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Wetlands and Other Waters Delineation Report

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for the

South Field Energy Interconnection Facilities
Madison and Yellow Creek Townships,
Columbiana County, Ohio

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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.

TABLE OF CONTENTS

LIST OF TABLES.....	iii
LIST OF APPENDICES.....	iii
EXECUTIVE SUMMARY.....	iv
1.0 INTRODUCTION AND SITE DESCRIPTION	2
2.0 METHODS.....	2
2.1 WETLANDS	3
2.1.1 Determination.....	3
2.1.1.1 Vegetation.....	4
2.1.1.2 Hydrology.....	6
2.1.1.3 Soils.....	6
2.1.2 ORAM Categorization	6
2.1.3 Cowardin Wetland Classification.....	8
2.2 OTHER WATERS.....	8
2.2.1 Ponds and Lakes	8
2.2.2 Streams and Rivers.....	8
2.2.3 HHEI and QHEI.....	9
3.0 LITERATURE REVIEW.....	10
3.1 USGS TOPOGRAPHIC MAP.....	10
3.2 NWI MAP	10
3.3 COUNTY SOIL SURVEY.....	10
3.4 AERIAL PHOTOGRAPHY	12
3.6 OHIO NATURAL HERITAGE DATABASE	12
3.7 U.S. FISH AND WILDLIFE SERVICE	12
4.0 RESULTS.....	13
4.1 NON-WETLANDS	15
4.2 WETLANDS	16
4.3 STREAMS AND RIVERS.....	20
4.4 PONDS AND LAKES	22
6.0 ASSUMPTIONS AND DISCLAIMERS.....	23
REFERENCES.....	24

LIST OF TABLES

Table 1. Wetland Communities (Cowardin <i>et al.</i> 1979).....	4
Table 2. Disturbed and Successional Non-Wetland Communities.	4
Table 3. Vegetative Strata.....	5
Table 4. Plant Indicators.....	5
Table 5. ORAM Scores and Categories.	7
Table 6. Soil Types Mapped Project Area.	11
Table 7. Sample Plot Results.	13
Table 8. Wetland Results within the Project Area.	16
Table 9. Stream Results within the Project Area.	21
Table 10. Stream Results within the Project Area.	23

LIST OF APPENDICES

Appendix A: Figures

- Figure 1. Location of Project Area on Highway Map of Columbiana County, Ohio.
- Figure 2. USGS 7.5-minute Topographic Map of West Point Quadrangle.
- Figure 3. NWI Map of Project Area (West Point Quadrangle).
- Figure 4. Soil Map of Project Area in Columbiana County, Ohio.
- Figure 5. Site Map of Wetlands and Other Water Resources.

Appendix B: Photographs

Appendix C: Routine Wetland Determination Data Forms

Appendix D: Ohio Rapid Assessment Method for Wetlands v 5.0 Rating Forms

Appendix E: Stream Habitat Forms

Appendix F: Ohio Natural Heritage Database Results

EXECUTIVE SUMMARY

EnviroScience, Inc. performed a delineation of wetlands and other waters in April 2015 and November 2015 for Tetra Tech at the South Field Energy Interconnection Facilities project located in Madison and Yellow Creek Townships, Columbiana County, Ohio. The project area consists of an approximately 38 acre proposed switchyard location with an access drive, a preferred route (along approximately 18,120 feet of proposed utility easement), and an alternate route (along approximately 17,900 feet of proposed utility easement). The total area surveyed for the South Field Energy interconnection project is 240.6 acres. The switchyard is located north of Osborne Road, east of McCormick Run Road, and west of Sines Road. The proposed easements for the preferred and alternate routes are the similar at the eastern and western extents, but they diverge in the center. Both routes start at the proposed switchyard and end east of Hibbetts Mill Road.

Twenty-three (23) wetlands were identified and delineated within the entire project area and account for 3.674 acres. Eleven (11) ephemeral streams, twelve (12) intermittent streams, and two (2) USGS-named perennial streams (Alder Lick Run and Bailey Run) were identified and delineated onsite, accounting for a total of 5,952 linear feet (0.504 acres). Four (4) open water aquatic resources were identified within the project area accounting for an additional 0.470 acres within the project area. The project area consists of maintained lawn, agricultural field, open field, old field, scrub/shrub, and forested vegetation. The surrounding land use consists of agricultural and forested communities, with scattered rural residential properties. Eight (8) distinct vegetative communities were identified within the project area including two (2) wetland community types. The onsite wetland communities include palustrine emergent and palustrine forested vegetative communities.

Wetlands and waterbodies are under the jurisdiction of the Ohio EPA or U.S. Army Corps of Engineers (USACE). No filling may occur within these areas without their written permission. Please contact the Ohio EPA Division of Surface Water at (614) 644-2001 or the Pittsburgh District, U.S. Army Corps of Engineers, at (412) 395-7155 before working in these areas.

1.0 INTRODUCTION AND SITE DESCRIPTION

EnviroScience, Inc. performed a delineation of wetlands and other waters in April 2015 and November 2015 for Tetra Tech at the South Field Energy Interconnection Facilities project located in Madison and Yellow Creek Townships, Columbiana County, Ohio. The project area consists of an approximately 38 acre proposed switchyard location with an access drive, a preferred route (along approximately 18,120 feet of proposed utility easement), and an alternate route (along approximately 17,900 feet of proposed utility easement). The total area surveyed for the South Field Energy interconnection project is 240.6 acres. The switchyard is located north of Osborne Road, east of McCormick Run Road, and west of Sines Road. The proposed easements for the preferred and alternate routes are the similar at the eastern and western extents, but they diverge in the center. Both routes start at the proposed switchyard and end east of Hibbetts Mill Road.

Eight (8) distinct vegetative communities were identified within the project area, including two (2) wetland community types. The project area exists rural residential, agricultural, field, and forested communities. The surrounding area exists as forest and agricultural land with rural residential properties. The project area crosses twenty-three (23) wetlands, eleven (11) ephemeral streams, twelve (12) intermittent streams, two (2) USGS-named perennial streams, and four (4) open water ponds. The onsite open water ponds are located within areas of steep relief that are depicted as strip mines. These areas are no longer active strip mines.

The project area is located in the upper Ohio River drainage basin (Hydrologic #05030101) which drains approximately 640 square miles in northeast Ohio. It is within the Western Allegheny Plateau ecoregion (Woods *et al.* 1998) of Ohio. The project area is located within the area covered by the Eastern Mountains and Piedmont Supplement (USACE 2012) and associated plant list (Lichvar *et al.* 2014). The project 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 U.S. 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 open waters 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: Eastern Mountain and Piedmont 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 project 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 project area. Resources include the following:

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

A field inspection of the project area was then completed to identify major plant communities and to visually locate potential wetlands. The routine, onsite (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 m (20 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 project 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 in. (7.6 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% 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 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 project 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 nonrapid method such as VIBI, assign the wetland to the higher functional category (Category 2)
35-44.9	Modified Category 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 nonrapid 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 U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory 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 project 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 Corps 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.”

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 mi² (2.589 km²) 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 mi² 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 project area.

3.0 LITERATURE REVIEW

3.1 USGS TOPOGRAPHIC MAP

The U.S. Geological Survey (USGS) 7.5-minute topographic series (West Point Quadrangle) is shown on Figure 2 (Appendix A). The preferred and alternate routes are depicted as partially forested. Elevations range from approximately 1,080 feet above mean sea level (AMSL) near onsite ponds and streams to approximately 1,250 feet AMSL in north portion of the proposed switchyard. Two (2) USGS named streams, Alder Lick Run and Bailey Run, are depicted crossing the central portion of the preferred and alternate routes. Three (3) strip mines are shown along the preferred and alternate routes. These strip mines are no longer active.

3.2 NWI MAP

The National Wetlands Inventory (NWI) map (West Point Quadrangle) of the project area is shown on Figure 3 in Appendix A. One (1) palustrine, emergent, persistent, seasonally flooded (PEM1C) is identified within the eastern portion of the preferred and alternate routes. This wetland corresponds to the delineated Wetland W-19. One (1) palustrine, scrub-shrub, broad-leaved deciduous, seasonally flooded (PSS1C) is identified in the eastern portion of the preferred and alternate routes. This wetland was not identified during the field survey. Three (3) palustrine, unconsolidated bottom, intermittently exposed (PUBG) deepwater areas are depicted within the eastern portion of the preferred and alternate routes. These deepwater systems correspond with the delineated Open Waters OW-2, OW-3, and OW-4, which are located in the areas depicted as strip mines.

3.3 COUNTY SOIL SURVEY

The project area is found on the *Soil Survey of Columbiana County, Ohio* and was accessed on the Soil Survey Geographic (SSURGO) Database (USDA Web Soil Survey, 2010) (Figure 4, Appendix A). Fifteen (15) soil types are depicted within the project area. One (1) of the soil types, Holly silt loam (HkA), is considered predominantly hydric within Columbiana County. All soil types are listed in Table 6.

Table 6. Soil Types Mapped Project Area.

Symbol	Soil Type	Status	Common Landform	Percent Hydric	Acres in Project Area	Percent Within Project Area
BkB	Berks channery silt loam, 2 to 6 percent slopes	Not Hydric	Hills	0	6.346	3.7
BkC	Berks channery silt loam, 6 to 15 percent slopes	Not Hydric	Hills	0	43.334	25.5
BkD	Berks channery silt loam, 15 to 25 percent slopes	Not Hydric	Hills	0	18.401	10.8
BkE	Berks channery silt loam, 25 to 40 percent slopes	Not Hydric	Hills	0	29.689	17.5
BpF	Bethesda very channery silt loam, 25 to 70 percent slopes	Not Hydric	N/A	0	8.264	4.9
CoB	Coshocton silt loam, 2 to 6 percent	Not Hydric	Hills	0	5.167	3.0
CoC	Coshocton silt loam, 6 to 15 percent slopes	Not Hydric	Hills	0	16.802	9.9
FbB	Fairpoint very channery silt loam, 0 to 8 percent slopes	Not Hydric	N/A	0	3.654	2.2
FbF	Fairpoint very channery silt loam, 25 to 70 percent slopes	Not Hydric	N/A	0	1.851	1.1
GnB	Gilpin silt loam, 2 to 6 percent slopes	Not Hydric	Hills	0	9.412	5.5
GnC	Gilpin silt loam, 6 to 15 percent slopes	Not Hydric	Hills	0	3.924	2.3
GoC	Gilpin-Coshocton silt loams, 6 to 15 percent slopes	Not Hydric	Hills	0	9.183	5.4
HkA	Holly silt loam, 0 to 2 percent slopes, frequently flooded	Predominantly Hydric	Flood Plain	95	1.020	0.6
KeB	Keene silt loam, 2 to 6 percent slopes	Not Hydric	Hills	0	9.528	5.6
UkC2	Upshur-Berks complex, 6 to 15 percent slopes, eroded	Not Hydric	Hills	0	3.077	1.8

3.4 AERIAL PHOTOGRAPHY

A recent aerial photograph of the project area is shown on Figure 5 (Appendix A). The site is depicted as rural residential, agricultural, and forested land. The project area crosses several roads, including Osbourne Road, Fife Coal Road, Forbes Road, and Hibbets Mill Road. The surrounding land use consists of rural residential, agricultural, and forested land. Several open water areas are visible on the area and appear to correlate to the inactive strip mine locations.

3.5 OHIO NATURAL HERITAGE DATABASE

Data from the Ohio Department of Natural Resources (ODNR) Natural Heritage database was received on May 29, 2015. The Database indicated a record of the bowman's root (*Porteranthus trifolius*), a state threatened species, within a one (1) mile radius of the project area. No unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas are located within the project area.

3.6 U.S. FISH AND WILDLIFE SERVICE

The project area was examined for suitable habitat for federally listed species whose known range includes Columbiana County, Ohio. These species are the federally endangered Indiana bat (*Myotis sodalis*), the federally threatened northern long-eared bat (*Myotis septentrionalis*), the federal species of concern eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), the federal candidate species eastern massasauga (*Sistrurus catenatus catenatus*), 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 project area. Several areas throughout the preferred and alternate routes are forested. Additionally, the southern portion of the proposed switchyard is forested. An in-depth habitat analysis was not performed, however; all onsite 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 project area.

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. The two (2) onsite perennial streams may provide adequate habitat for the eastern hellbender. Further coordination with the USFWS may be required prior to impacting these streams.

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 project area is upland field and forest that is not preferable habitat for the eastern massasauga. The wetlands that are located within the project area are open and do not provide appropriate cover for the eastern massasauga.

