |

**Complete Wetland Categorization Worksheet**.

# Wetland Categorization Worksheet

| Choices | Circle one | | Evaluation of Categorization Result of ORAM |
|---|---|---|---|
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10 | YES<br><br>Wetland is categorized as a Category 3 wetland | NO | Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM |
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 1, 8b, 9b, 9e, 11 | YES<br><br>Wetland should be evaluated for possible Category 3 status | NO | Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category. |
| Did you answer "Yes" to<br><br>Narrative Rating No. 5 | YES<br><br>Wetland is categorized as a Category 1 wetland | NO | Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM |
| Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland? | YES<br><br>Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands? | YES<br><br>Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES<br><br>Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | NO<br><br>Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided. |

**Final Category**

| Choose one | Category 1 | Category 2 | Category 3 |
|---|---|---|---|

## End of Ohio Rapid Assessment Method for Wetlands.

# Background Information

| | |
|---|---|
| **Name:** | Laura Sayre |
| **Date:** | 8/26/2016 |
| **Affiliation:** | EnviroScience, Inc. |
| **Address:** | 5070 Stow Road, Stow Ohio 44224 |
| **Phone Number:** | 330-688-0111 |
| **e-mail address:** | LSayre@EnviroScienceInc.com |
| **Name of Wetland:** | W-3 and W-4 |
| **Vegetation Communit(ies):** | PFO |
| **HGM Class(es):** | Depressional |

**Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.**

Please refer to site wetlands and water resources map.

| | |
|---|---|
| Lat/Long or UTM Coordinate | 41.144451N, -80.850574W |
| USGS Quad Name | Warren |
| County | Trumbull |
| Township | Lordstown Township |
| Section and Subsection | |
| Hydrologic Unit Code | 05030103 |
| Site Visit | 2/2016, 8/2016 |
| National Wetland Inventory Map | attached |
| Ohio Wetland Inventory Map | |
| Soil Survey | attached |
| Delineation report/map | attached |

| | |
|---|---|
| **Name of Wetland:** | W-3 and W-4 |
| **Wetland Size (acres, hectares):** | W-3 = 0.272 ac.; W-4 = 1.951 ac. |

**Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.**

Please refer to site wetlands and water resources map.

**Comments, Narrative Discussion, Justification of Category Changes:**

| | | | |
|---|---|---|---|
| **Final score :** | 39 | **Category:** | Modified 2 |

# Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|---|---|---|---|
| **Step 1** | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| **Step 2** | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | X | |
| **Step 3** | Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary. | X | |
| **Step 4** | Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes. | X | |
| **Step 5** | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | X | |
| **Step 6** | Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications. | X | |

**End of Scoring Boundary Determination. Begin Narrative Rating on next page.**

# Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| # | Question | Circle one | |
|---|---|---|---|
| 1 | **Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 2 | NO<br><br>Go to Question 2 |
| 2 | **Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 3 | NO<br><br>Go to Question 3 |
| 3 | **Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 4 | NO<br><br>Go to Question 4 |
| 4 | **Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 5 | NO<br><br>Go to Question 5 |
| 5 | **Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES<br><br>Wetland is a Category 1 wetland<br><br>Go to Question 6 | NO<br><br>Go to Question 6 |
| 6 | **Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 7 | NO<br><br>Go to Question 7 |
| 7 | **Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 8a | NO<br><br>Go to Question 8a |
| 8a | **"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 8b | NO<br><br>Go to Question 8b |

| | | | |
|---|---|---|---|
| **8b** | **Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | YES<br><br>Wetland should be evaluated for possible Category 3 status.<br><br>Go to Question 9a | NO<br><br>Go to Question 9a |
| **9a** | **Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish? | YES<br><br>Go to Question 9b | NO<br><br>Go to Question 10 |
| **9b** | Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 9c |
| **9c** | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation. | YES<br><br>Go to Question 9d | NO<br><br>Go to Question 10 |
| **9d** | Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 10 | NO<br><br>Go to Question 9e |
| **9e** | Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 10 |
| **10** | **Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality. | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 11 | NO<br><br>Go to Question 11 |
| **11** | **Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Complete Quantitative Rating | NO<br><br>Complete Quantitative Rating |

**Table 1. Characteristic plant species.**

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|---|---|---|---|---|
| *Lythrum salicaria* | *Zygadenus elegans var. glaucus* | *Calla palustris* | *Carex cryptolepis* | *Calamagrostis canadensis* |
| *Myriophyllum spicatum* | *Cacalia plantaginea* | *Carex atlantica var. capillacea* | *Carex lasiocarpa* | *Calamogrostis stricta* |
| *Najas minor* | *Carex flava* | *Carex echinata* | *Carex stricta* | *Carex atherodes* |
| *Phalaris arundinacea* | *Carex sterilis* | *Carex oligosperma* | *Cladium mariscoides* | *Carex buxbaumii* |
| *Phragmites australis* | *Carex stricta* | *Carex trisperma* | *Calamagrostis stricta* | *Carex pellita* |
| *Potamogeton crispus* | *Deschampsia caespitosa* | *Chamaedaphne calyculata* | *Calamagrostis canadensis* | *Carex sartwellii* |
| *Ranunculus ficaria* | *Eleocharis rostellata* | *Decodon verticillatus* | *Quercus palustris* | *Gentiana andrewsii* |
| *Rhamnus frangula* | *Eriophorum viridicarinatum* | *Eriophorum virginicum* | | *Helianthus grosseserratus* |
| *Typha angustifolia* | *Gentianopsis spp.* | *Larix laricina* | | *Liatris spicata* |
| *Typha xglauca* | *Lobelia kalmii* | *Nemopanthus mucronatus* | | *Lysimachia quadriflora* |
| | *Parnassia glauca* | *Schechzeria palustris* | | *Lythrum alatum* |
| | *Potentilla fruticosa* | *Sphagnum spp.* | | *Pycnanthemum virginianum* |
| | *Rhamnus alnifolia* | *Vaccinium macrocarpon* | | *Silphium terebinthinaceum* |
| | *Rhynchospora capillacea* | *Vaccinium corymbosum* | | *Sorghastrum nutans* |
| | *Salix candida* | *Vaccinium oxycoccos* | | *Spartina pectinata* |
| | *Salix myricoides* | *Woodwardia virginica* | | *Solidago riddellii* |
| | *Salix serissima* | *Xyris difformis* | | |
| | *Solidago ohioensis* | | | |
| | *Tofieldia glutinosa* | | | |
| | *Triglochin maritimum* | | | |
| | *Triglochin palustre* | | | |

**End of Narrative Rating. Begin Quantitative Rating on next page.**

W-3 and W-4

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | Date: 8/26/2016 |
|---|---|---|

| 2 | 2 |
|---|---|
| max 6 pts. | subtotal |

## Metric 1. Wetland Area (size).

Select one size class and assign score.

| | |
|---|---|
| | >50 acres (>20.2ha) (6 pts) |
| | 25 to <50 acres (10.1 to <20.2ha) (5 pts) |
| | 10 to <25 acres (4 to <10.1 ha) (4 pts) |
| | 3 to <10 acres (1.2 to <4 ha) (3 pts) |
| 2 | 0.3 to < 3 acres (012 to <1.2ha) (2 pts) |
| | 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) |
| | <0.1 acres (0.04ha) (0 pts) |

| 9 | 11 |
|---|---|
| max 14 pts. | subtotal |

## Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

| | |
|---|---|
| | WIDE. Buffers average 50m (164 ft) or more around wetland perimeter (7) |
| 4 | MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) |
| | NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) |
| | VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) |

2b. Intensity of surrounding land use. Select one or double check and average.

| | |
|---|---|
| | VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) |
| 5 | LOW. Old field (>10 years), shrubland, young second growth forest. (5) |
| | MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) |
| | HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) |

| 12 | 23 |
|---|---|
| max 30 pts. | subtotal |

## Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

| | |
|---|---|
| | High pH groundwater (5) |
| | Other groundwater (3) |
| 1 | Precipitation (1) |
| | Seasonal/Intermittent surface water (3) |
| | Perennial surface water (lake or stream (5) |

3b. Connectivity. Score all that apply.

| | |
|---|---|
| | 100 year floodplain (1) |
| | Between stream/lake and other human use (1) |
| 1 | Part of wetland/upland (e.g. forest), complex (1) |
| | Part of riparian or upland corridor (1) |

3c. Maximum water depth. Select only one and assign score.

| | |
|---|---|
| | >0.7 (27.6in) (3) |
| | 0.4 to 0.7m (15.7 to 27.6in) (2) |
| 1 | <0.4m (<15.7in) (1) |

ı/saturation. Score one or dbl check.

| | |
|---|---|
| | Semi- to permanently inundated/saturated (4) |
| | Regularly inundated/saturated (3) |
| 2 | Seasonally inundated (2) |
| | Seasonally saturated in upper 30cm (12in) (1) |

3e. Modifications to natural hydrologic regime. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (12) |
| 7 | Recovered (7) |
| | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| | ditch | | point source (nonstormwater) |
| | tile | X | filling/grading |
| | dike | | road bed/RR track |
| | weir | | dredging |
| | stormwater input | | Other: Mowed Easement |

| 13 | 36 |
|---|---|
| max 20 pts. | subtotal |

## Metric 4. Habitat Alternation and Development.

4a. Substrate disturbance. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (4) |
| 3 | Recovered (3) |
| | Recovering (2) |
| | Recent or no recovery (1) |

4b. Habitat development. Select only one and assign score.

| | |
|---|---|
| | Excellent (7) |
| | Very good (6) |
| | Good (5) |
| 4 | Moderately good (4) |
| | Fair (3) |
| | Poor to fair (2) |
| | Poor (1) |

4c. Habitat alteration. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (9) |
| 6 | Recovered (6) |
| | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| | mowing | | shrub/sapling removal |
| | grazing | | herbaceous/aquatic bed removal |
| | clearcutting | | sedimentation |
| | selective cutting | | dredging |
| | woody debris removal | X | farming |
| | toxic pollutants | | nutrient enrichment |

| 36 |
|---|
| subtotal this page |

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | Date: 8/26/2016 |
|---|---|---|

36
subtotal first page

## Metric 5. Special Wetlands.

0 max 10 pts. | 36 subtotal

Check all that apply and score as indicated.

| | |
|---|---|
| | Bog (10) |
| | Fen (10) |
| | Old growth forest (10) |
| | Mature forested wetland (5) |
| | Lake Erie coastal/tributary wetland -unrestricted hydrology (10) |
| | Lake Erie coastal/tributary wetland-restricted hydrology (5) |
| | Lake Plain Sand Prairies (Oak Openings) (10) |
| | Relict Wet Prairies (10) |
| | Known occurrence state/federal threatened or endangered species (10) |
| | Significant migratory songbird/water fowl habitat or usage (10) |
| | Category 1 Wetland. See Question 1 Qualitative Rating (-10) |

## Metric 6. Plant communities, interspersion, microtopography.

3 max 20 pts. | 39 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

| | |
|---|---|
| | Aquatic bed |
| | Emergent |
| | Shrub |
| 2 | Forest |
| | Mudflats |
| | Open Water |
| | Other_____ |

6b. Horizontal (plan view) Interspersion.
Score only one.

| | |
|---|---|
| | High (5) |
| | Moderately high (4) |
| | Moderate (3) |
| | Moderately low (2) |
| | Low (1) |
| 0 | None (0) |

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

| | |
|---|---|
| | Extensive >75% cover (-5) |
| -3 | Moderate 25-75% cover (-3) |
| | Sparse 5-25% cover (-1) |
| | Nearly absent <5% cover (0) |
| | Absent (1) |

6d. Microtopography.
Score all present using 0 to 3 scale.