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

4.0 RESULTS

Thirty-six (36) sample plots were established within eight (8) natural communities. Two (2) 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
1	1	Agricultural Field				Non-Wetland	SP-1
2	2	PEM	X	X	X	Wetland	W-1
3	3	Forest				Non-Wetland	SP-3
4	4	PFO	X	X	X	Wetland	W-1
5	5	Forest				Non-Wetland	SP-5
6	6	PEM	X	X	X	Wetland	W-2
7	7	Forest				Non-Wetland	SP-7
8	8	PEM	X	X	X	Wetland	W-6
9	9	PEM	X	X	X	Wetland	W-8
10	10	PEM	X	X	X	Wetland	W-7
11	11	Forest				Non-Wetland	SP-11

Sample Plot	Photo*	Community**	Hydrophytic Vegetation	Wetlands Hydrology	Hydric Soil	Status	Location
12	12	Agricultural Field				Non-Wetland	SP-12
13	13	PEM	X	X	X	Wetland	W-9
14	14	Forest				Non-Wetland	SP-14
15	15	Forest	X			Non-Wetland	SP-15
16	16	PFO	X	X	X	Wetland	W-11
17	17	PEM	X	X	X	Wetland	W-12
18	18	Forest				Non-Wetland	SP-18
19	19	PEM	X	X	X	Wetland	W-13
20	20	Scrub-Shrub				Non-Wetland	SP-20
21	21	PEM	X	X	X	Wetland	W-15
22	22	PEM	X	X	X	Wetland	W-15
23	23	Maintained Lawn				Non-Wetland	SP-23
24	24	PEM	X	X	X	Wetland	W-17
25	25	Maintained Lawn				Non-Wetland	SP-25
26	26	Open field				Non-Wetland	SP-26
27	27	PEM	X	X	X	Wetland	W-18
28	28	PEM	X	X	X	Wetland	W-19
29	29	Old Field				Non-Wetland	SP-29
30	30	Open Field				Non-Wetland	SP-30
31	31	PEM	X	X	X	Wetland	W-20
32	32	Forest				Non-Wetland	SP-32
33	33	PEM	X	X	X	Wetland	W-21
34	34	Shrub-Scrub				Non-Wetland	SP-34
35	35	PEM	X	X	X	Wetland	W-22
36	36	PEM	X	X	X	Wetland	W-23

*photos are located in Appendix B

** PEM = Palustrine Emergent; PFO = Palustrine Forested.

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

Six (6) upland communities exist within the project area and include agricultural field, maintained lawn, open field, old field, scrub-shrub, and forest. The agricultural field community is represented by Sample Plots 1 and 12 and are dominated by planted crops such as corn (*Zea mays*, UPL) and alfalfa (*Medicago sativa*, UPL). Purple deadnettle (*Lamium purpureum*, UPL), common dandelion (*Taraxacum officinale*, FACU), and Faber's foxtail (*Setaria faberi*, FACU) are also growing among the planted crop species.

The forested vegetative community is represented by Sample Plots 3, 5, 7, 11, 14, 15, 18, and 32. Typical dominant tree species includes black cherry (*Prunus serotina*, FACU), red maple (*Acer rubrum*, FAC), northern red oak (*Quercus rubra*, FACU), honeylocust (*Gleditsia triacanthos*, FAC), eastern hop-hornbeam (*Ostrya virginiana*, FACU), shagbark hickory (*Carya ovata*, FACU), pin oak (*Quercus palustris*, FACW), and white pine (*Pinus strobus*, FACU). The shrub layer contains tree saplings, American elm (*Ulmus americana*, FACW), swamp white oak (*Quercus bicolor*, FACW), rambler rose (*Rosa multiflora*, FACU), green ash (*Fraxinus pennsylvanica*, FACW), American hornbeam (*Carpinus caroliniana*, FAC), and Allegheny blackberry (*Rubus allegheniensis*, FACU). Dominant species within the herbaceous layer of the forest includes garlic mustard (*Alliaria petiolata*, FACU), spinulose wood fern (*Dryopteris carthusiana*, FAC), Pennsylvania sedge (*Carex pennsylvanica*, UPL), hooded blue violet (*Viola sororia*, FACU), spotted touch-me-not (*Impatiens capensis*, FACW), false mermaidweed (*Floerkea proserpinacoides*, FAC), mayapple (*Podophyllum peltatum*, FACU), and Virginia springbeauty (*Claytonia virginica*, FAC).

The maintained lawn community is represented by Sample Plots 23 and 25 and includes Kentucky bluegrass (*Poa pratensis*, FACU), great plantain (*Plantago major*, FACU), white clover (*Trifolium repens*, FACU), Virginia springbeauty, and common dandelion (*Taraxacum officinale*, FACU) in the herbaceous stratum.

The open field community is represented by Sample Plots 26 and 30 and is dominated by white clover and orchardgrass (*Dactylis glomerata*, FACU). Other species present within the herbaceous layer include common dandelion, English plantain (*Plantago lanceolata*, UPL), Canada goldenrod (*Solidago canadensis*, FACU), wrinkle-leaf goldenrod (*Solidago rugosa*, FACU), oldfield cinquefoil (*Potentilla simplex*, FACU), and

common yarrow (*Achillea millefolium*, FACU). Allegheny blackberry is present in small amounts in the shrub layer.

The old field community is represented by Sample Plot 29. The herbaceous layer was dominated by garlic mustard and Canada goldenrod. The shrub stratum contained rambler rose and the tree layer had small amounts of sugar maple (*Acer saccharum*, FACU), black cherry, and gray birch (*Betula populifolia*, FAC).

Sample Plots 20 and 34 represent the scrub-scrub community and includes black cherry in the tree stratum. The shrub layer is dominated by crabapple (*Malus* sp., NI) and rambler rose. Common herbaceous plants include false mermaidweed, Virginia springbeauty, a grass (*Poa* sp., NI), an aster (*Symphotrichum* sp., NI), common yarrow, and oldfield cinquefoil.

4.2 WETLANDS

Twenty-three (23) wetlands were identified and delineated within the project area. The onsite portion of these wetlands consist of palustrine emergent (PEM) and palustrine forested (PFO) vegetation. The delineated wetlands have been categorized using the Ohio Rapid Assessment Method for Wetlands v.5.0 (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 project area. Wetlands are illustrated on Figure 5 (Appendix A).

Table 8. Wetland Results within the Project Area.

Wetland	Photo*	Cowardin Classification	ORAM Score	ORAM Category	Size within Project Area (acres)	Location within the Project
W-1	37-38	PEM/PFO	47.5	Category 2	0.587	Switchyard, Preferred & Alternate
W-2	39	PEM	40	Modified 2	0.018	Preferred & Alternate
W-3	40	PEM	40	Modified 2	0.002	Preferred & Alternate
W-4	41	PEM	40	Modified 2	0.001	Preferred & Alternate
W-5	42	PEM	40	Modified 2	0.038	Preferred Route
					0.058	Alternate Route
W-6	43	PEM	47	Category 2	0.406	Alternate Route

Wetland	Photo*	Cowardin Classification	ORAM Score	ORAM Category	Size within Project Area (acres)	Location within the Project
W-7	44	PEM	46	1 or 2 gray zone	0.049	Alternate Route
W-8	45	PEM	46	1 or 2 gray zone	0.012	Alternate Route
W-9	46	PEM	46	Category 2	0.040	Preferred Route
W-10	47	PFO	47.5	Category 2	0.101	Preferred Route
W-11	48	PFO	47.5	Category 2	0.510	Preferred Route
W-12	49	PEM	29.5	Category 1	0.012	Preferred Route
W-13	50	PEM	47	Category 2	0.192	Preferred Route
W-14	51	PEM	48	Category 2	0.002	Preferred Route
W-15	52	PEM	23	Category 1	0.158	Preferred Route
					0.261	Alternate Route
W-16	53	PEM	43	Modified 2	0.139	Preferred & Alternate
W-17	54	PEM	43	Modified 2	0.706	Preferred & Alternate
W-18	55	PEM	29	Category 1	0.031	Preferred & Alternate
W-19	56	PEM	40	Modified 2	0.173	Preferred & Alternate
W-20	57	PEM	14	Category 1	0.008	Preferred & Alternate
W-21	58	PEM	32	1 or 2 gray zone	0.019	Preferred & Alternate
W-22	59	PEM	32	1 or 2 gray zone	0.138	Preferred & Alternate
W-23	60	PEM	32	1 or 2 gray zone	0.013	Preferred & Alternate
Total Wetland					3.674	
Total Wetland Preferred Route					2.301	
Total Wetland Alternate Route					2.034	

*photos are located in Appendix B

Wetland W-1 is a floodplain wetland along intermittent Stream S-2a and is comprised of palustrine emergent (PEM) and palustrine forested (PFO) vegetation. Sample Plot 2 and 4 represent these communities, respectively. Sample Plot 2 is dominated by skunk

cabbage (*Symplocarpus foetidus*, OBL) and spotted touch-me-not in the herbaceous layer. The shrub layer contains a small amount of rambler rose. Sample Plot 4 contains red maple, green ash, American elm, and white oak in the tree layer. The herbaceous layer contains rambler rose, hooded blue violet, Carolina spring beauty, spotted lady's thumb (*Persicaria maculosa*, FACW), spotted crane's bill (*Geranium maculatum*, FACU), an unknown moss species, and an unknown aster (*Asteraceae* sp.). This wetland assessed within the range of a Category 2 wetland using the ORAM scoring method. This score is a result of medium upland buffers, moderate surrounding land use, hydrologic sources and degree of saturation, sparse invasive species cover, and wetland microtopographic features.

Wetlands W-2, W-3, W-4, W-5, W-6, W-7, and W-8 are floodplain wetlands, associated with Stream S-5, and dominated by PEM vegetation. These wetlands are represented by Sample Plots 6, 8, 9 and 10. Typical herbaceous vegetation within these wetlands includes spotted touch-me-not, skunk cabbage, fowl manna grass (*Glyceria striata*, OBL), a buttercup (*Ranunculus* sp.), fowl bluegrass (*Poa palustris*, FACW), crooked-stem American-aster (*Symphyotrichum prenanthoides*, FAC), and cream avens (*Geum virginianum*, FAC). Rambler rose is a common shrub within these wetlands. Wetlands W-2, W-3, W-4, W-5 were scored together due to their similar habitat, hydrologic connection, and proximity to one another. Wetland W7 and W-8 were also scored together for the same reasons. All six (6) wetlands assessed within the range of Category 2 wetlands using the ORAM. This score is a result of their medium upland buffers, low surrounding land use, hydrologic features (sources, connectivity, and degree of saturation), small amount of disturbances, and sparse amount of invasive species cover.

Wetlands W-9, W-10 and W-11 are floodplain wetlands along Stream S-13. Wetland W-9 is comprised of PEM vegetation and Wetlands W-10 and W-11 are comprised of PFO vegetation. Sample Plot 13 represents Wetland W-9. Dominant herbaceous vegetation within this wetland includes spotted touch-me-not and false mermaidweed.

Sample Plot 16 represents onsite vegetation within Wetlands W-10 and W-11. The tree stratum is dominated by red maple. Dominant shrub species include gray dogwood (*Cornus racemosa*, FAC) and rambler rose. The herbaceous stratum is dominated by spotted touch-me-not and sensitive fern. Wetland W-10 is adjacent to the intermittent Stream S-13a and is connected to W-11 by ephemeral Stream S-14. Wetland W-11 receives hydrology from ephemeral Stream S-16 and intermittent Stream S-13a. Wetlands W-9, W-10, and W-11 assessed within the range for Category 2 wetlands. This score resulted from wide upland buffers, moderate surrounding land use, low habitat alteration and substrate disturbance, and nearly absent invasive species cover.

Wetland W-12 is a small depressional PEM wetland located on the edge of a residential property south of Osborne Road. Wetland W-12 is represented by Sample Plot 17. This sample plot is dominated by fowl manna grass. Other common herbaceous plants include spotted touch-me-not, skunk cabbage, garden yellow rocket (*Barbarea vulgaris*, FACU), and rough bedstraw (*Galium asprellum*, OBL). This wetland assessed within the range of a Category 1 wetland due to small size, narrow upland buffers, degree of habitat alteration, and habitat recovery from past disturbances.

Wetlands W-13 and W-14 are floodplain PEM wetlands associated with intermittent Streams S-17 and S-18. Sample Plot 19 is representative of onsite vegetation within these wetlands. Dominant herbaceous vegetation includes fowl manna grass, spotted touch-me not, and single-vein sweet flag (*Acorus calamus*, OBL). These wetlands assessed within the range for Category 2 wetlands using the ORAM. Wetland W-13 has narrow upland buffers, moderate surrounding land use, fair habitat development, and evidence of past disturbances.

Wetland W-15 is a swale wetland dominated by PEM vegetation. Wetland W-15 is drained by Stream S-19. Sample Plots 21 and 22 represent typical onsite vegetation within this wetland. Dominant herbaceous plants include false mermaidweed, fowl bluegrass, crooked-stem American-aster, New England American-aster (*Symphyotrichum nove-angiliae*, FACW), purple-leaf willow herb (*Epilobium coloratum*, FACW), and an American-aster (*Symphyotrichum* sp.). This wetland assessed within the range of a Category 1 or 2 gray zone due to its small size, intensity of surrounding land use, and recovery from past disturbances.

Wetlands W-16 and W-17 are PEM wetlands within the Alder Lick Run riparian area. Sample Plot 24 is representative of these wetlands. The dominant herbaceous plants within these wetlands includes lamp rush (*Juncus effusus*, FACW) and shallow sedge (*Carex lurida*, OBL). Other herbaceous plants include common fox sedge (*Carex vulpinoidea*, OBL) and narrow-leaf cattail (*Typha angustifolia*, OBL). This wetland assessed within the range of a Modified 2 wetland. This wetland is relatively large with medium buffers, moderate surrounding land use, and has a high degree of connectivity to jurisdictional streams. However, these wetlands have a moderately high degree of disturbance due to proximate agricultural practices.

Wetland W-18 is a depressional PEM associated with ephemeral Stream S-22. Sample Plot 27 is representative of this wetland. Typical herbaceous vegetation includes single-vein sweetflag, fowl manna grass, spotted-touch-me-not, deer tongue rosette grass (*Dichanthelium clandestinum*, FAC), cottongrass bullrush (*Scirpus cyperinus*, FACW), a sedge (*Carex* sp., NI), and a goldenrod (*Solidago* sp., NI). This wetland scored within the range of an 1 using the ORAM. This score is a result of the small size of the wetland, its

medium buffers with a mixture of high and low surrounding land use, and past disturbance.

Wetland W-19 is a floodplain wetland along Bailey Run. Typical onsite characteristics are represented by Sample Plot 28. The herbaceous layer is dominated by reed canary grass (*Phalaris arundinacea*, FACW), skunk cabbage, and stinging nettle (*Urtica dioica*, FACU). The shrub layer contained rambler rose, an elderberry (*Sambucus* sp.), and Atlantic ninebark (*Physocarpus opuliformis*, FACW). This wetland assessed within the range of a Modified 2 using the ORAM. This is a result of the degree of habitat and substrate disturbance as well as extensive invasive species cover.

Wetland W-20 is a depressional PEM located within an agricultural field. Sample Plot 31 represents typical onsite vegetation. The herbaceous layer is dominated by lamp rush, common fox sedge, and white clover. This wetland assessed within the range of a Category 1 wetland due to its small size, narrow upland buffers, moderately high level of surrounding land use, and degree of disturbance.

Wetlands W-21, W-22, and W-23 are depressional wetlands located within a scrub-shrub setting along the east side of Hibbetts Mill Road. These wetlands are represented by Sample Plots 33, 55, and 36. Dominant vegetation within these wetlands include deer-tongue rosette grass, lamp rush, arrow-leaf tear thumb (*Persicaria sagittata*, OBL), spotted trumpetweed (*Eutrochium maculatum*, FACW), and Allegheny blackberry (*Rubus allegheniensis*, FACU). These wetlands were scored together and assessed within the range of 1 or 2 gray zone. These wetlands were relatively small, with medium buffers, and low surrounding land use. Additionally these wetlands had poor to fair habitat development, are recovering from past disturbances, and scored low with regard to hydrologic characteristics.

4.3 STREAMS AND RIVERS

Two (2) USGS-named perennial streams, twelve (12) intermittent streams, and eleven (11) ephemeral streams were identified and delineated within the project area. The results are depicted in Table 9 and illustrated on Figure 5 (Appendix A). Ephemeral and intermittent streams have been assessed using the Primary Headwater Habitat Evaluation Index (HHEI) and perennial streams were assessed using the Qualitative Habitat Evaluation Index (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. Representative photographs are included in Appendix B, and stream habitat data forms are provided in Appendix E.

Table 9. Stream Results within the Project Area.

Stream	Photos*	Type	Average Bankfull Width (feet)	Average Depth at Time of Survey (inch)	Length Within Project Area (linear feet)	Area Within Project Area (acres)	QHEI/ HHEI Score	Location within the Project	
Alder Lick Run	61	Perennial	10	8	244	0.056	29.5	Preferred & Alternate	
Bailey Run	62	Perennial	8	6	206	0.038	57	Preferred & Alternate	
S-1	63	Ephemeral	1	0	1	0.001	24	Switchyard	
S-2	a	64	Intermittent	3	642	0.044	31	Switchyard, Preferred, & Alternate	
	b				64	0.004		Preferred & Alternate	
S-3	65	Intermittent	2	3	98	0.005	21	Switchyard	
S-4	66	Intermittent	3	2	21	0.001	33	Preferred & Alternate	
S-5	a	67	Intermittent	3	4	860	0.059	50	Preferred & Alternate
	b				260	0.018	Alternate		
	c				187	0.013	Alternate		
	d				18	0.001	Alternate		
	e				11	0.001	Alternate		
S-6	68	Ephemeral	3	0	103	0.007	11	Alternate	
S-7	69	Intermittent	3	0.5	313	0.021	30	Alternate	
S-8	70	Ephemeral	4	0	42	0.004	25	Alternate	
S-9	71	Ephemeral	2	0	273	0.013	30	Alternate	
S-10	72	Intermittent	4	2	416	0.038	39	Alternate	
S-11	73	Ephemeral	2	0	66	0.003	35	Alternate	
S-12	74	Ephemeral	2	0	25	0.001	26	Alternate	
S-13	a	75	Intermittent	4	2	500	0.046	50	Preferred
	b				554	0.051			
S-14	76	Ephemeral	1	0	27	0.001	17	Preferred	
S-15	77	Ephemeral	2	0	31	0.001	17	Preferred	
S-16	78	Ephemeral	1	0	73	0.002	14	Preferred	
S-17	79	Intermittent	4	2	176	0.016	37	Preferred	
S-18	80	Intermittent	4	3	255	0.023	41	Preferred	

Stream	Photos*	Type	Average Bankfull Width (feet)	Average Depth at Time of Survey (inch)	Length Within Project Area (linear feet)	Area Within Project Area (acres)	QHEI/ HHEI Score	Location within the Project
S-19	81	Intermittent	3	3	115	0.008	31	Preferred & Alternate
S-20	a	82	2	0	4	0.001	17	Preferred & Alternate
	b				38	0.002		
S-21	83	Intermittent	2	1	33	0.002	16	Preferred & Alternate
S-22	84	Ephemeral	1	1	68	0.002	16	Preferred & Alternate
S-23	85	Intermittent	4	3	228	0.021	47	Preferred & Alternate
Total Stream					5,952	0.504		
Total Preferred Route					3,034	0.302		
Total Alternate Route					3,775	0.326		

*photos are located in Appendix B

The onsite streams are mostly formed in the either the valleys throughout the project area or are formed as erosional channels along steep hillsides. The stream systems associated with Streams S-2, S-3, S-7, S-9, and S-10 are draining south and west into an unnamed tributary of Yellow Creek. The stream systems associated within Streams S-1, S-13, S-17, and S-19 area draining east and south into Alder Lick Run. Alder Lick Run crosses through the preferred and alternate easement routes and is shown flowing south through an inactive strip mined area. Bailey Run also flows south through the preferred and alternate routes. Bailey Run is also shown within an area described as strip mine. All onsite waters are flowing south an eventually into Little Yellow Creek. Little Yellow Creek is a tributary to the Ohio River. Assessments of the onsite streams ranked Alder Lick Run as 'very poor' and Bailey Run as 'good' using the narrative rating of the QHEI. All other onsite streams were assessed using the HHEI. Assessments of the onsite portions of these streams resulted in Class I and Class II Primary Headwater Habitat streams. None of the onsite streams would be considered high quality or waters of special concern.

4.4 PONDS AND LAKES

A portion of four (4) open water aquatic resources were identified within the project area. The results are depicted in Table 10 and illustrated on Figure 5 (Appendix A).

Table 10. Stream Results within the Project Area.

Open Water	Photo*	Type	Area within project area (acres)
OW-1	86	Lacustrine Open Water	0.015
OW-2	87	Lacustrine Open Water	0.220
OW-3	88	Lacustrine Open Water	0.001
OW-4	89	Lacustrine Open Water	0.234
Total Open Water			0.470

Onsite open water ponds are associated with the inactive strip mine sites. These open water areas are located at the bottoms of steep gorges with rocky slopes.

5.0 ASSUMPTIONS AND DISCLAIMERS

The constant influence of human activity on the project 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 Corps. The report is then valid for a period of five years. Refer to the Corps' Regulatory Guidance Letter # 94-1 (23 May 1994).

REFERENCES

- Anderson, D M. 1982. *Plant Communities of Ohio: A Preliminary Classification and Description*. Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Columbus, Ohio.
- Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classifications of Wetlands and Deepwater Habitats of the United States*. FWS/OBS-79/31. U.S. Department of Interior, Fish and Wildlife Service, Office of Biological Services, Washington, D.C
- Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual* Technical Report Y-87-1. US Army Engineer Waterways Experiment Station, Vicksburg, Mississippi.
- Gordon, R.B. 1966. *Original Vegetation of Ohio at the Time of the Earliest Land Surveys* Bulletin of the Ohio Biological Survey, Vol III, No. 2. The Ohio State University, Columbus
- Gordon, R. B. 1969. *The Natural Vegetation of Ohio in Pioneer Days*. Ohio Biological Survey Bulletin (New Series) 3:1-109.
- Lichvar, R.W., M. Butterwick, N.C. Melvin, and W N. Kirchner. 2014. The National Wetland Plant List. 2014. Update of Wetland Ratings. Phytoneuron 2014-41: 1-42.
- Mack, J.J. 2000. *ORAM v. 5.0 Quantitative Score Calibration*. Ohio Environmental Protection Agency, Division of Surface Water, Wetland Ecology Unit, Columbus, Ohio.
- Mack, J.J. 2001. *Ohio Rapid Assessment Method for Wetlands v. 5.0, User's Manual and Scoring Forms*. Ohio EPA Technical Report WET/2001-1. Ohio Environmental Protection Agency, Division of Surface Water, 401/Wetland Ecology Unit, Columbus, Ohio.
- Munsell Color. 2009. *Munsell Soil Color Charts* (Rev. ed.). Grand Rapids, Michigan.
- Ohio Environmental Protection Agency, 2012. *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams*. Final Version 3.0. Ohio EPA Division of Surface Water, Columbus, Ohio. 117 pp.
- Ohio Environmental Protection Agency, 2006 *Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI)*. Ohio EPA Division of Surface Water, Columbus, Ohio. 26 pp.
- Rapanos vs. United States; June Carabell, et al., Petitioners vs. United States Army Corps of Engineers 547 U.S. 715. 2006.
- Solid Waste Agency of Northern Cook County vs. U.S. Army Corps of Engineers. 531 U.S. 159. 2001.
- U.S. Army Corps of Engineers. 1994. Regulatory Guidance Letter 94-01. Expiration of Geographic Jurisdictional Determinations.
- U.S. Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetlands Delineation Manual: Northcentral and Northeast (version 2.0). Technical Report ERDC/EL TR-12-9 US Army Engineer Research and Development Center, Vicksburg, Mississippi
- U.S. Army Corps of Engineers and U.S. Environmental Protection Agency. 2007. U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook. Washington, D C.
- U.S. Department of Agriculture. 2010. Web Soil Survey. USDA. Natural Resource Conservation Service. <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.
- U.S. Department of Agriculture, Soil Conservation Service. 1982. *National List of Scientific Plant Names*. 1. List of plant names; 2. Synonymy SCS-13 General Notes and Selected References TP-159. U.S. Department of Agriculture, Washington, DC: 416- 438.
- Visual Color Systems. 2004. The Globe Soil Color Book. Mountandale, New York
- Woods, A.J., J.M. Omernick, C.S. Brockman, T.D. Gerber, W.D. Hosteter and S.H. Azevedo. 1998. *Ecoregions of Indiana and Ohio*. U.S. Geological Survey, Denver, Colorado.