| | |
|---|---|
| 1 | Vegetated hummucks/tussucks |
| 2 | Coarse woody debris >15cm (6in) |
| 1 | Standing dead >25cm (10in) dbh |
| 0 | Amphibian breeding pools |

**Vegatation Community Cover Scale**

| | |
|---|---|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality. |
| 3 | Present and comprises significant part, or more, of wetland's vegetation and is of high quality. |

**Narrative Description of Vegetation Quality**

| | |
|---|---|
| low | Low spp diversity and/or predominance of nonnative or disturbance tolerant native species |
| mod | Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened, or endangered spp |
| high | A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp |

**Mudflat and Open Water Class Quality**

| | |
|---|---|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

**Microtopography Cover Scale**

| | |
|---|---|
| 0 | Absent |
| 1 | Present in very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

39 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM score calibration report for the scoring breakpoints between categories at the following address: http://epa.state.oh.us/dsw/401/401.html

# ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|---|---|---|---|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 2 | |
| | Metric 2. Buffers and surrounding land use | 9 | |
| | Metric 3. Hydrology | 12 | |
| | Metric 4. Habitat | 13 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 3 | |
| | TOTAL SCORE | 39 | Category based on score breakpoints<br>Modified 2 |

**Complete Wetland Categorization Worksheet**.

# Wetland Categorization Worksheet

| Choices | Circle one | | Evaluation of Categorization Result of ORAM |
|---|---|---|---|
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10 | YES<br><br>Wetland is categorized as a Category 3 wetland | NO | Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM |
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 1, 8b, 9b, 9e, 11 | YES<br><br>Wetland should be evaluated for possible Category 3 status | NO | Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category. |
| Did you answer "Yes" to<br><br>Narrative Rating No. 5 | YES<br><br>Wetland is categorized as a Category 1 wetland | NO | Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM |
| Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland? | YES<br><br>Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands? | YES<br><br>Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES<br><br>Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | NO<br><br>Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided. |

**Final Category**

| Choose one | Category 1 | Category 2 | Category 3 |
|---|---|---|---|

## End of Ohio Rapid Assessment Method for Wetlands.

# Background Information

| | |
|---|---|
| **Name:** | Laura Sayre |
| **Date:** | 8/26/2016 |
| **Affiliation:** | EnviroScience, Inc. |
| **Address:** | 5070 Stow Road, Stow Ohio 44224 |
| **Phone Number:** | 330-688-0111 |
| **e-mail address:** | LSayre@EnviroScienceInc.com |
| **Name of Wetland:** | W-6 |
| **Vegetation Communit(ies):** | PFO |
| **HGM Class(es):** | Depression |

**Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.**

Please refer to site wetlands and water resources map.

| | |
|---|---|
| Lat/Long or UTM Coordinate | 41.146393N, -80.84769W |
| USGS Quad Name | Warren |
| County | Trumbull |
| Township | Lordstown Township |
| Section and Subsection | |
| Hydrologic Unit Code | 05030103 |
| Site Visit | 8/2016 |
| National Wetland Inventory Map | attached |
| Ohio Wetland Inventory Map | |
| Soil Survey | attached |
| Delineation report/map | attached |

| | |
|---|---|
| **Name of Wetland:** | W-6 |
| **Wetland Size (acres, hectares):** | 0.064 ac. |

**Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.**

Please refer to site wetlands and water resources map.

**Comments, Narrative Discussion, Justification of Category Changes:**

| | | | |
|---|---|---|---|
| **Final score :** | 35 | **Category:** | Modified 2 |

# Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|---|---|---|---|
| **Step 1** | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| **Step 2** | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | X | |
| **Step 3** | Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary. | X | |
| **Step 4** | Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes. | X | |
| **Step 5** | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | | X |
| **Step 6** | Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications. | | X |

**End of Scoring Boundary Determination. Begin Narrative Rating on next page.**

# Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| # | Question | Circle one | |
|---|---|---|---|
| 1 | **Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 2 | NO<br><br>Go to Question 2 |
| 2 | **Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 3 | NO<br><br>Go to Question 3 |
| 3 | **Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 4 | NO<br><br>Go to Question 4 |
| 4 | **Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 5 | NO<br><br>Go to Question 5 |
| 5 | **Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES<br><br>Wetland is a Category 1 wetland<br><br>Go to Question 6 | NO<br><br>Go to Question 6 |
| 6 | **Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 7 | NO<br><br>Go to Question 7 |
| 7 | **Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 8a | NO<br><br>Go to Question 8a |
| 8a | **"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 8b | NO<br><br>Go to Question 8b |

| | | | |
|---|---|---|---|
| **8b** | **Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | YES<br><br>Wetland should be evaluated for possible Category 3 status.<br><br>Go to Question 9a | NO<br><br>Go to Question 9a |
| **9a** | **Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish? | YES<br><br>Go to Question 9b | NO<br><br>Go to Question 10 |
| **9b** | Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 9c |
| **9c** | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation. | YES<br><br>Go to Question 9d | NO<br><br>Go to Question 10 |
| **9d** | Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 10 | NO<br><br>Go to Question 9e |
| **9e** | Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 10 |
| **10** | **Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality. | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 11 | NO<br><br>Go to Question 11 |
| **11** | **Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Complete Quantitative Rating | NO<br><br>Complete Quantitative Rating |

**Table 1. Characteristic plant species.**

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|---|---|---|---|---|
| *Lythrum salicaria* | *Zygadenus elegans var. glaucus* | *Calla palustris* | *Carex cryptolepis* | *Calamagrostis canadensis* |
| *Myriophyllum spicatum* | *Cacalia plantaginea* | *Carex atlantica var. capillacea* | *Carex lasiocarpa* | *Calamogrostis stricta* |
| *Najas minor* | *Carex flava* | *Carex echinata* | *Carex stricta* | *Carex atherodes* |
| *Phalaris arundinacea* | *Carex sterilis* | *Carex oligosperma* | *Cladium mariscoides* | *Carex buxbaumii* |
| *Phragmites australis* | *Carex stricta* | *Carex trisperma* | *Calamagrostis stricta* | *Carex pellita* |
| *Potamogeton crispus* | *Deschampsia caespitosa* | *Chamaedaphne calyculata* | *Calamagrostis canadensis* | *Carex sartwellii* |
| *Ranunculus ficaria* | *Eleocharis rostellata* | *Decodon verticillatus* | *Quercus palustris* | *Gentiana andrewsii* |
| *Rhamnus frangula* | *Eriophorum viridicarinatum* | *Eriophorum virginicum* | | *Helianthus grosseserratus* |
| *Typha angustifolia* | *Gentianopsis spp.* | *Larix laricina* | | *Liatris spicata* |
| *Typha xglauca* | *Lobelia kalmii* | *Nemopanthus mucronatus* | | *Lysimachia quadriflora* |
| | *Parnassia glauca* | *Schechzeria palustris* | | *Lythrum alatum* |
| | *Potentilla fruticosa* | *Sphagnum spp.* | | *Pycnanthemum virginianum* |
| | *Rhamnus alnifolia* | *Vaccinium macrocarpon* | | *Silphium terebinthinaceum* |
| | *Rhynchospora capillacea* | *Vaccinium corymbosum* | | *Sorghastrum nutans* |
| | *Salix candida* | *Vaccinium oxycoccos* | | *Spartina pectinata* |
| | *Salix myricoides* | *Woodwardia virginica* | | *Solidago riddellii* |
| | *Salix serissima* | *Xyris difformis* | | |
| | *Solidago ohioensis* | | | |
| | *Tofieldia glutinosa* | | | |
| | *Triglochin maritimum* | | | |
| | *Triglochin palustre* | | | |

**End of Narrative Rating. Begin Quantitative Rating on next page.**

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | Date: 8/26/2016 |
|---|---|---|

| max 6 pts. | subtotal | Metric 1. Wetland Area (size). |
|---|---|---|
| 0 | 0 | |

Select one size class and assign score.

| | |
|---|---|
| | >50 acres (>20.2ha) (6 pts) |
| | 25 to <50 acres (10.1 to <20.2ha) (5 pts) |
| | 10 to <25 acres (4 to <10.1 ha) (4 pts) |
| | 3 to <10 acres (1.2 to <4 ha) (3 pts) |
| | 0.3 to < 3 acres (012 to <1.2ha) (2 pts) |
| | 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) |
| 0 | <0.1 acres (0.04ha) (0 pts) |

| max 14 pts. | subtotal | Metric 2. Upland buffers and surrounding land use. |
|---|---|---|
| 8 | 8 | |

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

| | |
|---|---|
| | WIDE. Buffers average 50m (164 ft) or more around wetland perimeter (7) |
| 4 | MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) |
| | NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) |
| | VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) |

2b. Intensity of surrounding land use. Select one or double check and average.

| | |
|---|---|
| | VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) |
| 5 | LOW. Old field (>10 years), shrubland, young second growth forest. (5) |
| 3 | MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) |
| | HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) |

| max 30 pts. | subtotal | Metric 3. Hydrology. |
|---|---|---|
| 10 | 18 | |

3a. Sources of Water. Score all that apply.

| | |
|---|---|
| | High pH groundwater (5) |
| | Other groundwater (3) |
| 1 | Precipitation (1) |
| | Seasonal/Intermittent surface water (3) |
| | Perennial surface water (lake or stream (5) |

3b. Connectivity. Score all that apply.

| | |
|---|---|
| | 100 year floodplain (1) |
| | Between stream/lake and other human use (1) |
| 1 | Part of wetland/upland (e.g. forest), complex (1) |
| | Part of riparian or upland corridor (1) |

3c. Maximum water depth. Select only one and assign score.

| | |
|---|---|
| | >0.7 (27.6in) (3) |
| | 0.4 to 0.7m (15.7 to 27.6in) (2) |
| 1 | <0.4m (<15.7in) (1) |

ı/saturation. Score one or dbl check.

| | |
|---|---|
| | Semi- to permanently inundated/saturated (4) |
| | Regularly inundated/saturated (3) |
| 2 | Seasonally inundated (2) |
| | Seasonally saturated in upper 30cm (12in) (1) |

3e. Modifications to natural hydrologic regime. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (12) |
| 7 | Recovered (7) |
| 3 | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| X | ditch | | point source (nonstormwater) |
| | tile | X | filling/grading |
| | dike | | road bed/RR track |
| | weir | X | dredging |
| | stormwater input | | Other: Mowed Easement |

| max 20 pts. | subtotal | Metric 4. Habitat Alternation and Development. |
|---|---|---|
| 13 | 31 | |

4a. Substrate disturbance. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (4) |
| 3 | Recovered (3) |
| | Recovering (2) |
| | Recent or no recovery (1) |

4b. Habitat development. Select only one and assign score.

| | |
|---|---|
| | Excellent (7) |
| | Very good (6) |
| | Good (5) |
| 4 | Moderately good (4) |
| | Fair (3) |
| | Poor to fair (2) |
| | Poor (1) |

4c. Habitat alteration. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (9) |
| 6 | Recovered (6) |
| | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| | mowing | X | shrub/sapling removal |
| | grazing | | herbaceous/aquatic bed removal |
| | clearcutting | | sedimentation |
| X | selective cutting | X | dredging |
| | woody debris removal | | farming |
| | toxic pollutants | | nutrient enrichment |

31
subtotal this page

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | Date: 8/26/2016 |
|---|---|---|

31
subtotal first page

## Metric 5. Special Wetlands.

0 max 10 pts. | 31 subtotal

Check all that apply and score as indicated.

| | |
|---|---|
| | Bog (10) |
| | Fen (10) |
| | Old growth forest (10) |
| | Mature forested wetland (5) |
| | Lake Erie coastal/tributary wetland -unrestricted hydrology (10) |
| | Lake Erie coastal/tributary wetland-restricted hydrology (5) |
| | Lake Plain Sand Prairies (Oak Openings) (10) |
| | Relict Wet Prairies (10) |
| | Known occurrence state/federal threatened or endangered species (10) |
| | Significant migratory songbird/water fowl habitat or usage (10) |
| | Category 1 Wetland. See Question 1 Qualitative Rating (-10) |