Appendix A:
Figures

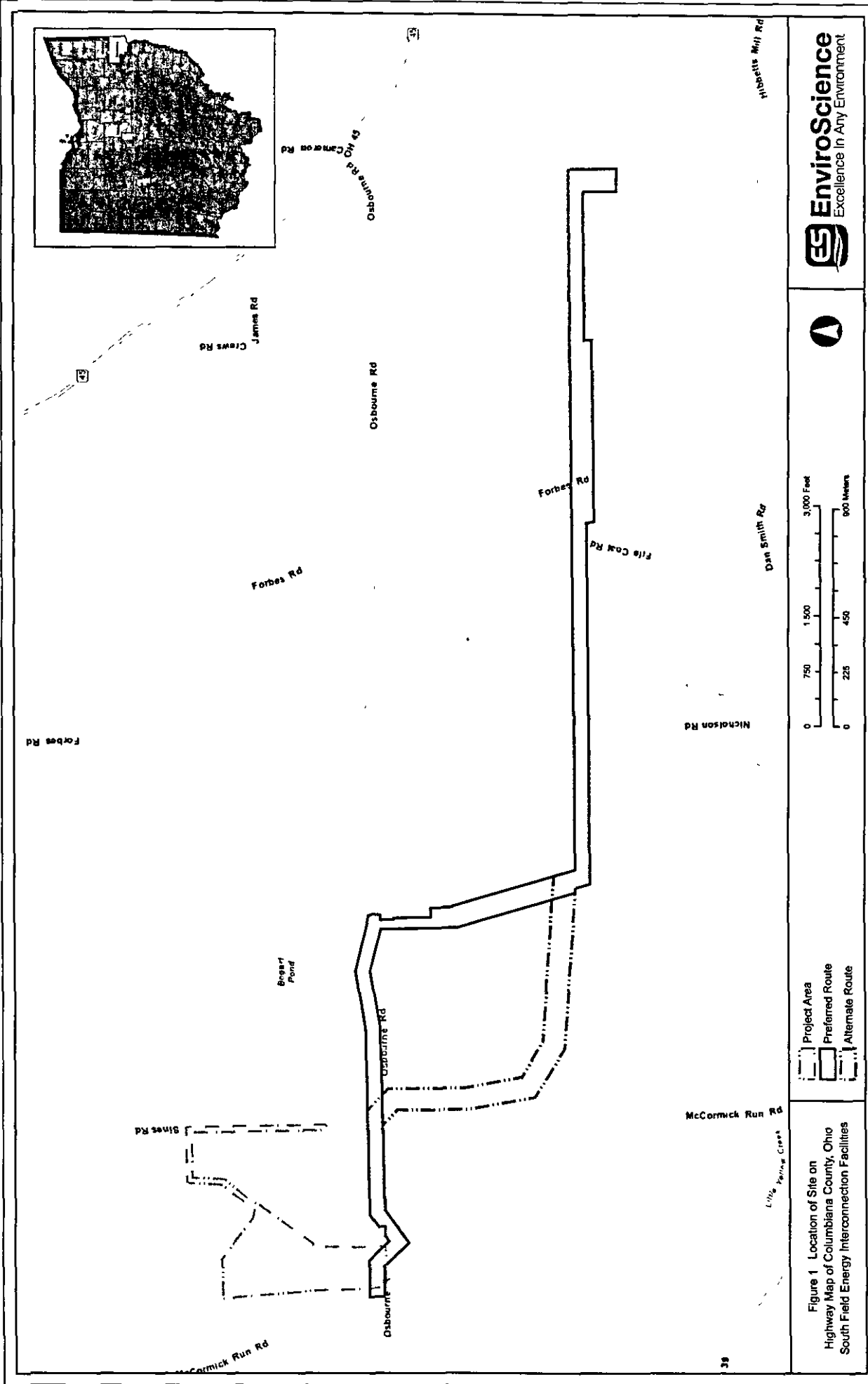




Figure 4
Soil Map of Site in Columbiana County, Ohio
South Field Energy Interconnection Facilities

Switchyard
Alternate Route
Preferred Route

0 750 1500 3000 Feet
0 225 450 900 Meters

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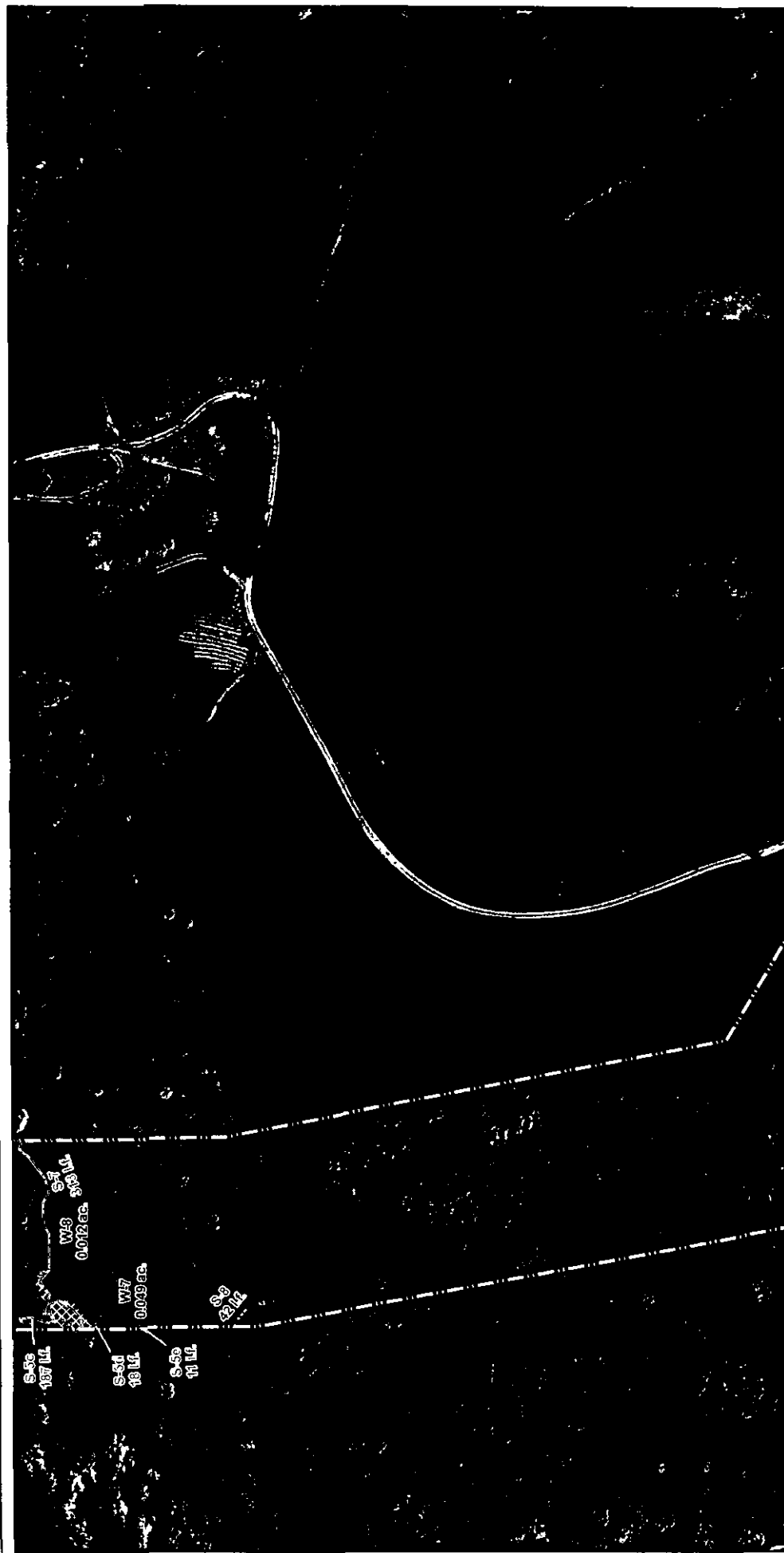
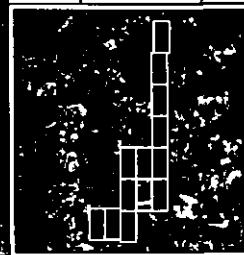


Figure 5.05. Site Map of Wetlands and Other Water Resources
South Field Energy Interconnection Facilities



- Sample Plot
- Culvert
- Stream (Ephemeral)
- Stream (Intermittent)
- Stream (Perennial)
- Stream (Ephemeral) Alt. Route
- Stream (Intermittent) Alt. Route
- Stream (Perennial) Alt. Route
- Open Water
- Wetland (PEM)
- Wetland (PFO)
- Wetland (PEM) Alt. Route
- Switchyard
- Alternate Route
- Preferred Route

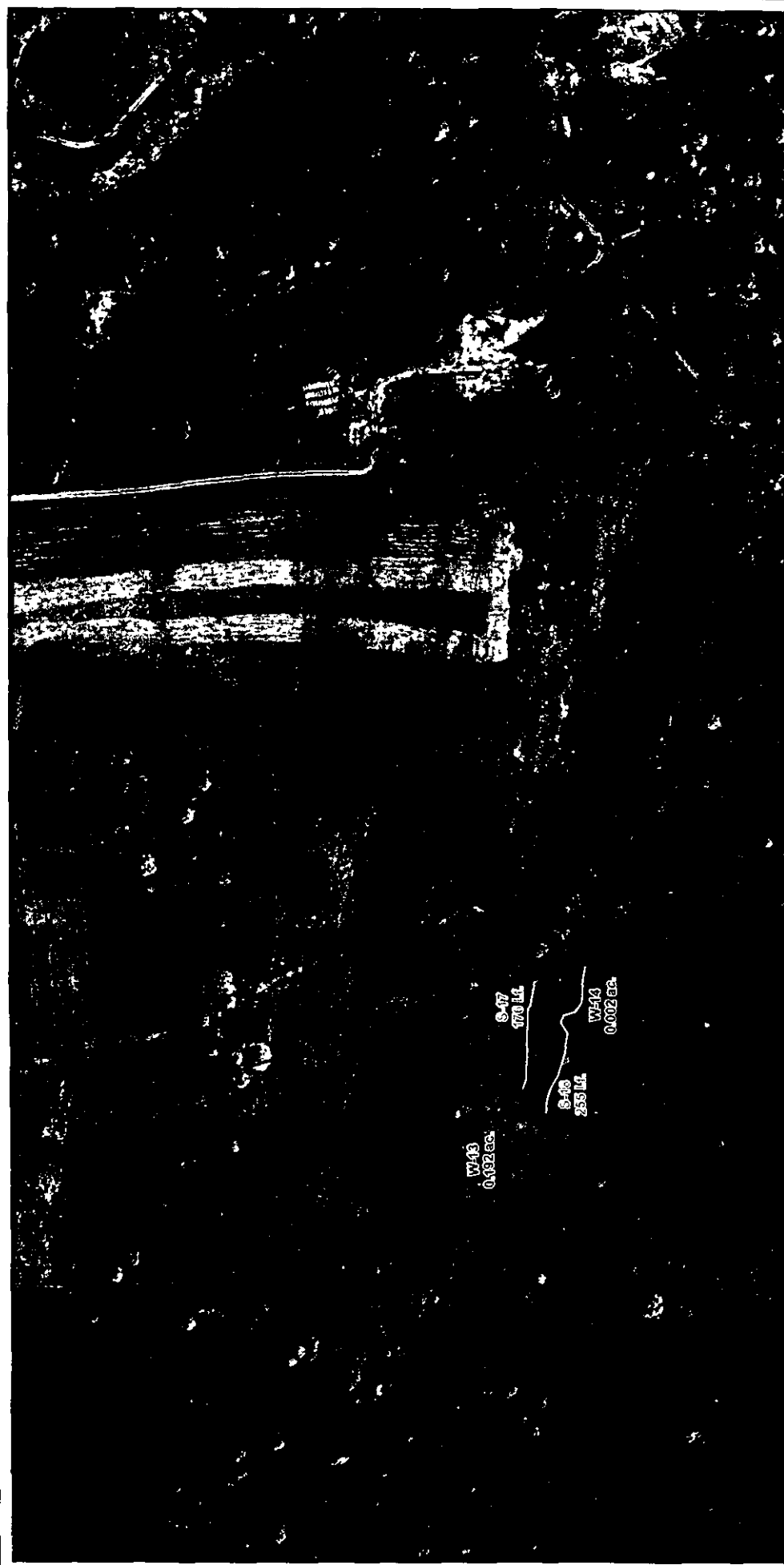
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0 50 100 150 200 250 300 350 400 450 500 Feet

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5.05

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**Figure 5 08 Site Map of Wetlands and Other Water Resources.
South Field Energy Interconnection Facilities.**

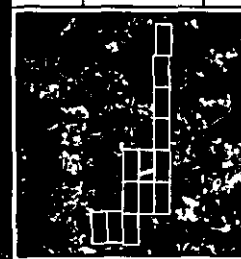


Figure 5 08 Site Map of Wetlands and Other Water Resources,
South Field Energy Interconnection Facilities.

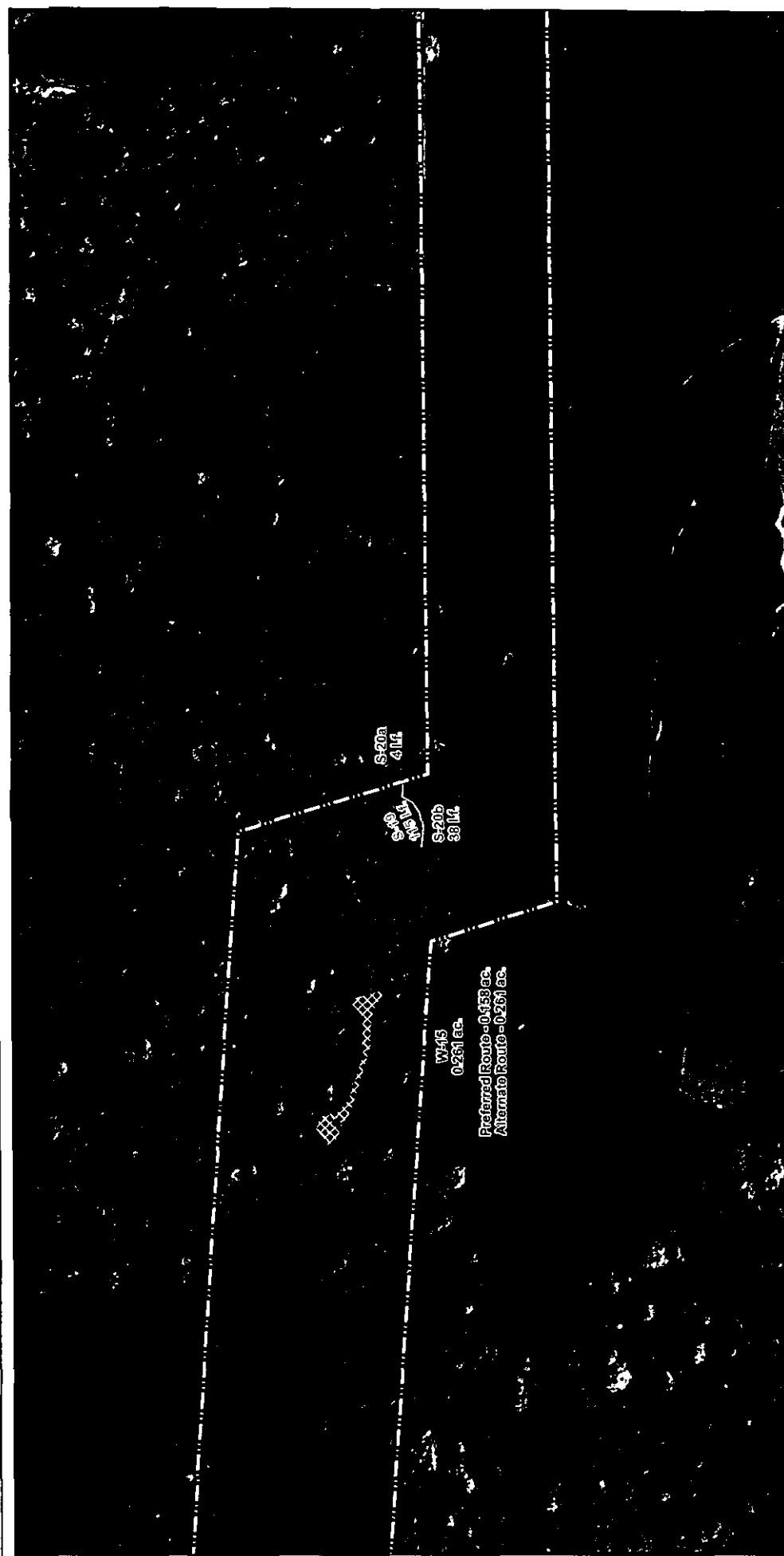
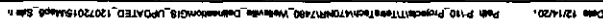


Figure 5.09 Site Map of Wetlands and Other Water Resources
South Field Energy Interconnection Facilities.

	<p> Sample Plot Culvert Stream (Ephemeral) Stream (Intermittent) Stream (Perennial) Stream (Ephemeral) Alt Route Stream (Intermittent) Alt Route Stream (Perennial) Alt Route Open Water Wetland (PEM) Wetland (PFO) Wetland (PEM) Alt Route Switchyard Alternate Route Preferred Route </p>	<p> </p>
--	---	----------

5.09





Assessment Instruments of EFL

Appendix B:
Photographs

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 1. Sample Plot 1 representing agricultural field.

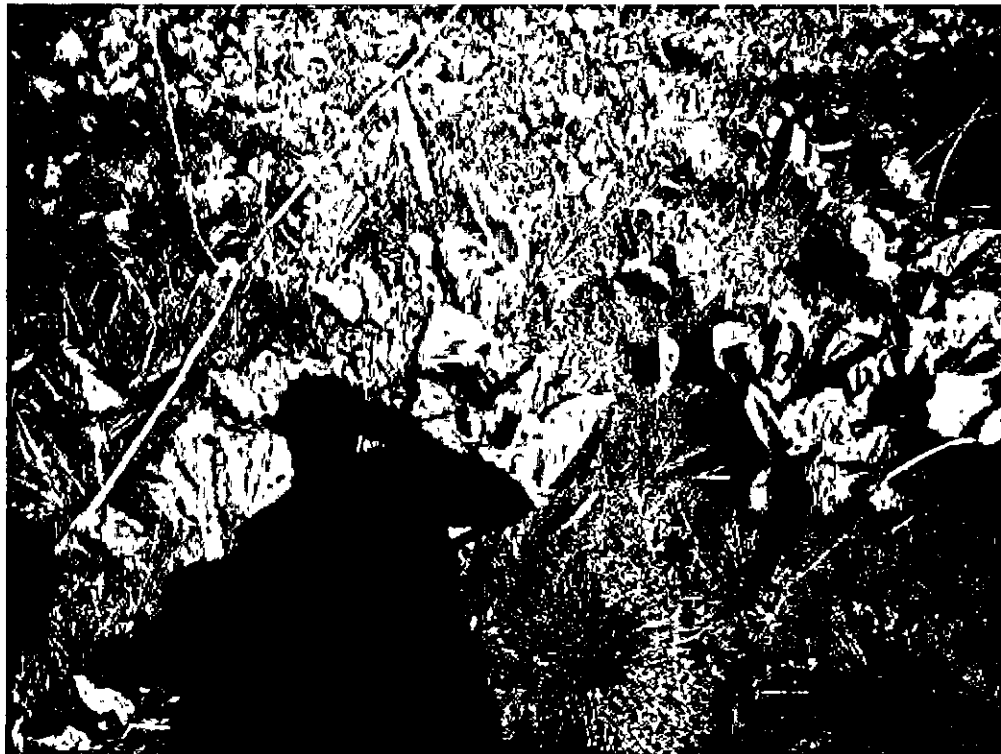


Photo 2. Sample Plot 2 within Wetland W-1.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 3. Sample Plot 3 representing upland forest.



Photo 4. Sample Plot 4, representing a palustrine forested (PFO) vegetated community within Wetland W-1.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 5. Sample Plot 5 representing upland forest.



Photo 6. Sample Plot 6, representing a palustrine emergent vegetative community within Wetland W-2.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 7. Sample Plot 7 representing upland forest.



Photo 8. Sample Plot 8 within Wetland W-6, representing a PEM.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 9. Sample Plot 9 within Wetland W-8.



Photo 10. Sample Plot 10 within Wetland W-7.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 11. Sample Plot 11 representing upland forest.



Photo 12. Sample Plot 12 representing agricultural field dominated by alfalfa (*Medicago sativa*).

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 13. Sample Plot 13 within Wetland W-9.



Photo 14. Sample Plot 14 representing an upland forest.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 15. Sample Plot 15 representing upland forest.



Photo 16. Sample Plot 16 within Wetland W-11.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 17. Sample Plot 17 within Wetland W-12.

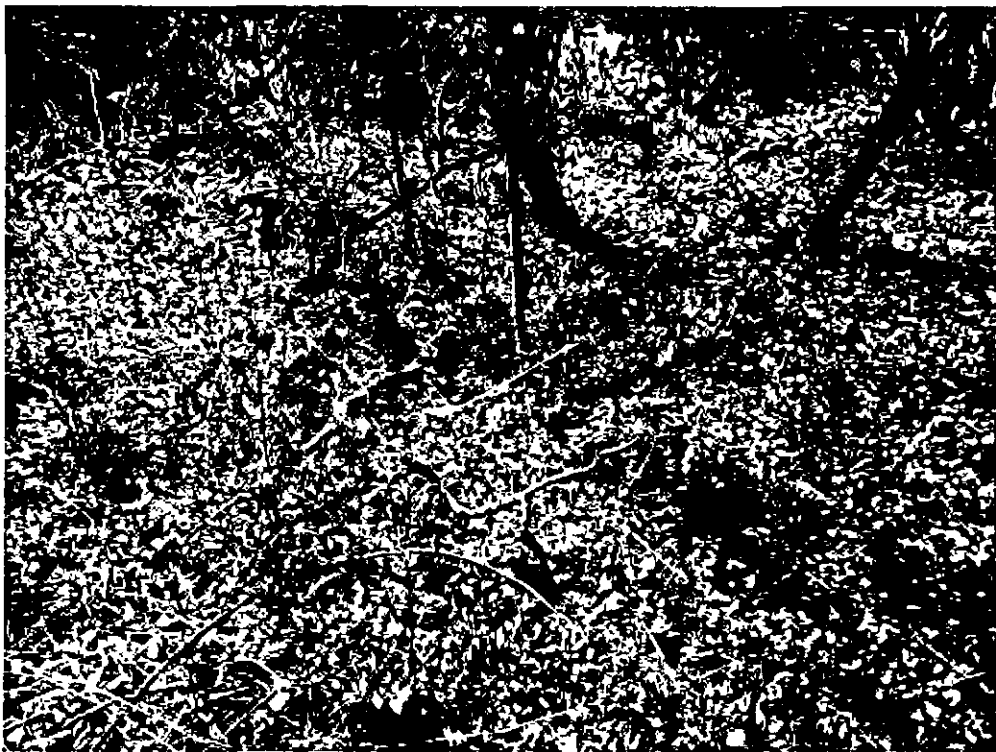


Photo 18. Sample Plot 18 representing a forest.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 19. Sample Plot 19 within Wetland W-13.



Photo 20. Sample Plot 20 representing an upland scrub-shrub community.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 21. Sample Plot 21 within Wetland W-15, a PEM.