## Metric 6. Plant communities, interspersion, microtopography.

4 max 20 pts. | 35 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

| | |
|---|---|
| | Aquatic bed |
| | Emergent |
| | Shrub |
| 2 | Forest |
| | Mudflats |
| | Open Water |
| | Other_____ |

6b. Horizontal (plan view) Interspersion.
Score only one.

| | |
|---|---|
| | High (5) |
| | Moderately high (4) |
| | Moderate (3) |
| | Moderately low (2) |
| | Low (1) |
| 0 | None (0) |

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

| | |
|---|---|
| | Extensive >75% cover (-5) |
| | Moderate 25-75% cover (-3) |
| -1 | Sparse 5-25% cover (-1) |
| | Nearly absent <5% cover (0) |
| | Absent (1) |

6d. Microtopography.
Score all present using 0 to 3 scale.

| | |
|---|---|
| 1 | Vegetated hummucks/tussucks |
| 2 | Coarse woody debris >15cm (6in) |
| 0 | Standing dead >25cm (10in) dbh |
| 0 | Amphibian breeding pools |

**Vegatation Community Cover Scale**

| | |
|---|---|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality. |
| 3 | Present and comprises significant part, or more, of wetland's vegetation and is of high quality. |

**Narrative Description of Vegetation Quality**

| | |
|---|---|
| low | Low spp diversity and/or predominance of nonnative or disturbance tolerant native species |
| mod | Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened, or endangered spp |
| high | A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp |

**Mudflat and Open Water Class Quality**

| | |
|---|---|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

**Microtopography Cover Scale**

| | |
|---|---|
| 0 | Absent |
| 1 | Present in very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

35 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM score calibration report for the scoring breakpoints between categories at the following address: http://epa.state.oh.us/dsw/401/401.html

# ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|---|---|---|---|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | |
| | Metric 2. Buffers and surrounding land use | 8 | |
| | Metric 3. Hydrology | 10 | |
| | Metric 4. Habitat | 13 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 4 | |
| | TOTAL SCORE | 35 | Category based on score breakpoints<br>Modified 2 |

**Complete Wetland Categorization Worksheet**.

# Wetland Categorization Worksheet

| Choices | Circle one | | Evaluation of Categorization Result of ORAM |
|---|---|---|---|
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10 | YES<br><br>Wetland is categorized as a Category 3 wetland | NO | Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM |
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 1, 8b, 9b, 9e, 11 | YES<br><br>Wetland should be evaluated for possible Category 3 status | NO | Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category. |
| Did you answer "Yes" to<br><br>Narrative Rating No. 5 | YES<br><br>Wetland is categorized as a Category 1 wetland | NO | Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM |
| Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland? | YES<br><br>Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands? | YES<br><br>Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES<br><br>Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | NO<br><br>Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided. |

**Final Category**

| Choose one | Category 1 | Category 2 | Category 3 |
|---|---|---|---|

## End of Ohio Rapid Assessment Method for Wetlands.

# Background Information

| | |
|---|---|
| **Name:** | Laura Sayre |
| **Date:** | 8/26/2016 |
| **Affiliation:** | EnviroScience, Inc. |
| **Address:** | 5070 Stow Road, Stow Ohio 44224 |
| **Phone Number:** | 330-688-0111 |
| **e-mail address:** | LSayre@EnviroScienceInc.com |
| **Name of Wetland:** | W-7 and W-8 |
| **Vegetation Communit(ies):** | PEM/PSS/PFO |
| **HGM Class(es):** | Depression |

**Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.**

Please refer to site wetlands and water resources map.

| | |
|---|---|
| Lat/Long or UTM Coordinate | 41.1456067N, -80.845488W |
| USGS Quad Name | Warren |
| County | Trumbull |
| Township | Lordstown Township |
| Section and Subsection | |
| Hydrologic Unit Code | 05030103 |
| Site Visit | 8/2016 |
| National Wetland Inventory Map | attached |
| Ohio Wetland Inventory Map | |
| Soil Survey | attached |
| Delineation report/map | attached |

| | |
|---|---|
| **Name of Wetland:** | W-7 and W-8 |
| **Wetland Size (acres, hectares):** | W-7 = 12.848 ac. onsite; W-8 = 0.218 ac. |

**Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.**

Please refer to site wetlands and water resources map.

**Comments, Narrative Discussion, Justification of Category Changes:**

| | | | |
|---|---|---|---|
| **Final score :** | 44 | **Category:** | Modified 2 |

# Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|---|---|---|---|
| **Step 1** | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| **Step 2** | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | X | |
| **Step 3** | Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary. | X | |
| **Step 4** | Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes. | X | |
| **Step 5** | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | X | |
| **Step 6** | Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications. | X | |

**End of Scoring Boundary Determination. Begin Narrative Rating on next page.**

# Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| # | Question | Circle one | |
|---|---|---|---|
| 1 | **Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 2 | NO<br><br>Go to Question 2 |
| 2 | **Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 3 | NO<br><br>Go to Question 3 |
| 3 | **Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 4 | NO<br><br>Go to Question 4 |
| 4 | **Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 5 | NO<br><br>Go to Question 5 |
| 5 | **Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES<br><br>Wetland is a Category 1 wetland<br><br>Go to Question 6 | NO<br><br>Go to Question 6 |
| 6 | **Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 7 | NO<br><br>Go to Question 7 |
| 7 | **Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 8a | NO<br><br>Go to Question 8a |
| 8a | **"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 8b | NO<br><br>Go to Question 8b |

| | | | |
|---|---|---|---|
| **8b** | **Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | YES<br><br>Wetland should be evaluated for possible Category 3 status.<br><br>Go to Question 9a | NO<br><br>Go to Question 9a |
| **9a** | **Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish? | YES<br><br>Go to Question 9b | NO<br><br>Go to Question 10 |
| **9b** | Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 9c |
| **9c** | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation. | YES<br><br>Go to Question 9d | NO<br><br>Go to Question 10 |
| **9d** | Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 10 | NO<br><br>Go to Question 9e |
| **9e** | Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 10 |
| **10** | **Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality. | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 11 | NO<br><br>Go to Question 11 |
| **11** | **Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Complete Quantitative Rating | NO<br><br>Complete Quantitative Rating |

**Table 1. Characteristic plant species.**

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|---|---|---|---|---|
| *Lythrum salicaria* | *Zygadenus elegans var. glaucus* | *Calla palustris* | *Carex cryptolepis* | *Calamagrostis canadensis* |
| *Myriophyllum spicatum* | *Cacalia plantaginea* | *Carex atlantica var. capillacea* | *Carex lasiocarpa* | *Calamogrostis stricta* |
| *Najas minor* | *Carex flava* | *Carex echinata* | *Carex stricta* | *Carex atherodes* |
| *Phalaris arundinacea* | *Carex sterilis* | *Carex oligosperma* | *Cladium mariscoides* | *Carex buxbaumii* |
| *Phragmites australis* | *Carex stricta* | *Carex trisperma* | *Calamagrostis stricta* | *Carex pellita* |
| *Potamogeton crispus* | *Deschampsia caespitosa* | *Chamaedaphne calyculata* | *Calamagrostis canadensis* | *Carex sartwellii* |
| *Ranunculus ficaria* | *Eleocharis rostellata* | *Decodon verticillatus* | *Quercus palustris* | *Gentiana andrewsii* |
| *Rhamnus frangula* | *Eriophorum viridicarinatum* | *Eriophorum virginicum* | | *Helianthus grosseserratus* |
| *Typha angustifolia* | *Gentianopsis spp.* | *Larix laricina* | | *Liatris spicata* |
| *Typha xglauca* | *Lobelia kalmii* | *Nemopanthus mucronatus* | | *Lysimachia quadriflora* |
| | *Parnassia glauca* | *Schechzeria palustris* | | *Lythrum alatum* |
| | *Potentilla fruticosa* | *Sphagnum spp.* | | *Pycnanthemum virginianum* |
| | *Rhamnus alnifolia* | *Vaccinium macrocarpon* | | *Silphium terebinthinaceum* |
| | *Rhynchospora capillacea* | *Vaccinium corymbosum* | | *Sorghastrum nutans* |
| | *Salix candida* | *Vaccinium oxycoccos* | | *Spartina pectinata* |
| | *Salix myricoides* | *Woodwardia virginica* | | *Solidago riddellii* |
| | *Salix serissima* | *Xyris difformis* | | |
| | *Solidago ohioensis* | | | |
| | *Tofieldia glutinosa* | | | |
| | *Triglochin maritimum* | | | |
| | *Triglochin palustre* | | | |

**End of Narrative Rating. Begin Quantitative Rating on next page.**

W-7 and W-8

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | Date: 8/26/2016 |
|---|---|---|

| 4 | 4 |
|---|---|
| max 6 pts. | subtotal |

## Metric 1. Wetland Area (size).

Select one size class and assign score.

| | |
|---|---|
| | >50 acres (>20.2ha) (6 pts) |
| | 25 to <50 acres (10.1 to <20.2ha) (5 pts) |
| 4 | 10 to <25 acres (4 to <10.1 ha) (4 pts) |
| | 3 to <10 acres (1.2 to <4 ha) (3 pts) |
| | 0.3 to < 3 acres (012 to <1.2ha) (2 pts) |
| | 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) |
| | <0.1 acres (0.04ha) (0 pts) |

| 8 | 12 |
|---|---|
| max 14 pts. | subtotal |

## Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

| | |
|---|---|
| | WIDE. Buffers average 50m (164 ft) or more around wetland perimeter (7) |
| 4 | MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) |
| | NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) |
| | VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) |

2b. Intensity of surrounding land use. Select one or double check and average.

| | |
|---|---|
| | VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) |
| 5 | LOW. Old field (>10 years), shrubland, young second growth forest. (5) |
| 3 | MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) |
| | HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) |

| 10 | 22 |
|---|---|
| max 30 pts. | subtotal |

## Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

| | |
|---|---|
| | High pH groundwater (5) |
| | Other groundwater (3) |
| 1 | Precipitation (1) |
| | Seasonal/Intermittent surface water (3) |
| | Perennial surface water (lake or stream (5) |

3b. Connectivity. Score all that apply.

| | |
|---|---|
| | 100 year floodplain (1) |
| | Between stream/lake and other human use (1) |
| 1 | Part of wetland/upland (e.g. forest), complex (1) |
| | Part of riparian or upland corridor (1) |

3c. Maximum water depth. Select only one and assign score.

| | |
|---|---|
| | >0.7 (27.6in) (3) |
| | 0.4 to 0.7m (15.7 to 27.6in) (2) |
| 1 | <0.4m (<15.7in) (1) |

ı/saturation. Score one or dbl check.

| | |
|---|---|
| | Semi- to permanently inundated/saturated (4) |
| | Regularly inundated/saturated (3) |
| 2 | Seasonally inundated (2) |
| | Seasonally saturated in upper 30cm (12in) (1) |

3e. Modifications to natural hydrologic regime. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (12) |
| 7 | Recovered (7) |
| 3 | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| X | ditch | | point source (nonstormwater) |
| | tile | X | filling/grading |
| | dike | X | road bed/RR track |
| | weir | X | dredging |
| | stormwater input | X | Other: Mowed Easement |

| 14 | 36 |
|---|---|
| max 20 pts. | subtotal |

## Metric 4. Habitat Alternation and Development.

4a. Substrate disturbance. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (4) |
| 3 | Recovered (3) |
| | Recovering (2) |
| | Recent or no recovery (1) |