Photo 22. Sample Plot 22 within Wetland W-15.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*

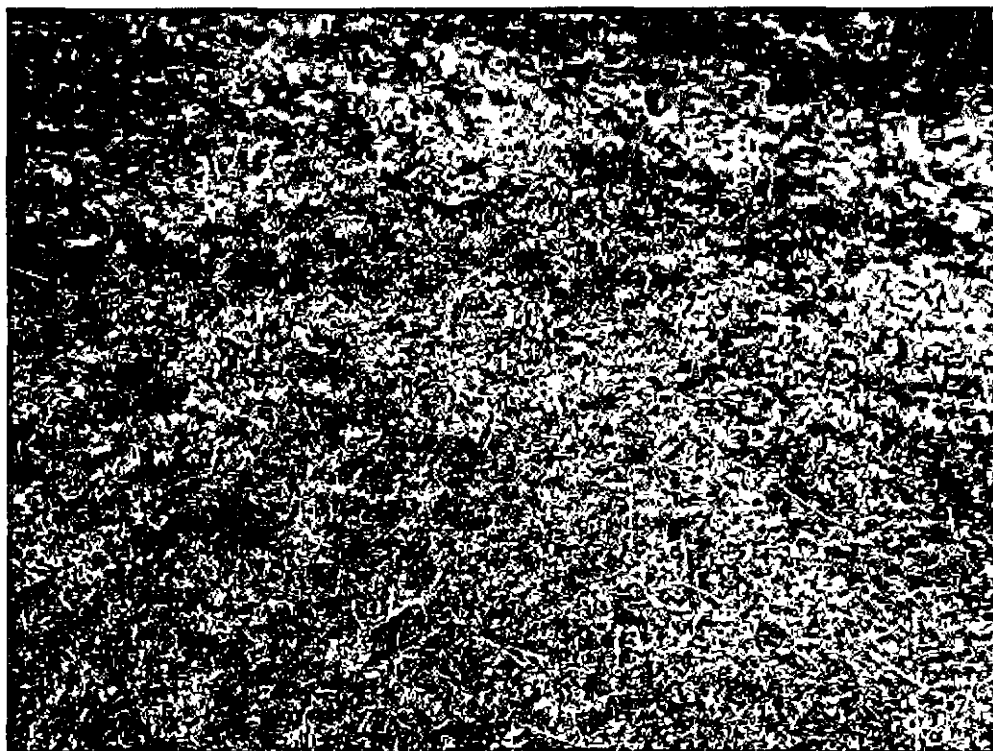


Photo 23. Sample Plot 23 representing a maintained lawn.



Photo 24. Sample Plot 24 within Wetland W-17.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 25. Sample Plot 25 representing a maintained lawn.



Photo 26. Sample Plot 26 representing an open field community.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 27. Sample Plot 27 within Wetland W-18, a PEM.



Photo 28. Sample Plot 28 within Wetland W-19.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 29. Sample Plot 29 representing an old field.



Photo 30. Sample Plot 30 representing an open field.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 31. Sample Plot 31 within Wetland W-20.



Photo 32. Sample Plot 32 representing an upland forest.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*

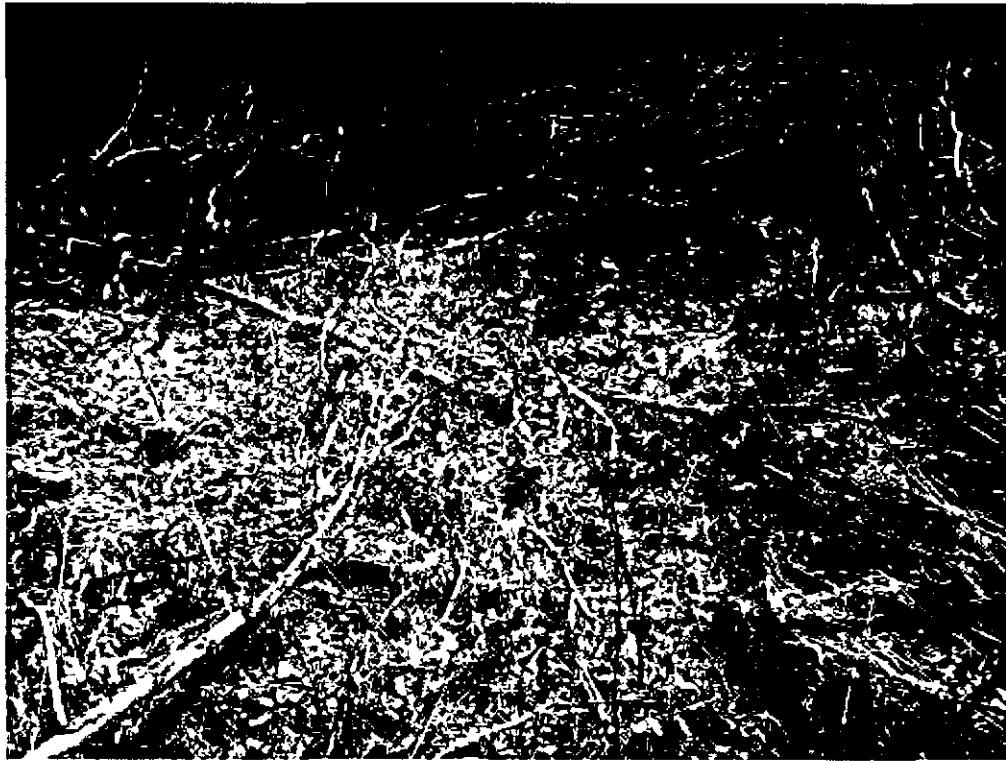


Photo 33. Sample Plot 33 within Wetland W-21.



Photo 34. Sample Plot 34 representing a scrub-shrub community.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 35. Sample Plot 35 within Wetland W-22.



Photo 36. Sample Plot 36 within Wetland W-23.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 37. Wetland W-1 (PEM) facing north.



Photo 38. Wetland W-1 (PFO) facing north.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 39. Wetland W-2 facing east.



Photo 40. Wetland W-3 facing north.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 41. Wetland W-4 facing south.



Photo 42. Wetland W-5 facing south.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 43. Wetland W-6 facing south.



Photo 44. Wetland W-7 facing west.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 45. Wetland W-8 facing northeast.



Photo 46. Wetland W-9 facing east.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*

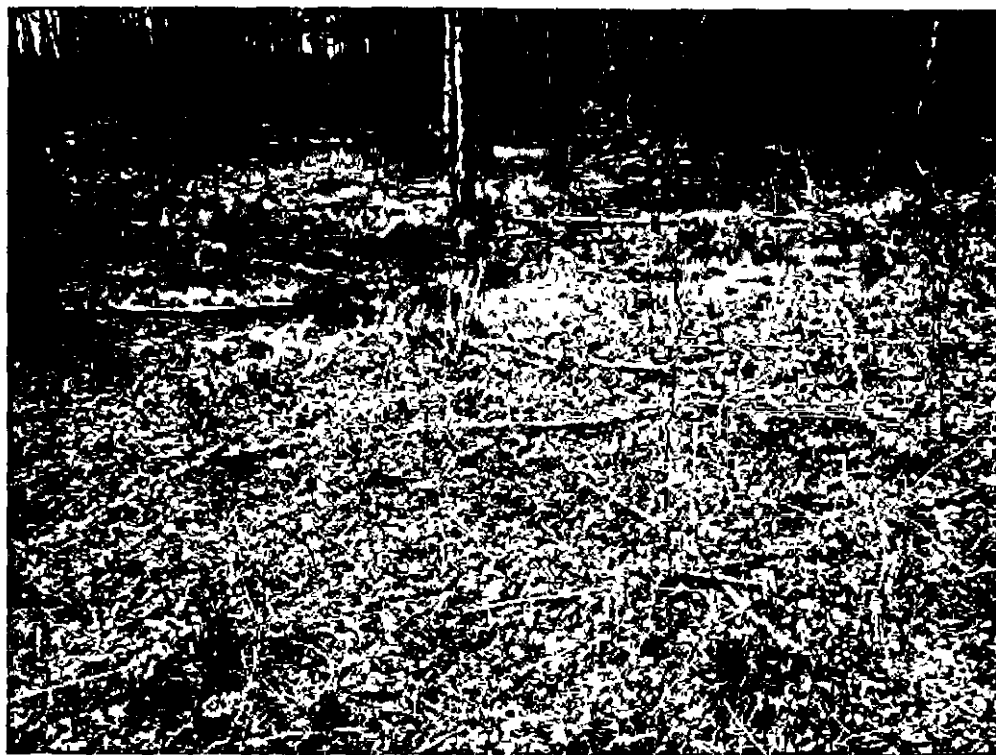


Photo 47. Wetland W-10 facing west.



Photo 48. Wetland W-11 facing southwest.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 49. Wetland W-12 facing northwest.



Photo 50. Wetland W-13 facing north.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 51. Wetland W-14 facing east.



Photo 52. Wetland W-15 facing east.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 53. Wetland W-16 facing east.



Photo 54. Wetland W-17 facing north.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 55. Wetland W-18 facing southwest.



Photo 56. Wetland W-19 facing south.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 57. Wetland W-20 facing northeast.



Photo 58. Wetland W-21 facing west.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 59. Wetland W-22 facing east.



Photo 60. Wetland W-23 facing east.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 61. Alder Lick Run facing north upstream



Photo 62. Bailey Run facing south downstream.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 63. Stream S-1 facing west upstream.



Photo 64. Stream S-2 facing north upstream.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*

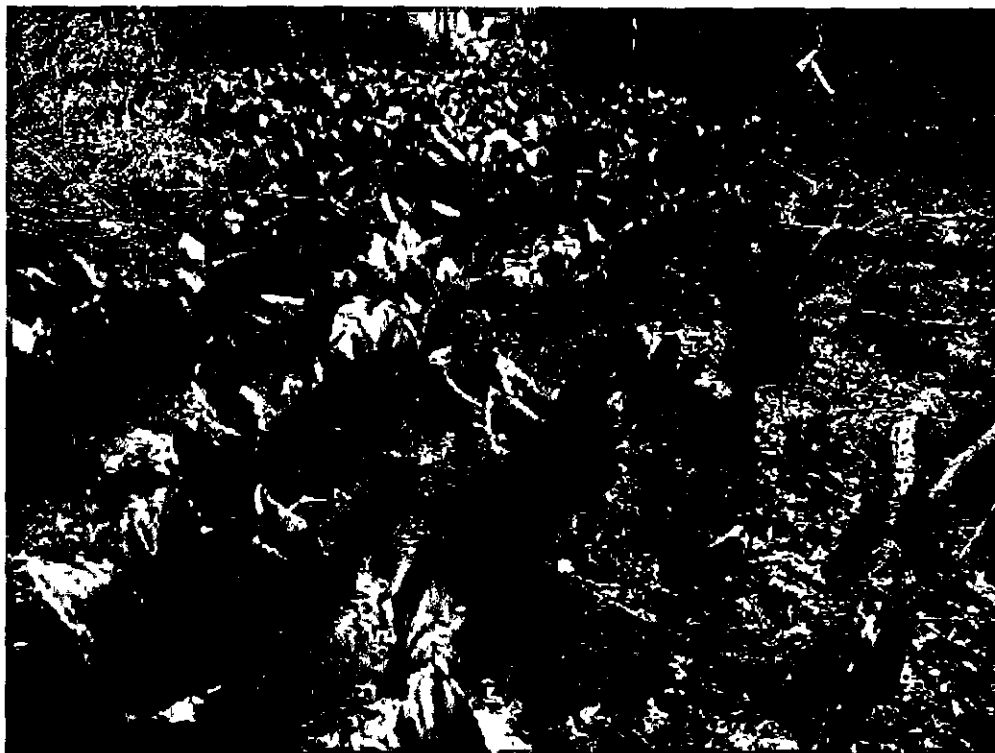


Photo 65. Stream S-3 facing south downstream.



Photo 66. Stream S-4 facing south downstream.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 67. Stream S-5 facing north upstream.



Photo 68. Stream S-6 facing north upstream.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 69. Stream S-7 facing west downstream.



Photo 70. Stream S-8 facing west downstream.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 71. Stream S-9 facing east upstream.



Photo 72. Stream S-10 facing south downstream.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 73. Stream S-11 facing southwest downstream.



Photo 74. Stream S-12 facing north upstream.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 75. Stream S-13 facing west upstream.



Photo 76. Stream S-14 facing west upstream.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 77. Stream S-15 facing south upstream.



Photo 78. Stream S-16 facing southwest upstream.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 79. Stream S-17 facing west upstream.



Photo 80. Stream S-18 facing west upstream.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 81. Stream S-19 facing west upstream.



Photo 82. Stream S-20 facing southwest upstream.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*

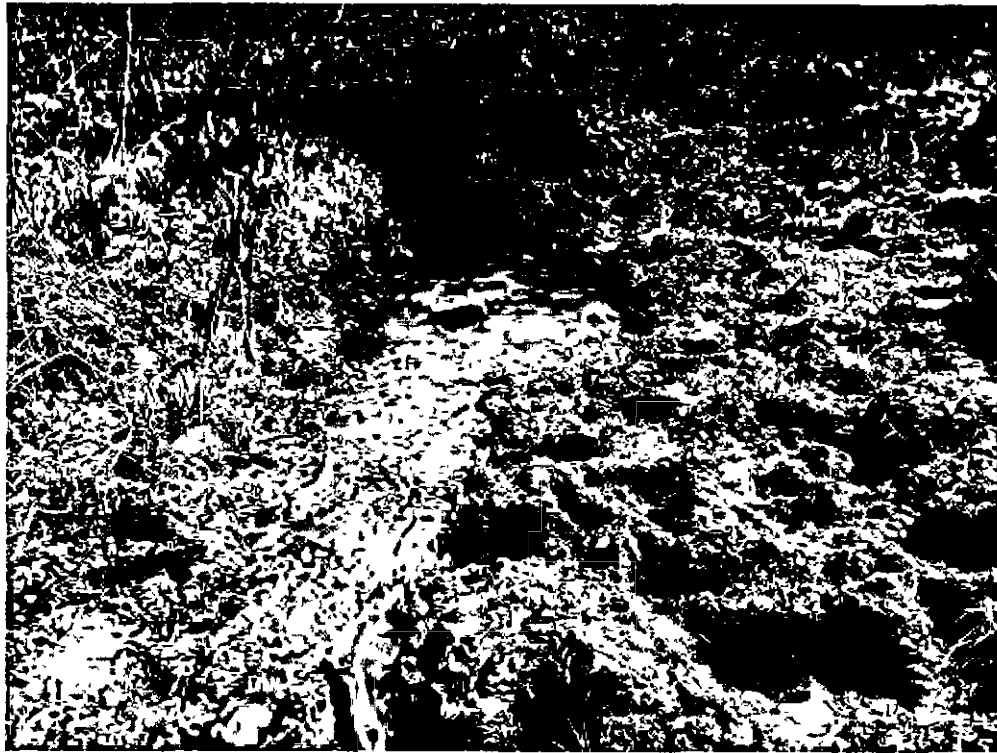


Photo 83. Stream S-21 facing northeast upstream.



Photo 84. Stream S-22 facing northeast upstream.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 85. Stream S-23 facing northwest upstream.



Photo 86. Open Water OW-1 facing northeast.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*

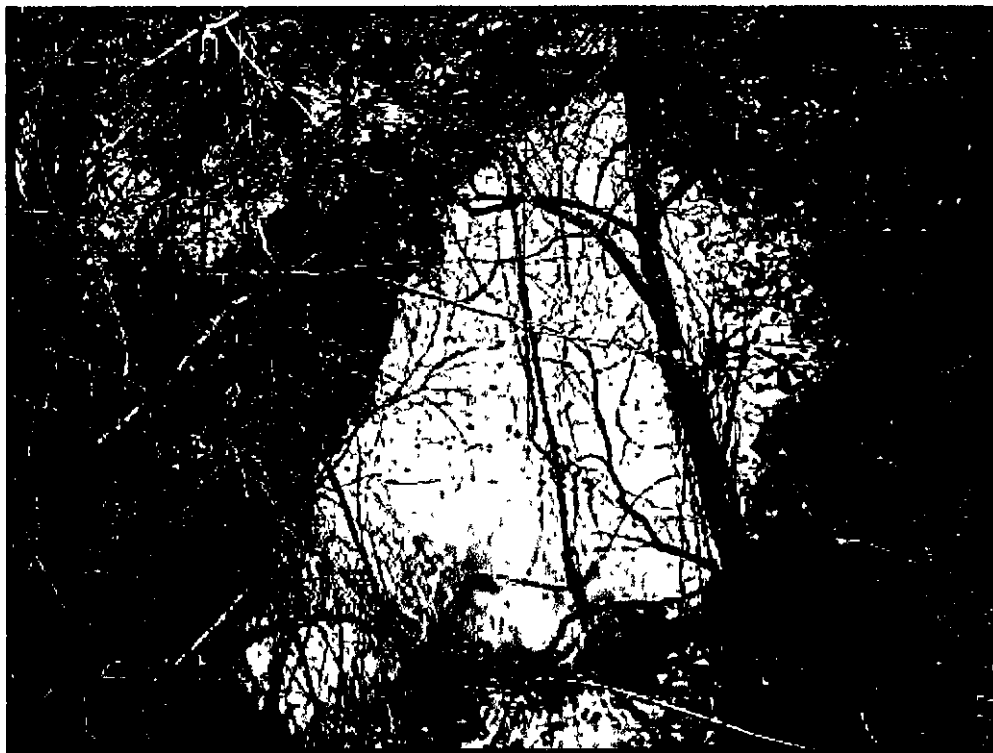


Photo 87. Open Water OW-2 facing south.



Photo 88. Open Water OW-3 facing west.

*South Field Energy Interconnection Facilities
Photographed April 29 through November 24, 2015*



Photo 89. Open Water OW-4 facing northwest.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project: South Field Energy County: Piedmont Date: 4/29/15
 Applicant: Tetra Tech State: IL Sampling Point: SP-1
 Investigator: Laura Sayre Section, Township, Range: _____
 Landform (ridge, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 10
 Subregion (LFR or MRA): LFR-N Lat: 40.051236 Long: -80.734522 Datum: NAD83
 Soil Map Unit Name: BKE NW classification: NDL
 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? Yes X No _____
 Are vegetation, soil, or hydrology naturally problematic? Yes _____ No _____ (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 _____ Is the Sampled Area within a Wetland? Yes _____ No X
 Wetland Hydrology Present? Yes _____ No _____
 Remarks: Agricultural

HYDROLOGY

Wetland Hydrology Indicators:
 Surface Water (A1) _____
 High Water Table (A2) _____
 Saturation (A3) _____
 Water Marks (B1) _____
 Sediment Deposits (B2) _____
 Drift Deposits (B3) _____
 Algal Mat or Crust (B4) _____
 Iron Deposits (B5) _____
 Inundation Visible on Aerial Imagery (B7) _____
 Water-Stained Leaves (B9) _____
 Aquatic Fauna (B13) _____
 Surface Soil Cracks (B6) _____
 Sparingly Vegetated Concave Surface (B8) _____
 Drainage Patterns (B10) _____
 Mire Trim Lines (B16) _____
 Dry-Season Water Table (C2) _____
 Clayish Burrows (C3) _____
 Saturation Visible on Aerial Imagery (C9) _____
 Stunted or Stressed Plants (D1) _____
 Geomorphic Position (D2) _____
 Shallow Aquifer (D3) _____
 Microtopographic Relief (D4) _____
 FAC-Neutral Tilt (D5) _____

Field Observations:
 Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 Describe Recorded Data (stream gauge, monitoring well, aerial photos previous inspections), if available

Remarks: _____

VEGETATION (Four Strata) - Use scientific names of plants.

Tree Stratum (Plot size _____)	Absolute % Cover	Dominant Indicator Species?	Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
Shrub/Strawb Stratum (Plot size _____)	_____	_____	_____
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
Herb Stratum (Plot size <u>5'</u>)	_____	_____	_____
1. <u>Zizia aurea</u>	<u>70</u>	<u>Y</u>	<u>UPL</u>
2. <u>Bardonia virginiana</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
3. <u>Taraxacum officinale</u>	<u>5</u>	<u>N</u>	<u>FACU</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____
Woody Vine Stratum (Plot size _____)	_____	_____	_____
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____

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

SP-1

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project: Southfield Energy Interconnection Facility County: Columbia State: OH Sampling Point: 3
 Applicant/Owner: Tetra Tech
 Investigator(s): Laura Sawyer Section, Township, Range: S31, T10N, R2W Slope (%):
 Landform (hillside, terrace, etc.):
 Subregion (LRR or MORA): LRR N24 Loc. 40 W9509 Long -80 7341816 Datum: WGS84
 Soil Map Unit Name: Eke-Bucks-Cheney silt loam, 25-35 percent slopes MHI classification:
 Are climatic/hydrologic conditions on the site typical for the time of year? Yes X No (If no, explain in Remarks)
 Are vegetation, soil, or hydrology significantly disturbed? Yes No
 Are vegetation, soil, or hydrology naturally problematic? Yes No (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 <u> </u> No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u> </u>		
Wetland Hydrology Present?	Yes <u> </u> No <u> </u>		
Remarks:	<u>Forest</u>		

HYDROLOGY

Wetland Hydrology Indicators		Secondary Indicators (Minimum of Two Required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mats or Crusts (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (If explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparingly Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Thin Lanes (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Salicization Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquifers (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Natural Test (D5)	<input type="checkbox"/> Field Observations: <input type="checkbox"/> Surface Water Present? Yes <u> </u> No <u> </u> <input type="checkbox"/> Water Table Present? Yes <u> </u> No <u> </u> <input type="checkbox"/> Saturation Present? Yes <u> </u> No <u> </u> <input type="checkbox"/> (Includes capillary fringe) <input type="checkbox"/> Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants.

Tree Stratum (Plot size 30')	Absolute % Cover	Dominant Indicator Species?	Dominant Indicator
1. <u>Quercus rubra</u>	40	<u> </u>	<u>ENUL</u>
2. <u>Prunus serotina</u>	20	<u> </u>	<u>ENUL</u>
3. <u>Corylus americana</u>	10	<u> </u>	<u>ENUL</u>
4. <u> </u>			
5. <u> </u>			
6. <u> </u>			
7. <u> </u>			
50% of total cover: <u>30</u> 20% of total cover: <u>10</u>			
Shrub/Stratum (Plot size 15')	Absolute % Cover	Dominant Indicator Species?	Dominant Indicator
1. <u>Bursera bicolor</u>	5	<u> </u>	<u>FACW</u>
2. <u>Fraxinus americana</u>	3	<u> </u>	<u>FACW</u>
3. <u> </u>			
4. <u> </u>			
5. <u> </u>			
6. <u> </u>			
7. <u> </u>			
8. <u> </u>			
9. <u> </u>			
50% of total cover: <u>4</u> 20% of total cover: <u>2</u>			
Herb Stratum (Plot size 5')	Absolute % Cover	Dominant Indicator Species?	Dominant Indicator
1. <u>Impatiens capensis</u>	30	<u> </u>	<u>FACW</u>
2. <u>Podophyllum peltatum</u>	15	<u> </u>	<u>ENUL</u>
3. <u>Alisma plantago</u>	10	<u> </u>	<u>ENUL</u>
4. <u>Syntherisma arifolius</u>	3	<u> </u>	<u>ENUL</u>
5. <u>Taraxacum officinale</u>	2	<u> </u>	<u>ENUL</u>
6. <u> </u>			
7. <u> </u>			
8. <u> </u>			
9. <u> </u>			
10. <u> </u>			
11. <u> </u>			
50% of total cover: <u>30</u> 20% of total cover: <u>12</u>			
Woody Vine Stratum (Plot size 30')	Absolute % Cover	Dominant Indicator Species?	Dominant Indicator
1. <u> </u>			
2. <u> </u>			
3. <u> </u>			
4. <u> </u>			
5. <u> </u>			
50% of total cover: <u> </u> 20% of total cover: <u> </u>			
Remarks: (Include photo numbers here or on a separate sheet.)			

Sampling Point

Dominance Test Worksheet	
Number of Dominant Species That Are OBL, FACW, or FAC	3 (A)
Total Number of Dominant Species Across All Strata	6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC	50 (A/B)
Prevalence Index Worksheet	
Total % Cover of	Mulch b/c
OBL species	3 x 1 = 3
FACW species	30 x 2 = 60
FAC species	0 x 3 = 0
FACU species	43 x 4 = 172
UPL species	0 x 5 = 0
Column Totals:	139 (A) 467 (B)
Prevalence Index = B/A =	3.4
Hydrophytic Vegetation Indicators	
1 - Rapid Test for Hydrophytic Vegetation	
2 - Dominance Index is >50%	
3 - Prevalence Index is >3.0	
4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)	
Problematic Hydrophytic Vegetation? (Explain)	
Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
Definitions of Four Vegetation Strata	
Tree - Woody plants excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
Shrub/Stratum - Woody plants, excluding vines 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 vine - All woody vines greater than 3.28 ft in height.	
Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>

3 Sampling Point

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	South Field Energy Interconnection Facilities	CRD/County:	Mudston Twp, Columbiana Co.	Sampling Date:	April 26, 2015
Applicant/Owner:	Travis Tech	State:	OH	Sampling Point:	SP-4
Investigator(s):	B. Sabby, E. Kennedy	Section, Township, Range:	Mudston Twp		
Landform (alluvial, terrace, etc.):	alluvial (tearp)	Local Relief (concave, convex, terr):	none		
Substratum (LRR or MLRA):	LRR N	Lat: 40 44 0238	Long:	-80 23 0635	Datum: NAD83
Soil Map Unit Name:	CcC	Yes	X	No	(If no, explain in Remarks.)
Are chemical/hydrologic conditions on the site typical for this time of year?	Yes	X	No		Are "Normal Circumstances" present?
Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed?	Yes	X	No		Yes
Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic?	Yes	X	No		(If needed, explain any stresses in Remarks.)
Are Vegetation _____, Soil _____, or Hydrology _____	Yes	X	No		
<p>SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.</p> <p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p> <p>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> W-1</p>					
Remarks:					
<p>PFO. Original name B5May1 B49</p>					
<p>HYDROLOGY</p> <p>Wetland Hydrology Indicators</p> <p>Primary Indicators (minimum of one is required, check all that apply):</p> <p>Surface Water (A1) _____</p> <p>High Water Table (A2) _____</p> <p>Saturation (A3) _____</p> <p>Water Marks (B 1) _____</p> <p>Saturated Deposits (B2) _____</p> <p>Dark Deposits (B3) _____</p> <p>Algal Mat or Crust (B4) _____</p> <p>Iron Deposits (B5) _____</p> <p>Inundation Visible on Aerial Imagery (B7) _____</p> <p>Water-Shaded Leaves (B8) _____</p> <p>Aquatic Plants (B13) _____</p>					
<p>Secondary Indicators (minimum of two required):</p> <p>Surface Soil Cracks (B9) _____</p> <p>Samplings Vegetated Concave Surface (B9) _____</p> <p>Drainage Patterns (B10) _____</p> <p>Moist Tens Upriser (B16) _____</p> <p>Dry-Spotter Water Table (C2) _____</p> <p>Cryophin Burrows (C3) _____</p> <p>Saturation Visible on Aerial Imagery (C4) _____</p> <p>Stained or Stained Rhizoids (D1) _____</p> <p>Chlorophyll Fluorescence (D2) _____</p> <p>Shallow Aquifer (D3) _____</p> <p>Microscopic Relief (D4) _____</p> <p>PAC-Nuclear Test (D5) _____</p>					

Eastern Mountain and Piedmont - Version 2.0

SOL.