4b. Habitat development. Select only one and assign score.

| | |
|---|---|
| | Excellent (7) |
| | Very good (6) |
| 5 | Good (5) |
| | Moderately good (4) |
| | Fair (3) |
| | Poor to fair (2) |
| | Poor (1) |

4c. Habitat alteration. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (9) |
| 6 | Recovered (6) |
| | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| X | mowing | X | shrub/sapling removal |
| | grazing | | herbaceous/aquatic bed removal |
| X | clearcutting | | sedimentation |
| X | selective cutting | X | dredging |
| | woody debris removal | | farming |
| | toxic pollutants | | nutrient enrichment |

| 36 |
|---|
| subtotal this page |

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | Date: 8/26/2016 |
|---|---|---|

36
subtotal first page

## Metric 5. Special Wetlands.

0 max 10 pts. | 36 subtotal

Check all that apply and score as indicated.

| | |
|---|---|
| | Bog (10) |
| | Fen (10) |
| | Old growth forest (10) |
| | Mature forested wetland (5) |
| | Lake Erie coastal/tributary wetland -unrestricted hydrology (10) |
| | Lake Erie coastal/tributary wetland-restricted hydrology (5) |
| | Lake Plain Sand Prairies (Oak Openings) (10) |
| | Relict Wet Prairies (10) |
| | Known occurrence state/federal threatened or endangered species (10) |
| | Significant migratory songbird/water fowl habitat or usage (10) |
| | Category 1 Wetland. See Question 1 Qualitative Rating (-10) |

## Metric 6. Plant communities, interspersion, microtopography.

8 max 20 pts. | 44 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

| | |
|---|---|
| | Aquatic bed |
| 2 | Emergent |
| 0 | Shrub |
| 2 | Forest |
| | Mudflats |
| | Open Water |
| | Other_____ |

6b. Horizontal (plan view) Interspersion.
Score only one.

| | |
|---|---|
| | High (5) |
| | Moderately high (4) |
| | Moderate (3) |
| 2 | Moderately low (2) |
| | Low (1) |
| | None (0) |

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

| | |
|---|---|
| | Extensive >75% cover (-5) |
| -3 | Moderate 25-75% cover (-3) |
| | Sparse 5-25% cover (-1) |
| | Nearly absent <5% cover (0) |
| | Absent (1) |

6d. Microtopography.
Score all present using 0 to 3 scale.

| | |
|---|---|
| 1 | Vegetated hummucks/tussucks |
| 2 | Coarse woody debris >15cm (6in) |
| 1 | Standing dead >25cm (10in) dbh |
| 1 | Amphibian breeding pools |

**Vegatation Community Cover Scale**

| | |
|---|---|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality. |
| 3 | Present and comprises significant part, or more, of wetland's vegetation and is of high quality. |

**Narrative Description of Vegetation Quality**

| | |
|---|---|
| low | Low spp diversity and/or predominance of nonnative or disturbance tolerant native species |
| mod | Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened, or endangered spp |
| high | A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp |

**Mudflat and Open Water Class Quality**

| | |
|---|---|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

**Microtopography Cover Scale**

| | |
|---|---|
| 0 | Absent |
| 1 | Present in very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

44 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM score calibration report for the scoring breakpoints between categories at the following address: http://epa.state.oh.us/dsw/401/401.html

# ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|---|---|---|---|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 4 | |
| | Metric 2. Buffers and surrounding land use | 8 | |
| | Metric 3. Hydrology | 10 | |
| | Metric 4. Habitat | 14 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 8 | |
| | TOTAL SCORE | 44 | Category based on score breakpoints<br>Modified 2 |

**Complete Wetland Categorization Worksheet**.

# Wetland Categorization Worksheet

| Choices | Circle one | | Evaluation of Categorization Result of ORAM |
|---|---|---|---|
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10 | YES<br><br>Wetland is categorized as a Category 3 wetland | NO | Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM |
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 1, 8b, 9b, 9e, 11 | YES<br><br>Wetland should be evaluated for possible Category 3 status | NO | Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category. |
| Did you answer "Yes" to<br><br>Narrative Rating No. 5 | YES<br><br>Wetland is categorized as a Category 1 wetland | NO | Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM |
| Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland? | YES<br><br>Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands? | YES<br><br>Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES<br><br>Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | NO<br><br>Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided. |

**Final Category**

| Choose one | Category 1 | Category 2 | Category 3 |
|---|---|---|---|

## End of Ohio Rapid Assessment Method for Wetlands.

# Background Information

| | |
|---|---|
| **Name:** | Laura Sayre |
| **Date:** | 8/26/2016 |
| **Affiliation:** | EnviroScience, Inc. |
| **Address:** | 5070 Stow Road, Stow Ohio 44224 |
| **Phone Number:** | 330-688-0111 |
| **e-mail address:** | LSayre@EnviroScienceInc.com |
| **Name of Wetland:** | W-10 |
| **Vegetation Communit(ies):** | PSS |
| **HGM Class(es):** | Depression |

**Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.**

Please refer to site wetlands and water resources map.

| | |
|---|---|
| Lat/Long or UTM Coordinate | 41.147762N, -80.845802W |
| USGS Quad Name | Warren |
| County | Trumbull |
| Township | Lordstown Township |
| Section and Subsection | |
| Hydrologic Unit Code | 05030103 |
| Site Visit | 8/2016 |
| National Wetland Inventory Map | attached |
| Ohio Wetland Inventory Map | |
| Soil Survey | attached |
| Delineation report/map | attached |

| | |
|---|---|
| **Name of Wetland:** | W-10 |
| **Wetland Size (acres, hectares):** | 0.107 ac. |

**Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.**

Please refer to site wetlands and water resources map.

**Comments, Narrative Discussion, Justification of Category Changes:**

| | | | |
|---|---|---|---|
| **Final score :** | 21.5 | **Category:** | 1 |

# Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|---|---|---|---|
| **Step 1** | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| **Step 2** | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | X | |
| **Step 3** | Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary. | X | |
| **Step 4** | Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes. | X | |
| **Step 5** | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | | X |
| **Step 6** | Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications. | | X |

**End of Scoring Boundary Determination. Begin Narrative Rating on next page.**

# Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| # | Question | Circle one | |
|---|---|---|---|
| 1 | **Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 2 | NO<br><br>Go to Question 2 |
| 2 | **Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 3 | NO<br><br>Go to Question 3 |
| 3 | **Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 4 | NO<br><br>Go to Question 4 |
| 4 | **Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 5 | NO<br><br>Go to Question 5 |
| 5 | **Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES<br><br>Wetland is a Category 1 wetland<br><br>Go to Question 6 | NO<br><br>Go to Question 6 |
| 6 | **Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 7 | NO<br><br>Go to Question 7 |
| 7 | **Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 8a | NO<br><br>Go to Question 8a |
| 8a | **"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 8b | NO<br><br>Go to Question 8b |

| | | | |
|---|---|---|---|
| **8b** | **Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | YES<br><br>Wetland should be evaluated for possible Category 3 status.<br><br>Go to Question 9a | NO<br><br>Go to Question 9a |
| **9a** | **Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish? | YES<br><br>Go to Question 9b | NO<br><br>Go to Question 10 |
| **9b** | Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 9c |
| **9c** | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation. | YES<br><br>Go to Question 9d | NO<br><br>Go to Question 10 |
| **9d** | Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 10 | NO<br><br>Go to Question 9e |
| **9e** | Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 10 |
| **10** | **Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality. | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 11 | NO<br><br>Go to Question 11 |
| **11** | **Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Complete Quantitative Rating | NO<br><br>Complete Quantitative Rating |

**Table 1. Characteristic plant species.**

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|---|---|---|---|---|
| *Lythrum salicaria* | *Zygadenus elegans var. glaucus* | *Calla palustris* | *Carex cryptolepis* | *Calamagrostis canadensis* |
| *Myriophyllum spicatum* | *Cacalia plantaginea* | *Carex atlantica var. capillacea* | *Carex lasiocarpa* | *Calamogrostis stricta* |
| *Najas minor* | *Carex flava* | *Carex echinata* | *Carex stricta* | *Carex atherodes* |
| *Phalaris arundinacea* | *Carex sterilis* | *Carex oligosperma* | *Cladium mariscoides* | *Carex buxbaumii* |
| *Phragmites australis* | *Carex stricta* | *Carex trisperma* | *Calamagrostis stricta* | *Carex pellita* |
| *Potamogeton crispus* | *Deschampsia caespitosa* | *Chamaedaphne calyculata* | *Calamagrostis canadensis* | *Carex sartwellii* |
| *Ranunculus ficaria* | *Eleocharis rostellata* | *Decodon verticillatus* | *Quercus palustris* | *Gentiana andrewsii* |
| *Rhamnus frangula* | *Eriophorum viridicarinatum* | *Eriophorum virginicum* | | *Helianthus grosseserratus* |
| *Typha angustifolia* | *Gentianopsis spp.* | *Larix laricina* | | *Liatris spicata* |
| *Typha xglauca* | *Lobelia kalmii* | *Nemopanthus mucronatus* | | *Lysimachia quadriflora* |
| | *Parnassia glauca* | *Schechzeria palustris* | | *Lythrum alatum* |
| | *Potentilla fruticosa* | *Sphagnum spp.* | | *Pycnanthemum virginianum* |
| | *Rhamnus alnifolia* | *Vaccinium macrocarpon* | | *Silphium terebinthinaceum* |
| | *Rhynchospora capillacea* | *Vaccinium corymbosum* | | *Sorghastrum nutans* |
| | *Salix candida* | *Vaccinium oxycoccos* | | *Spartina pectinata* |
| | *Salix myricoides* | *Woodwardia virginica* | | *Solidago riddellii* |
| | *Salix serissima* | *Xyris difformis* | | |
| | *Solidago ohioensis* | | | |
| | *Tofieldia glutinosa* | | | |
| | *Triglochin maritimum* | | | |
| | *Triglochin palustre* | | | |

**End of Narrative Rating. Begin Quantitative Rating on next page.**

ORAM v. 5.0 Field Form Quantitative Rating

# Wetlands W-10

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | Date: 8/26/16 |
|---|---|---|

| max 6 pts. | subtotal |
|---|---|
| 1 | 1 |

## Metric 1. Wetland Area (size).

Select one size class and assign score.

| | |
|---|---|
| | >50 acres (>20.2ha) (6 pts) |
| | 25 to <50 acres (10.1 to <20.2ha) (5 pts) |
| | 10 to <25 acres (4 to <10.1 ha) (4 pts) |
| | 3 to <10 acres (1.2 to <4 ha) (3 pts) |
| | 0.3 to < 3 acres (012 to <1.2ha) (2 pts) |
| 1 | 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) |
| | <0.1 acres (0.04ha) (0 pts) |

| max 14 pts. | subtotal |
|---|---|
| 4 | 5 |

## Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

| | |
|---|---|
| | WIDE. Buffers average 50m (164 ft) or more around wetland perimeter (7) |
| | MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) |
| 1 | NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) |
| | VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) |

2b. Intensity of surrounding land use. Select one or double check and average.

| | |
|---|---|
| | VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) |
| | LOW. Old field (>10 years), shrubland, young second growth forest. (5) |
| 3 | MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) |
| | HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) |

| max 30 pts. | subtotal |
|---|---|
| 10 | 15 |

## Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

| | |
|---|---|
| | High pH groundwater (5) |
| | Other groundwater (3) |
| 1 | Precipitation (1) |
| | Seasonal/Intermittent surface water (3) |
| | Perennial surface water (lake or stream (5) |

3b. Connectivity. Score all that apply.

| | |
|---|---|
| | 100 year floodplain (1) |
| | Between stream/lake and other human use (1) |
| 1 | Part of wetland/upland (e.g. forest), complex (1) |
| | Part of riparian or upland corridor (1) |

on/saturation. Score one or dbl check.

| | |
|---|---|
| | Semi- to permanently inundated/saturated (4) |
| | Regularly inundated/saturated (3) |
| 2 | Seasonally inundated (2) |
| | Seasonally saturated in upper 30cm (12in) (1) |

3c. Maximum water depth. Select only one and assign score.

| | |
|---|---|
| | >0.7 (27.6in) (3) |
| | 0.4 to 0.7m (15.7 to 27.6in) (2) |
| 1 | <0.4m (<15.7in) (1) |

3e. Modifications to natural hydrologic regime. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (12) |
| 7 | Recovered (7) |
| 3 | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| | ditch | | point source (nonstormwater) |
| | tile | X | filling/grading |
| | dike | | road bed/RR track |
| | weir | | dredging |
| | stormwater input | X | Other: ATV paths |

| max 20 pts. | subtotal |
|---|---|
| 8.5 | 23.5 |

## Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (4) |
| 3 | Recovered (3) |
| 2 | Recovering (2) |
| | Recent or no recovery (1) |

4b. Habitat development. Select only one and assign score.

| | |
|---|---|
| | Excellent (7) |
| | Very good (6) |
| | Good (5) |
| | Moderately good (4) |
| 3 | Fair (3) |
| | Poor to fair (2) |
| | Poor (1) |

4c. Habitat alteration. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (9) |
| | Recovered (6) |
| 3 | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| X | mowing | X | shrub/sapling removal |
| | grazing | | herbaceous/aquatic bed removal |
| X | clearcutting | X | sedimentation |
| | selective cutting | | dredging |
| X | woody debris removal | X | farming |
| | toxic pollutants | | nutrient enrichment |

| subtotal this page |
|---|
| 23.5 |

last revised 1 February 2001 jim

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | 12/16/2015 |
|---|---|---|

23.5
subtotal first page

## Metric 5. Special Wetlands.

0 max 10 pts. | 23.5 subtotal

Check all that apply and score as indicated.

| | |
|---|---|
| | Bog (10) |
| | Fen (10) |
| | Old growth forest (10) |
| | Mature forested wetland (5) |
| | Lake Erie coastal/tributary wetland -unrestricted hydrology (10) |
| | Lake Erie coastal/tributary wetland-restricted hydrology (5) |
| | Lake Plain Sand Prairies (Oak Openings) (10) |
| | Relict Wet Prairies (10) |
| | Known occurrence state/federal threatened or endangered species (10) |
| | Significant migratory songbird/water fowl habitat or usage (10) |
| | Category 1 Wetland. See Question 1 Qualitative Rating (-10) |

## Metric 6. Plant communities, interspersion, microtopography.

-2 max 20 pts. | 21.5 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

| | |
|---|---|
| | Aquatic bed |
| 0 | Emergent |
| 1 | Shrub |
| | Forest |
| | Mudflats |
| | Open Water |
| | Other_____ |

6b. Horizontal (plan view) Interspersion.
Score only one.

| | |
|---|---|
| | High (5) |
| | Moderately high (4) |
| | Moderate (3) |
| | Moderately low (2) |
| | Low (1) |
| 0 | None (0) |

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

| | |
|---|---|
| | Extensive >75% cover (-5) |
| -3 | Moderate 25-75% cover (-3) |
| | Sparse 5-25% cover (-1) |
| | Nearly absent <5% cover (0) |
| | Absent (1) |

6d. Microtopography.
Score all present using 0 to 3 scale.

| | |
|---|---|
| 0 | Vegetated hummucks/tussucks |
| 0 | Coarse woody debris >15cm (6in) |
| 0 | Standing dead >25cm (10in) dbh |
| 0 | Amphibian breeding pools |

**Vegatation Community Cover Scale**

| | |
|---|---|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality. |
| 3 | Present and comprises significant part, or more, of wetland's vegetation and is of high quality. |

**Narrative Description of Vegetation Quality**

| | |
|---|---|
| low | Low spp diversity and/or predominance of nonnative or disturbance tolerant native species |
| mod | Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened, or endangered spp |
| high | A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp |

**Mudflat and Open Water Class Quality**

| | |
|---|---|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

**Microtopography Cover Scale**

| | |
|---|---|
| 0 | Absent |
| 1 | Present in very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

21.5 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM score calibration report for the scoring breakpoints between categories at the following address: http://epa.state.oh.us/dsw/401/401.html

# ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|---|---|---|---|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | |
| | Metric 2. Buffers and surrounding land use | 4 | |
| | Metric 3. Hydrology | 10 | |
| | Metric 4. Habitat | 8.5 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | -2 | |
| | TOTAL SCORE | 21.5 | Category based on score breakpoints 1 |

**Complete Wetland Categorization Worksheet**.

# Wetland Categorization Worksheet

| Choices | Circle one | | Evaluation of Categorization Result of ORAM |
|---|---|---|---|
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10 | YES<br><br>Wetland is categorized as a Category 3 wetland | NO | Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM |
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 1, 8b, 9b, 9e, 11 | YES<br><br>Wetland should be evaluated for possible Category 3 status | NO | Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category. |
| Did you answer "Yes" to<br><br>Narrative Rating No. 5 | YES<br><br>Wetland is categorized as a Category 1 wetland | NO | Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM |
| Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland? | YES<br><br>Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands? | YES<br><br>Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES<br><br>Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | NO<br><br>Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided. |

**Final Category**

| Choose one | Category 1 | Category 2 | Category 3 |
|---|---|---|---|

## End of Ohio Rapid Assessment Method for Wetlands.

# Background Information

| | |
|---|---|
| **Name:** | Laura Sayre |
| **Date:** | 8/26/2016 |
| **Affiliation:** | EnviroScience, Inc. |
| **Address:** | 5070 Stow Road, Stow Ohio 44224 |
| **Phone Number:** | 330-688-0111 |
| **e-mail address:** | LSayre@EnviroScienceInc.com |
| **Name of Wetland:** | W-11, W-12, W-13, and W-14 |
| **Vegetation Communit(ies):** | PEM/PFO |
| **HGM Class(es):** | Depression |

**Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.**

Please refer to site wetlands and water resources map.

| | |
|---|---|
| Lat/Long or UTM Coordinate | 41.147749N, -80.844611W |
| USGS Quad Name | Warren |
| County | Trumbull |
| Township | Lordstown Township |
| Section and Subsection | |
| Hydrologic Unit Code | 05030103 |
| Site Visit | 2/2016, 8/2016 |
| National Wetland Inventory Map | attached |
| Ohio Wetland Inventory Map | |
| Soil Survey | attached |
| Delineation report/map | attached |

| | |
|---|---|
| **Name of Wetland:** | W-11, W-12, W-13, and W-14 |
| **Wetland Size (acres, hectares):** | W-11=0.023, W-12=0.032, W-13=0.810, W-14=0.013 ac. |

**Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.**

Please refer to site wetlands and water resources map.

**Comments, Narrative Discussion, Justification of Category Changes:**

| | | | |
|---|---|---|---|
| **Final score :** | 36 | **Category:** | Modified 2 |

# Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|---|---|---|---|
| **Step 1** | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| **Step 2** | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | X | |
| **Step 3** | Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary. | X | |
| **Step 4** | Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes. | X | |
| **Step 5** | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | X | |
| **Step 6** | Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications. | X | |

**End of Scoring Boundary Determination. Begin Narrative Rating on next page.**

# Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| # | Question | Circle one | |
|---|---|---|---|
| 1 | **Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 2 | NO<br><br>Go to Question 2 |
| 2 | **Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 3 | NO<br><br>Go to Question 3 |
| 3 | **Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 4 | NO<br><br>Go to Question 4 |
| 4 | **Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 5 | NO<br><br>Go to Question 5 |
| 5 | **Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES<br><br>Wetland is a Category 1 wetland<br><br>Go to Question 6 | NO<br><br>Go to Question 6 |
| 6 | **Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 7 | NO<br><br>Go to Question 7 |
| 7 | **Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 8a | NO<br><br>Go to Question 8a |
| 8a | **"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 8b | NO<br><br>Go to Question 8b |

| | | | |
|---|---|---|---|
| **8b** | **Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | YES<br><br>Wetland should be evaluated for possible Category 3 status.<br><br>Go to Question 9a | NO<br><br>Go to Question 9a |
| **9a** | **Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish? | YES<br><br>Go to Question 9b | NO<br><br>Go to Question 10 |
| **9b** | Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 9c |
| **9c** | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation. | YES<br><br>Go to Question 9d | NO<br><br>Go to Question 10 |
| **9d** | Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 10 | NO<br><br>Go to Question 9e |
| **9e** | Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 10 |
| **10** | **Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality. | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 11 | NO<br><br>Go to Question 11 |
| **11** | **Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Complete Quantitative Rating | NO<br><br>Complete Quantitative Rating |

**Table 1. Characteristic plant species.**

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|---|---|---|---|---|
| *Lythrum salicaria* | *Zygadenus elegans var. glaucus* | *Calla palustris* | *Carex cryptolepis* | *Calamagrostis canadensis* |
| *Myriophyllum spicatum* | *Cacalia plantaginea* | *Carex atlantica var. capillacea* | *Carex lasiocarpa* | *Calamogrostis stricta* |
| *Najas minor* | *Carex flava* | *Carex echinata* | *Carex stricta* | *Carex atherodes* |
| *Phalaris arundinacea* | *Carex sterilis* | *Carex oligosperma* | *Cladium mariscoides* | *Carex buxbaumii* |
| *Phragmites australis* | *Carex stricta* | *Carex trisperma* | *Calamagrostis stricta* | *Carex pellita* |
| *Potamogeton crispus* | *Deschampsia caespitosa* | *Chamaedaphne calyculata* | *Calamagrostis canadensis* | *Carex sartwellii* |
| *Ranunculus ficaria* | *Eleocharis rostellata* | *Decodon verticillatus* | *Quercus palustris* | *Gentiana andrewsii* |
| *Rhamnus frangula* | *Eriophorum viridicarinatum* | *Eriophorum virginicum* | | *Helianthus grosseserratus* |
| *Typha angustifolia* | *Gentianopsis spp.* | *Larix laricina* | | *Liatris spicata* |
| *Typha xglauca* | *Lobelia kalmii* | *Nemopanthus mucronatus* | | *Lysimachia quadriflora* |
| | *Parnassia glauca* | *Schechzeria palustris* | | *Lythrum alatum* |
| | *Potentilla fruticosa* | *Sphagnum spp.* | | *Pycnanthemum virginianum* |
| | *Rhamnus alnifolia* | *Vaccinium macrocarpon* | | *Silphium terebinthinaceum* |
| | *Rhynchospora capillacea* | *Vaccinium corymbosum* | | *Sorghastrum nutans* |
| | *Salix candida* | *Vaccinium oxycoccos* | | *Spartina pectinata* |
| | *Salix myricoides* | *Woodwardia virginica* | | *Solidago riddellii* |
| | *Salix serissima* | *Xyris difformis* | | |
| | *Solidago ohioensis* | | | |
| | *Tofieldia glutinosa* | | | |
| | *Triglochin maritimum* | | | |
| | *Triglochin palustre* | | | |

**End of Narrative Rating. Begin Quantitative Rating on next page.**

ORAM v. 5.0 Field Form Quantitative Rating

# Wetlands W-11, W-12, W-13, and W-14

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | Date: 8/26/16 |
|---|---|---|

| 2 | 2 |
|---|---|
| max 6 pts. | subtotal |

## Metric 1. Wetland Area (size).

Select one size class and assign score.

| | |
|---|---|
| | >50 acres (>20.2ha) (6 pts) |
| | 25 to <50 acres (10.1 to <20.2ha) (5 pts) |
| | 10 to <25 acres (4 to <10.1 ha) (4 pts) |
| | 3 to <10 acres (1.2 to <4 ha) (3 pts) |
| 2 | 0.3 to < 3 acres (012 to <1.2ha) (2 pts) |
| | 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) |
| | <0.1 acres (0.04ha) (0 pts) |

| 8 | 10 |
|---|---|
| max 14 pts. | subtotal |

## Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

| | |
|---|---|
| | WIDE. Buffers average 50m (164 ft) or more around wetland perimeter (7) |
| 4 | MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) |
| | NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) |
| | VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) |

2b. Intensity of surrounding land use. Select one or double check and average.

| | |
|---|---|
| | VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) |
| 5 | LOW. Old field (>10 years), shrubland, young second growth forest. (5) |
| 3 | MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) |
| | HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) |

| 10 | 20 |
|---|---|
| max 30 pts. | subtotal |

## Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

| | |
|---|---|
| | High pH groundwater (5) |
| | Other groundwater (3) |
| 1 | Precipitation (1) |
| | Seasonal/Intermittent surface water (3) |
| | Perennial surface water (lake or stream (5) |

3b. Connectivity. Score all that apply.

| | |
|---|---|
| | 100 year floodplain (1) |
| | Between stream/lake and other human use (1) |
| 1 | Part of wetland/upland (e.g. forest), complex (1) |
| | Part of riparian or upland corridor (1) |

on/saturation. Score one or dbl check.

| | |
|---|---|
| | Semi- to permanently inundated/saturated (4) |
| | Regularly inundated/saturated (3) |
| 2 | Seasonally inundated (2) |
| | Seasonally saturated in upper 30cm (12in) (1) |

3c. Maximum water depth. Select only one and assign score.

| | |
|---|---|
| | >0.7 (27.6in) (3) |
| | 0.4 to 0.7m (15.7 to 27.6in) (2) |
| 1 | <0.4m (<15.7in) (1) |

3e. Modifications to natural hydrologic regime. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (12) |
| 7 | Recovered (7) |
| 3 | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| | ditch | | point source (nonstormwater) |
| | tile | X | filling/grading |
| | dike | | road bed/RR track |
| | weir | | dredging |
| | stormwater input | X | Other: ATV paths |

| 10 | 30 |
|---|---|
| max 20 pts. | subtotal |

## Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (4) |
| 3 | Recovered (3) |
| 2 | Recovering (2) |
| | Recent or no recovery (1) |

4b. Habitat development. Select only one and assign score.

| | |
|---|---|
| | Excellent (7) |
| | Very good (6) |
| | Good (5) |
| | Moderately good (4) |
| 3 | Fair (3) |
| | Poor to fair (2) |
| | Poor (1) |

4c. Habitat alteration. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (9) |
| 6 | Recovered (6) |
| 3 | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| X | mowing | X | shrub/sapling removal |
| | grazing | | herbaceous/aquatic bed removal |
| X | clearcutting | X | sedimentation |
| | selective cutting | | dredging |
| X | woody debris removal | X | farming |
| | toxic pollutants | | nutrient enrichment |

| 30 |
|---|
| subtotal this page |

last revised 1 February 2001 jim

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | 12/16/2015 |
|---|---|---|

30
subtotal first page

## Metric 5. Special Wetlands.

0 max 10 pts. | 30 subtotal

Check all that apply and score as indicated.

| | |
|---|---|
| | Bog (10) |
| | Fen (10) |
| | Old growth forest (10) |
| | Mature forested wetland (5) |
| | Lake Erie coastal/tributary wetland -unrestricted hydrology (10) |
| | Lake Erie coastal/tributary wetland-restricted hydrology (5) |
| | Lake Plain Sand Prairies (Oak Openings) (10) |
| | Relict Wet Prairies (10) |
| | Known occurrence state/federal threatened or endangered species (10) |
| | Significant migratory songbird/water fowl habitat or usage (10) |
| | Category 1 Wetland. See Question 1 Qualitative Rating (-10) |

## Metric 6. Plant communities, interspersion, microtopography.

6 max 20 pts. | 36 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

| | |
|---|---|
| | Aquatic bed |
| 1 | Emergent |
| 0 | Shrub |
| 2 | Forest |
| | Mudflats |
| | Open Water |
| | Other_____ |

6b. Horizontal (plan view) Interspersion.
Score only one.

| | |
|---|---|
| | High (5) |
| | Moderately high (4) |
| | Moderate (3) |
| | Moderately low (2) |
| 1 | Low (1) |
| | None (0) |

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

| | |
|---|---|
| | Extensive >75% cover (-5) |
| -3 | Moderate 25-75% cover (-3) |
| | Sparse 5-25% cover (-1) |
| | Nearly absent <5% cover (0) |
| | Absent (1) |

6d. Microtopography.
Score all present using 0 to 3 scale.

| | |
|---|---|
| 1 | Vegetated hummucks/tussucks |
| 2 | Coarse woody debris >15cm (6in) |
| 1 | Standing dead >25cm (10in) dbh |
| 1 | Amphibian breeding pools |

**Vegatation Community Cover Scale**

| | |
|---|---|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality. |
| 3 | Present and comprises significant part, or more, of wetland's vegetation and is of high quality. |

**Narrative Description of Vegetation Quality**

| | |
|---|---|
| low | Low spp diversity and/or predominance of nonnative or disturbance tolerant native species |
| mod | Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened, or endangered spp |
| high | A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp |

**Mudflat and Open Water Class Quality**

| | |
|---|---|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

**Microtopography Cover Scale**

| | |
|---|---|
| 0 | Absent |
| 1 | Present in very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

36 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM score calibration report for the scoring breakpoints between categories at the following address: http://epa.state.oh.us/dsw/401/401.html

# ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|---|---|---|---|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 2 | |
| | Metric 2. Buffers and surrounding land use | 8 | |
| | Metric 3. Hydrology | 10 | |
| | Metric 4. Habitat | 10 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 6 | |
| | TOTAL SCORE | 36 | Category based on score breakpoints<br>Modified 2 |

**Complete Wetland Categorization Worksheet**.

# Wetland Categorization Worksheet

| Choices | Circle one | | Evaluation of Categorization Result of ORAM |
|---|---|---|---|
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10 | YES<br><br>Wetland is categorized as a Category 3 wetland | NO | Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM |
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 1, 8b, 9b, 9e, 11 | YES<br><br>Wetland should be evaluated for possible Category 3 status | NO | Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category. |
| Did you answer "Yes" to<br><br>Narrative Rating No. 5 | YES<br><br>Wetland is categorized as a Category 1 wetland | NO | Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM |
| Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland? | YES<br><br>Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands? | YES<br><br>Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES<br><br>Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | NO<br><br>Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided. |

**Final Category**

| Choose one | Category 1 | Category 2 | Category 3 |
|---|---|---|---|

## End of Ohio Rapid Assessment Method for Wetlands.

# Background Information

| | |
|---|---|
| **Name:** | Laura Sayre |
| **Date:** | 8/26/2016 |
| **Affiliation:** | EnviroScience, Inc. |
| **Address:** | 5070 Stow Road, Stow Ohio 44224 |
| **Phone Number:** | 330-688-0111 |
| **e-mail address:** | LSayre@EnviroScienceInc.com |
| **Name of Wetland:** | W-15 and W-16 |
| **Vegetation Communit(ies):** | PFO |
| **HGM Class(es):** | Depression |

**Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.**

Please refer to site wetlands and water resources map.

| | |
|---|---|
| Lat/Long or UTM Coordinate | 41.148139N, -80.843907W |
| USGS Quad Name | Warren |
| County | Trumbull |
| Township | Lordstown Township |
| Section and Subsection | |
| Hydrologic Unit Code | 05030103 |
| Site Visit | 2/2016, 8/2016 |
| National Wetland Inventory Map | attached |
| Ohio Wetland Inventory Map | |
| Soil Survey | attached |
| Delineation report/map | attached |

| | |
|---|---|
| **Name of Wetland:** | W-15 and W-16 |
| **Wetland Size (acres, hectares):** | W-15=0.049 ac., W-16=0.012 ac. onsite |

**Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.**

Please refer to site wetlands and water resources map.

**Comments, Narrative Discussion, Justification of Category Changes:**

| | | | |
|---|---|---|---|
| **Final score :** | 35.5 | **Category:** | Modified 2 |

# Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|---|---|---|---|
| **Step 1** | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| **Step 2** | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | X | |
| **Step 3** | Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary. | X | |
| **Step 4** | Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes. | X | |
| **Step 5** | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | X | |
| **Step 6** | Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications. | X | |

**End of Scoring Boundary Determination. Begin Narrative Rating on next page.**

# Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| # | Question | Circle one | |
|---|---|---|---|
| 1 | **Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 2 | NO<br><br>Go to Question 2 |
| 2 | **Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 3 | NO<br><br>Go to Question 3 |
| 3 | **Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 4 | NO<br><br>Go to Question 4 |
| 4 | **Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 5 | NO<br><br>Go to Question 5 |
| 5 | **Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES<br><br>Wetland is a Category 1 wetland<br><br>Go to Question 6 | NO<br><br>Go to Question 6 |
| 6 | **Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 7 | NO<br><br>Go to Question 7 |
| 7 | **Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 8a | NO<br><br>Go to Question 8a |
| 8a | **"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 8b | NO<br><br>Go to Question 8b |

| | | | |
|---|---|---|---|
| **8b** | **Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | YES<br><br>Wetland should be evaluated for possible Category 3 status.<br><br>Go to Question 9a | NO<br><br>Go to Question 9a |
| **9a** | **Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish? | YES<br><br>Go to Question 9b | NO<br><br>Go to Question 10 |
| **9b** | Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 9c |
| **9c** | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation. | YES<br><br>Go to Question 9d | NO<br><br>Go to Question 10 |
| **9d** | Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 10 | NO<br><br>Go to Question 9e |
| **9e** | Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 10 |
| **10** | **Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality. | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 11 | NO<br><br>Go to Question 11 |
| **11** | **Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Complete Quantitative Rating | NO<br><br>Complete Quantitative Rating |

**Table 1. Characteristic plant species.**

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|---|---|---|---|---|
| *Lythrum salicaria* | *Zygadenus elegans var. glaucus* | *Calla palustris* | *Carex cryptolepis* | *Calamagrostis canadensis* |
| *Myriophyllum spicatum* | *Cacalia plantaginea* | *Carex atlantica var. capillacea* | *Carex lasiocarpa* | *Calamogrostis stricta* |
| *Najas minor* | *Carex flava* | *Carex echinata* | *Carex stricta* | *Carex atherodes* |
| *Phalaris arundinacea* | *Carex sterilis* | *Carex oligosperma* | *Cladium mariscoides* | *Carex buxbaumii* |
| *Phragmites australis* | *Carex stricta* | *Carex trisperma* | *Calamagrostis stricta* | *Carex pellita* |
| *Potamogeton crispus* | *Deschampsia caespitosa* | *Chamaedaphne calyculata* | *Calamagrostis canadensis* | *Carex sartwellii* |
| *Ranunculus ficaria* | *Eleocharis rostellata* | *Decodon verticillatus* | *Quercus palustris* | *Gentiana andrewsii* |
| *Rhamnus frangula* | *Eriophorum viridicarinatum* | *Eriophorum virginicum* | | *Helianthus grosseserratus* |
| *Typha angustifolia* | *Gentianopsis spp.* | *Larix laricina* | | *Liatris spicata* |
| *Typha xglauca* | *Lobelia kalmii* | *Nemopanthus mucronatus* | | *Lysimachia quadriflora* |
| | *Parnassia glauca* | *Schechzeria palustris* | | *Lythrum alatum* |
| | *Potentilla fruticosa* | *Sphagnum spp.* | | *Pycnanthemum virginianum* |
| | *Rhamnus alnifolia* | *Vaccinium macrocarpon* | | *Silphium terebinthinaceum* |
| | *Rhynchospora capillacea* | *Vaccinium corymbosum* | | *Sorghastrum nutans* |
| | *Salix candida* | *Vaccinium oxycoccos* | | *Spartina pectinata* |
| | *Salix myricoides* | *Woodwardia virginica* | | *Solidago riddellii* |
| | *Salix serissima* | *Xyris difformis* | | |
| | *Solidago ohioensis* | | | |
| | *Tofieldia glutinosa* | | | |
| | *Triglochin maritimum* | | | |
| | *Triglochin palustre* | | | |

**End of Narrative Rating. Begin Quantitative Rating on next page.**

ORAM v. 5.0 Field Form Quantitative Rating

# Wetlands W-15 and W-16

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | Date: 8/26/16 |
|---|---|---|

| max 6 pts. | subtotal |
|---|---|
| 1 | 1 |

## Metric 1. Wetland Area (size).

Select one size class and assign score.

| | |
|---|---|
| | >50 acres (>20.2ha) (6 pts) |
| | 25 to <50 acres (10.1 to <20.2ha) (5 pts) |
| | 10 to <25 acres (4 to <10.1 ha) (4 pts) |
| | 3 to <10 acres (1.2 to <4 ha) (3 pts) |
| | 0.3 to < 3 acres (012 to <1.2ha) (2 pts) |
| 1 | 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) |
| | <0.1 acres (0.04ha) (0 pts) |

| max 14 pts. | subtotal |
|---|---|
| 8 | 9 |

## Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

| | |
|---|---|
| | WIDE. Buffers average 50m (164 ft) or more around wetland perimeter (7) |
| 4 | MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) |
| | NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) |
| | VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) |

2b. Intensity of surrounding land use. Select one or double check and average.

| | |
|---|---|
| | VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) |
| 5 | LOW. Old field (>10 years), shrubland, young second growth forest. (5) |
| 3 | MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) |
| | HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) |

| max 30 pts. | subtotal |
|---|---|
| 10 | 19 |

## Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

| | |
|---|---|
| | High pH groundwater (5) |
| | Other groundwater (3) |
| 1 | Precipitation (1) |
| | Seasonal/Intermittent surface water (3) |
| | Perennial surface water (lake or stream (5) |

3b. Connectivity. Score all that apply.

| | |
|---|---|
| | 100 year floodplain (1) |
| | Between stream/lake and other human use (1) |
| 1 | Part of wetland/upland (e.g. forest), complex (1) |
| | Part of riparian or upland corridor (1) |

on/saturation. Score one or dbl check.

| | |
|---|---|
| | Semi- to permanently inundated/saturated (4) |
| | Regularly inundated/saturated (3) |
| 2 | Seasonally inundated (2) |
| | Seasonally saturated in upper 30cm (12in) (1) |

3c. Maximum water depth. Select only one and assign score.

| | |
|---|---|
| | >0.7 (27.6in) (3) |
| | 0.4 to 0.7m (15.7 to 27.6in) (2) |
| 1 | <0.4m (<15.7in) (1) |

3e. Modifications to natural hydrologic regime. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (12) |
| 7 | Recovered (7) |
| 3 | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| | ditch | | point source (nonstormwater) |
| | tile | X | filling/grading |
| | dike | | road bed/RR track |
| | weir | | dredging |
| | stormwater input | X | Other: ATV paths |

| max 20 pts. | subtotal |
|---|---|
| 11.5 | 30.5 |

## Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (4) |
| 3 | Recovered (3) |
| | Recovering (2) |
| | Recent or no recovery (1) |

4b. Habitat development. Select only one and assign score.

| | |
|---|---|
| | Excellent (7) |
| | Very good (6) |
| | Good (5) |
| 4 | Moderately good (4) |
| | Fair (3) |
| | Poor to fair (2) |
| | Poor (1) |

4c. Habitat alteration. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (9) |
| 6 | Recovered (6) |
| 3 | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| | mowing | X | shrub/sapling removal |
| | grazing | | herbaceous/aquatic bed removal |
| | clearcutting | | sedimentation |
| X | selective cutting | | dredging |
| | woody debris removal | | farming |
| | toxic pollutants | | nutrient enrichment |

30.5
subtotal this page

last revised 1 February 2001 jim

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | 12/16/2015 |
|---|---|---|

30.5
subtotal first page

## Metric 5. Special Wetlands.

0 max 10 pts. | 30.5 subtotal

Check all that apply and score as indicated.

| | |
|---|---|
| | Bog (10) |
| | Fen (10) |
| | Old growth forest (10) |
| | Mature forested wetland (5) |
| | Lake Erie coastal/tributary wetland -unrestricted hydrology (10) |
| | Lake Erie coastal/tributary wetland-restricted hydrology (5) |
| | Lake Plain Sand Prairies (Oak Openings) (10) |
| | Relict Wet Prairies (10) |
| | Known occurrence state/federal threatened or endangered species (10) |
| | Significant migratory songbird/water fowl habitat or usage (10) |
| | Category 1 Wetland. See Question 1 Qualitative Rating (-10) |

## Metric 6. Plant communities, interspersion, microtopography.

5 max 20 pts. | 35.5 subtotal

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

| | |
|---|---|
| | Aquatic bed |
| | Emergent |
| | Shrub |
| 2 | Forest |
| | Mudflats |
| | Open Water |
| | Other_____ |

6b. Horizontal (plan view) Interspersion.
Score only one.

| | |
|---|---|
| | High (5) |
| | Moderately high (4) |
| | Moderate (3) |
| | Moderately low (2) |
| | Low (1) |
| 0 | None (0) |

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

| | |
|---|---|
| | Extensive >75% cover (-5) |
| | Moderate 25-75% cover (-3) |
| -1 | Sparse 5-25% cover (-1) |
| | Nearly absent <5% cover (0) |
| | Absent (1) |

6d. Microtopography.
Score all present using 0 to 3 scale.

| | |
|---|---|
| 0 | Vegetated hummucks/tussucks |
| 2 | Coarse woody debris >15cm (6in) |
| 1 | Standing dead >25cm (10in) dbh |
| 1 | Amphibian breeding pools |

**Vegatation Community Cover Scale**

| | |
|---|---|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality. |
| 3 | Present and comprises significant part, or more, of wetland's vegetation and is of high quality. |

**Narrative Description of Vegetation Quality**

| | |
|---|---|
| low | Low spp diversity and/or predominance of nonnative or disturbance tolerant native species |
| mod | Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened, or endangered spp |
| high | A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp |

**Mudflat and Open Water Class Quality**

| | |
|---|---|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

**Microtopography Cover Scale**

| | |
|---|---|
| 0 | Absent |
| 1 | Present in very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

35.5 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM score calibration report for the scoring breakpoints between categories at the following address: http://epa.state.oh.us/dsw/401/401.html

# ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|---|---|---|---|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | |
| | Metric 2. Buffers and surrounding land use | 8 | |
| | Metric 3. Hydrology | 10 | |
| | Metric 4. Habitat | 11.5 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 5 | |
| | TOTAL SCORE | 35.5 | Category based on score breakpoints<br>Modified 2 |

**Complete Wetland Categorization Worksheet**.

# Wetland Categorization Worksheet

| Choices | Circle one | | Evaluation of Categorization Result of ORAM |
|---|---|---|---|
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10 | YES<br><br>Wetland is categorized as a Category 3 wetland | NO | Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM |
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 1, 8b, 9b, 9e, 11 | YES<br><br>Wetland should be evaluated for possible Category 3 status | NO | Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category. |
| Did you answer "Yes" to<br><br>Narrative Rating No. 5 | YES<br><br>Wetland is categorized as a Category 1 wetland | NO | Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM |
| Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland? | YES<br><br>Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands? | YES<br><br>Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES<br><br>Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | NO<br><br>Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided. |

**Final Category**

| Choose one | Category 1 | Category 2 | Category 3 |
|---|---|---|---|

## End of Ohio Rapid Assessment Method for Wetlands.

# Background Information

| | |
|---|---|
| **Name:** | Laura Sayre |
| **Date:** | 8/26/2016 |
| **Affiliation:** | EnviroScience, Inc. |
| **Address:** | 5070 Stow Road, Stow Ohio 44224 |
| **Phone Number:** | 330-688-0111 |
| **e-mail address:** | LSayre@EnviroScienceInc.com |
| **Name of Wetland:** | W-17 |
| **Vegetation Communit(ies):** | PFO |
| **HGM Class(es):** | Depression |

**Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.**

Please refer to site wetlands and water resources map.

| | |
|---|---|
| Lat/Long or UTM Coordinate | 41.14701N, -80.844252W |
| USGS Quad Name | Warren |
| County | Trumbull |
| Township | Lordstown Township |
| Section and Subsection | |
| Hydrologic Unit Code | 05030103 |
| Site Visit | 8/2016 |
| National Wetland Inventory Map | attached |
| Ohio Wetland Inventory Map | |
| Soil Survey | attached |
| Delineation report/map | attached |

| | |
|---|---|
| **Name of Wetland:** | W-17 |
| **Wetland Size (acres, hectares):** | 0.023 ac. |

**Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.**

Please refer to site wetlands and water resources map.

**Comments, Narrative Discussion, Justification of Category Changes:**

| | | | |
|---|---|---|---|
| **Final score :** | 35.5 | **Category:** | Modified 2 |

# Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. *Areas with a high degree of hydrologic interaction should be scored as a single wetland*. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|---|---|---|---|
| **Step 1** | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| **Step 2** | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | X | |
| **Step 3** | Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary. | X | |
| **Step 4** | Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes. | X | |
| **Step 5** | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | | X |
| **Step 6** | Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications. | | X |

**End of Scoring Boundary Determination. Begin Narrative Rating on next page.**

# Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap . The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| # | Question | Circle one | |
|---|---|---|---|
| 1 | **Critical Habitat.** Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 2 | NO<br><br>Go to Question 2 |
| 2 | **Threatened or Endangered Species.** Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 3 | NO<br><br>Go to Question 3 |
| 3 | **Documented High Quality Wetland.** Is the wetland on record in Natural Heritage Database as a high quality wetland? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 4 | NO<br><br>Go to Question 4 |
| 4 | **Significant Breeding or Concentration Area.** Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 5 | NO<br><br>Go to Question 5 |
| 5 | **Category 1 Wetlands.** Is the wetland less than 0.5 hectares (1 acre) in size and **hydrologically isolated** and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by *Phalaris arundinacea, Lythrum salicaria,* or *Phragmites australis*, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES<br><br>Wetland is a Category 1 wetland<br><br>Go to Question 6 | NO<br><br>Go to Question 6 |
| 6 | **Bogs.** Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly *Sphagnum* spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 7 | NO<br><br>Go to Question 7 |
| 7 | **Fens.** Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 8a | NO<br><br>Go to Question 8a |
| 8a | **"Old Growth Forest."** Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs? | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 8b | NO<br><br>Go to Question 8b |

| | | | |
|---|---|---|---|
| **8b** | **Mature forested wetlands**. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | YES<br><br>Wetland should be evaluated for possible Category 3 status.<br><br>Go to Question 9a | NO<br><br>Go to Question 9a |
| **9a** | **Lake Erie coastal and tributary wetlands**. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish? | YES<br><br>Go to Question 9b | NO<br><br>Go to Question 10 |
| **9b** | Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 9c |
| **9c** | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation. | YES<br><br>Go to Question 9d | NO<br><br>Go to Question 10 |
| **9d** | Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present? | YES<br><br>Wetland is a Category 3 wetland<br><br>Go to Question 10 | NO<br><br>Go to Question 9e |
| **9e** | Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities? | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Go to Question 10 | NO<br><br>Go to Question 10 |
| **10** | **Lake Plain Sand Prairies (Oak Openings)** Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality. | YES<br><br>Wetland is a Category 3 wetland.<br><br>Go to Question 11 | NO<br><br>Go to Question 11 |
| **11** | **Relict Wet Prairies**. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | YES<br><br>Wetland should be evaluated for possible Category 3 status<br><br>Complete Quantitative Rating | NO<br><br>Complete Quantitative Rating |

**Table 1. Characteristic plant species.**

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|---|---|---|---|---|
| *Lythrum salicaria* | *Zygadenus elegans var. glaucus* | *Calla palustris* | *Carex cryptolepis* | *Calamagrostis canadensis* |
| *Myriophyllum spicatum* | *Cacalia plantaginea* | *Carex atlantica var. capillacea* | *Carex lasiocarpa* | *Calamogrostis stricta* |
| *Najas minor* | *Carex flava* | *Carex echinata* | *Carex stricta* | *Carex atherodes* |
| *Phalaris arundinacea* | *Carex sterilis* | *Carex oligosperma* | *Cladium mariscoides* | *Carex buxbaumii* |
| *Phragmites australis* | *Carex stricta* | *Carex trisperma* | *Calamagrostis stricta* | *Carex pellita* |
| *Potamogeton crispus* | *Deschampsia caespitosa* | *Chamaedaphne calyculata* | *Calamagrostis canadensis* | *Carex sartwellii* |
| *Ranunculus ficaria* | *Eleocharis rostellata* | *Decodon verticillatus* | *Quercus palustris* | *Gentiana andrewsii* |
| *Rhamnus frangula* | *Eriophorum viridicarinatum* | *Eriophorum virginicum* | | *Helianthus grosseserratus* |
| *Typha angustifolia* | *Gentianopsis spp.* | *Larix laricina* | | *Liatris spicata* |
| *Typha xglauca* | *Lobelia kalmii* | *Nemopanthus mucronatus* | | *Lysimachia quadriflora* |
| | *Parnassia glauca* | *Schechzeria palustris* | | *Lythrum alatum* |
| | *Potentilla fruticosa* | *Sphagnum spp.* | | *Pycnanthemum virginianum* |
| | *Rhamnus alnifolia* | *Vaccinium macrocarpon* | | *Silphium terebinthinaceum* |
| | *Rhynchospora capillacea* | *Vaccinium corymbosum* | | *Sorghastrum nutans* |
| | *Salix candida* | *Vaccinium oxycoccos* | | *Spartina pectinata* |
| | *Salix myricoides* | *Woodwardia virginica* | | *Solidago riddellii* |
| | *Salix serissima* | *Xyris difformis* | | |
| | *Solidago ohioensis* | | | |
| | *Tofieldia glutinosa* | | | |
| | *Triglochin maritimum* | | | |
| | *Triglochin palustre* | | | |

**End of Narrative Rating. Begin Quantitative Rating on next page.**

ORAM v. 5.0 Field Form Quantitative Rating

Wetlands W-17

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | Date: 8/26/16 |
|---|---|---|

| max 6 pts. | subtotal |
|---|---|
| 0 | 0 |

## Metric 1. Wetland Area (size).

Select one size class and assign score.

| | |
|---|---|
| | >50 acres (>20.2ha) (6 pts) |
| | 25 to <50 acres (10.1 to <20.2ha) (5 pts) |
| | 10 to <25 acres (4 to <10.1 ha) (4 pts) |
| | 3 to <10 acres (1.2 to <4 ha) (3 pts) |
| | 0.3 to < 3 acres (012 to <1.2ha) (2 pts) |
| | 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) |
| 0 | <0.1 acres (0.04ha) (0 pts) |

| max 14 pts. | subtotal |
|---|---|
| 9 | 9 |

## Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

| | |
|---|---|
| | WIDE. Buffers average 50m (164 ft) or more around wetland perimeter (7) |
| 4 | MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) |
| | NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) |
| | VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) |

2b. Intensity of surrounding land use. Select one or double check and average.

| | |
|---|---|
| | VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) |
| 5 | LOW. Old field (>10 years), shrubland, young second growth forest. (5) |
| | MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) |
| | HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) |

| max 30 pts. | subtotal |
|---|---|
| 10 | 19 |

## Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

| | |
|---|---|
| | High pH groundwater (5) |
| | Other groundwater (3) |
| 1 | Precipitation (1) |
| | Seasonal/Intermittent surface water (3) |
| | Perennial surface water (lake or stream (5) |

3b. Connectivity. Score all that apply.

| | |
|---|---|
| | 100 year floodplain (1) |
| | Between stream/lake and other human use (1) |
| 1 | Part of wetland/upland (e.g. forest), complex (1) |
| | Part of riparian or upland corridor (1) |

on/saturation. Score one or dbl check.

| | |
|---|---|
| | Semi- to permanently inundated/saturated (4) |
| | Regularly inundated/saturated (3) |
| 2 | Seasonally inundated (2) |
| | Seasonally saturated in upper 30cm (12in) (1) |

3c. Maximum water depth. Select only one and assign score.

| | |
|---|---|
| | >0.7 (27.6in) (3) |
| | 0.4 to 0.7m (15.7 to 27.6in) (2) |
| 1 | <0.4m (<15.7in) (1) |

3e. Modifications to natural hydrologic regime. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (12) |
| 7 | Recovered (7) |
| 3 | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| | ditch | | point source (nonstormwater) |
| | tile | X | filling/grading |
| | dike | | road bed/RR track |
| | weir | | dredging |
| | stormwater input | X | Other: ATV paths |

| max 20 pts. | subtotal |
|---|---|
| 11.5 | 30.5 |

## Metric 4. Habitat Alteration and Development.

4a. Substrate disturbance. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (4) |
| 3 | Recovered (3) |
| | Recovering (2) |
| | Recent or no recovery (1) |

4b. Habitat development. Select only one and assign score.

| | |
|---|---|
| | Excellent (7) |
| | Very good (6) |
| | Good (5) |
| 4 | Moderately good (4) |
| | Fair (3) |
| | Poor to fair (2) |
| | Poor (1) |

4c. Habitat alteration. Score one or double check and average.

| | |
|---|---|
| | None or none apparent (9) |
| 6 | Recovered (6) |
| 3 | Recovering (3) |
| | Recent or no recovery (1) |

Check all disturbances observed

| | | | |
|---|---|---|---|
| | mowing | X | shrub/sapling removal |
| | grazing | | herbaceous/aquatic bed removal |
| | clearcutting | | sedimentation |
| X | selective cutting | | dredging |
| | woody debris removal | | farming |
| | toxic pollutants | | nutrient enrichment |

30.5

subtotal this page

last revised 1 February 2001 jim

| Site: Trumbull Energy Center | Rater(s): Laura Sayre | 12/16/2015 |
|---|---|---|

30.5
subtotal first page

## Metric 5. Special Wetlands.

| max 10 pts. | subtotal |
|---|---|
| 0 | 30.5 |

Check all that apply and score as indicated.

| | |
|---|---|
| | Bog (10) |
| | Fen (10) |
| | Old growth forest (10) |
| | Mature forested wetland (5) |
| | Lake Erie coastal/tributary wetland -unrestricted hydrology (10) |
| | Lake Erie coastal/tributary wetland-restricted hydrology (5) |
| | Lake Plain Sand Prairies (Oak Openings) (10) |
| | Relict Wet Prairies (10) |
| | Known occurrence state/federal threatened or endangered species (10) |
| | Significant migratory songbird/water fowl habitat or usage (10) |
| | Category 1 Wetland. See Question 1 Qualitative Rating (-10) |

## Metric 6. Plant communities, interspersion, microtopography.

| max 20 pts. | subtotal |
|---|---|
| 5 | 35.5 |

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

| | |
|---|---|
| | Aquatic bed |
| | Emergent |
| | Shrub |
| 2 | Forest |
| | Mudflats |
| | Open Water |
| | Other_____ |

6b. Horizontal (plan view) Interspersion.
Score only one.

| | |
|---|---|
| | High (5) |
| | Moderately high (4) |
| | Moderate (3) |
| | Moderately low (2) |
| | Low (1) |
| 0 | None (0) |

6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage.

| | |
|---|---|
| | Extensive >75% cover (-5) |
| | Moderate 25-75% cover (-3) |
| -1 | Sparse 5-25% cover (-1) |
| | Nearly absent <5% cover (0) |
| | Absent (1) |

6d. Microtopography.
Score all present using 0 to 3 scale.

| | |
|---|---|
| 0 | Vegetated hummucks/tussucks |
| 2 | Coarse woody debris >15cm (6in) |
| 1 | Standing dead >25cm (10in) dbh |
| 1 | Amphibian breeding pools |

**Vegatation Community Cover Scale**

| | |
|---|---|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's vegetation and is of moderate quality, or comprises a small part and is of high quality. |
| 3 | Present and comprises significant part, or more, of wetland's vegetation and is of high quality. |

**Narrative Description of Vegetation Quality**

| | |
|---|---|
| low | Low spp diversity and/or predominance of nonnative or disturbance tolerant native species |
| mod | Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare, threatened, or endangered spp |
| high | A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp |

**Mudflat and Open Water Class Quality**

| | |
|---|---|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

**Microtopography Cover Scale**

| | |
|---|---|
| 0 | Absent |
| 1 | Present in very small amounts or if more common of marginal quality |
| 2 | Present in moderate amounts, but not of highest quality or in small amounts of highest quality |
| 3 | Present in moderate or greater amounts and of highest quality |

35.5 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM score calibration report for the scoring breakpoints between categories at the following address: http://epa.state.oh.us/dsw/401/401.html

# ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|---|---|---|---|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | |
| | Metric 2. Buffers and surrounding land use | 9 | |
| | Metric 3. Hydrology | 10 | |
| | Metric 4. Habitat | 11.5 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 5 | |
| | TOTAL SCORE | 35.5 | Category based on score breakpoints<br>Modified 2 |

**Complete Wetland Categorization Worksheet**.

# Wetland Categorization Worksheet

| Choices | Circle one | | Evaluation of Categorization Result of ORAM |
|---|---|---|---|
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10 | YES<br><br>Wetland is categorized as a Category 3 wetland | NO | Is quantitative rating score *less* than the Category 2 scoring threshold (*excluding* gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been over-categorized by the ORAM |
| Did you answer "Yes" to any of the following questions:<br><br>Narrative Rating Nos. 1, 8b, 9b, 9e, 11 | YES<br><br>Wetland should be evaluated for possible Category 3 status | NO | Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category. |
| Did you answer "Yes" to<br><br>Narrative Rating No. 5 | YES<br><br>Wetland is categorized as a Category 1 wetland | NO | Is quantitative rating score *greater* than the Category 2 scoring threshold *(including* any gray zone)? If yes, reevaluate the category of the wetland using the narrative criteria in OAC Rule 3745-1-54(C) and biological and/or functional assessments to determine if the wetland has been under-categorized by the ORAM |
| Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland? | YES<br><br>Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the *"gray zone"* for Category 1 or 2 or Category 2 or 3 wetlands? | YES<br><br>Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit *moderate OR superior* hydrologic OR habitat, OR recreational functions AND the wetland was *not* categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES<br><br>Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | NO<br><br>Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided. |

**Final Category**

| Choose one | Category 1 | Category 2 | Category 3 |
|---|---|---|---|

## End of Ohio Rapid Assessment Method for Wetlands.

**This foregoing document was electronically filed with the Public Utilities**

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Summary: Letter of Notification of Trumbull Energy Center Electrical Interconnection - Part 2 electronically filed by Teresa Orahood on behalf of Sally W. Bloomfield