Stratum	(Plot size: 30)	Abundance % Cover	Dominant Species?	Indicator Status
1 <i>Asarum</i>		40	Y	FAC
2 <i>Fraxinus pennsylvanica</i>		20	Y	FACW
3 <i>Ulmus americana</i>		15	N	FACW
4 <i>Cornus alle</i>		15	N	FACU
5				
6				
7				
8				
9				
10				
11				
12				
Total Cover		90	= Total Cover	
Stratum (Plot size: 15)				
1 <i>Rosa multiflora</i>				
2 <i>Corylus sp.</i>		20	Y	FACU
3				
4		5	N	NI
5				
6				
7				
8				
9				
10				
11				
12				
Total Cover		25	= Total Cover	
Stratum (Plot size: 8)				
1 <i>Carex bromoides</i>		30	Y	FACW
2 <i>moist sp.</i>		20	Y	NI
3 <i>Viburnum</i>		20	Y	FAC
4 <i>Corylus virginica</i>		10	N	NI
5 <i>Alnus sp.</i>		3	N	NI
6 <i>Parthenocissus</i>		2	N	FACW
7 <i>Gentiana maculata</i>		2	N	FACU
8				
9				
10				
11				
12				
Total Cover		87	= Total Cover	
Stratum (Plot size: 15)				
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
Total Cover		0	= Total Cover	

Stratum (Plot size: 15)

1 *Rosa multiflora*

2 *Corylus sp.*

3

4

5

6

7

8

9

10

11

12

Total Cover

Stratum (Plot size: 8)

1 *Carex bromoides*

2 *moist sp.*

3 *Viburnum*

4 *Corylus virginica*

5 *Alnus sp.*

6 *Parthenocissus*

7 *Gentiana maculata*

8

9

10

11

12

Total Cover

Stratum (Plot size: 15)

1

2

3

4

5

6

7

8

9

10

11

12

Total Cover

Stratum (Plot size: 15)

1 *Rosa multiflora*

2 *Corylus sp.*

3

4

5

6

7

8

9

10

11

12

Total Cover

Stratum (Plot size: 8)

1 *Carex bromoides*

2 *moist sp.*

3 *Viburnum*

4 *Corylus virginica*

5 *Alnus sp.*

6 *Parthenocissus*

7 *Gentiana maculata*

8

9

10

11

12

Total Cover

Stratum (Plot size: 15)

1

2

3

4

5

6

7

8

9

10

11

12

Total Cover

Stratum (Plot size: 15)

1 *Rosa multiflora*

2 *Corylus sp.*

3

4

5

6

7

8

9

10

11

12

Total Cover

Stratum (Plot size: 8)

1 *Carex bromoides*

2 *moist sp.*

3 *Viburnum*

4 *Corylus virginica*

5 *Alnus sp.*

6 *Parthenocissus*

7 *Gentiana maculata*

8

9

10

11

12

Total Cover

Stratum (Plot size: 15)

1

2

3

4

5

6

7

8

9

10

11

12

Total Cover

Stratum (Plot size: 15)

1 *Rosa multiflora*

2 *Corylus sp.*

3

4

5

6

7

8

9

10

11

12

Total Cover

Stratum (Plot size: 8)

1 *Carex bromoides*

2 *moist sp.*

3 *Viburnum*

4 *Corylus virginica*

5 *Alnus sp.*

6 *Parthenocissus*

7 *Gentiana maculata*

8

9

10

11

12

Total Cover

Stratum (Plot size: 15)

1

2

3

4

5

6

7

8

9

10

11

12

Total Cover

Stratum (Plot size: 15)

1 *Rosa multiflora*

2 *Corylus sp.*

3

SOL.

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

[illegible]

Remarks

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region
 Project: SOUTH FARM ERECTION, THE PLANTATION County: Madison Twp Date: 24 NOV 2015
 Application: TECHNICAL State: OH Sampling Point: SP-5
 Investigator: ANN GILMORE, MARY GILMORE Section: SELECTION Range: R200
 Landform: terrace, etc. hillslope Local relief (concave, convex, none): none Slope (%):
 Subregion: LR or MURRAY LR N124 Lat: 40.143718 Long: -80.33294 Datum: NAD83
 Soil Map Unit Name: BEE-BRVS (HUMIFERUS) Silt 100YR, 2.5-40% CLAY MHI 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 <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		
Remarks: <u>Upland Forest.</u>			

HYDROLOGY	
Wetland Hydrology Indicators:	
Primary Indicators (minimum of one is required, check all that apply)	Secondary Indicators (in remarks or on a separate sheet)
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Humidification Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Checks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B14) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquifers (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Natural Test (D5)
Field Observations:	
Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u>	
Describe Recent Data (stream gauges, monitoring well, aerial photos, previous inspections), if available	
Remarks: <u>NO hydrology observed</u>	

VEGETATION (Four Strata) - Use scientific names of plants.

Tree Stratum (Photo size 30')	Absolute % Cover	Dominant Indicator	Stratum
1. <u>QUERCUS SP.</u>	20	<u>Y</u>	<u>Y</u>
2. <u>ALNUS INCANA</u>	20	<u>Y</u>	<u>Y</u>
3. <u>QUERCUS RUBRA</u>	20	<u>Y</u>	<u>Y</u>
4. <u>GLIRICIA INTERMIDIA</u>	20	<u>Y</u>	<u>Y</u>
5. <u> </u>			
6. <u> </u>			
7. <u> </u>			
8. <u> </u>			
9. <u> </u>			
10. <u> </u>			
11. <u> </u>			
Shrub Stratum (Photo size 15')	80% of total cover	20% of total cover	Stratum
1. <u>QUERCUS SP.</u>	15	15	<u>Y</u>
2. <u>ALNUS INCANA</u>	15	15	<u>Y</u>
3. <u>QUERCUS RUBRA</u>	15	15	<u>Y</u>
4. <u>GLIRICIA INTERMIDIA</u>	15	15	<u>Y</u>
5. <u> </u>			
6. <u> </u>			
7. <u> </u>			
8. <u> </u>			
9. <u> </u>			
10. <u> </u>			
11. <u> </u>			
Herb Stratum (Photo size 5')	80% of total cover	20% of total cover	Stratum
1. <u>QUERCUS SP.</u>	25	25	<u>Y</u>
2. <u>ALNUS INCANA</u>	25	25	<u>Y</u>
3. <u>QUERCUS RUBRA</u>	25	25	<u>Y</u>
4. <u>GLIRICIA INTERMIDIA</u>	25	25	<u>Y</u>
5. <u> </u>			
6. <u> </u>			
7. <u> </u>			
8. <u> </u>			
9. <u> </u>			
10. <u> </u>			
11. <u> </u>			
Woody Vine Stratum (Photo size 20')	80% of total cover	20% of total cover	Stratum
1. <u> </u>	15	15	<u>Y</u>
2. <u> </u>			
3. <u> </u>			
4. <u> </u>			
5. <u> </u>			
6. <u> </u>			
7. <u> </u>			
8. <u> </u>			
9. <u> </u>			
10. <u> </u>			
11. <u> </u>			
Remarks: (include photo numbers here or on a separate sheet)			

Sampling Point SP-5

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

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: South Pied Energy Interconnection Facilities	City/County: Medison Twp, Columbiana Co.	Sampling Date: April 28, 2015
Applicant/Owner: E Kennedy	State: OH	Sampling Point: SP 8
Investigator(s): Landowners (all public, land use, etc.) Subdivision (LRR or MRA): SUE Swifts Channery all Year, 25 to 40 percent slopes	Section, Township, Range: Local Relief (contour, convex, concave): LRR M Lat: 40 648228 Long: -80 776954	Slope (%): none WSR: WGS84
Soil Map Unit Name: Are climate/hydrologic conditions on the site typical for this time of year? Soil or Hydrology significantly different?	Soil: _____ or Hydrology: _____	Notes: MNH classification: zone:
Are Vegetation: Soil: _____ or Hydrology: _____	Soil: _____ or Hydrology: _____	Notes: MNH classification: zone:

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

Hydrologic Vegetation Present? Yes ☒ No ☐ Is the Sampled Area within a Wetland? Yes ☒ No ☐ WGS

Hydrologic Soil Present? Yes ☒ No ☐ Are "Normal Circumstances" present? Yes ☒ No ☐ (If no, explain in Remarks.)

Wetland Hydrology Present? Yes ☒ No ☐ (If needed, explain any answers in Remarks.)

Remarks:

Stream stream thggs Original name wSP13.

HYDROLOGY

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

Surface Water (A1)	True Adjacent Ponds (B14)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)
X Subsurface A3	X Outgassed Phenophanes on Living Plants (C3)
Water Meters (B1)	Pressure of Reduced Iron (C4)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C5)
Drift Deposits (B3)	Thin Muck Surface (C7)
Algal Mats or Crust (B4)	Other (Specify in Remarks)
Iron Deposits (B5)	
Interruption Visible or Aerial Imagery (B7)	
Wetland-Related Leaves (B8)	
Aquatic Plants (B15)	

Secondary Indicators (minimum of two required)

Surface Soil Cracks (B6)	Stagnant Vegetated Concave Surface (B9)
Change Ponds (D10)	Moist Tree Lines (B16)
Dry-Season Water Table (C2)	Crystalline Burrows (C3)
Sediment Visible on Aerial Imagery (C5)	Stagnant or Stagnant Ponds (D1)
X Seasonal Ponds (D2)	Shrub Aqueduct (D3)
X Microtopographic Relief (D4)	RAC-Natural Test (D5)

Field Observations:

Surface Water Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	_____
High Water Table Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	_____
Subsurface Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Depth (inches):	4

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

Remarks:

	Dominance Test Worksheet	Number of Dominant Species That Are OBL, FACW, or FAC:	(A) _____	(B) _____	(AB) _____
Total Number of Dominant Species Across All Strata:					
Percent of Dominant Species That Are OBL, FACW, or FAC:					
Prevalence Index = $\frac{\text{Total \% Cover of OBL species}}{\text{Total \% Cover}}$					
Prevalence Index = $\frac{\text{Total \% Cover of FACW species}}{\text{Total \% Cover}}$					
Prevalence Index = $\frac{\text{Total \% Cover of FAC species}}{\text{Total \% Cover}}$					
Prevalence Index = $\frac{\text{Total \% Cover of LPL species}}{\text{Total \% Cover}}$					
Prevalence Index = $\frac{\text{Total \% Cover of Column Totals}}{\text{Total \% Cover}}$					
Prevalence Index = BIA = _____					
Hydrophytic Vegetation Indicators: X 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is <3.0 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation? (Explain)					
'Indications of hypoxic acid and sulfidic hydrolysis must be present, unless disturbed or problematic Definitions of Four Vegetation Statuses: Tree - Woody plants exceeding 3 m, 3 ft (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Shrub - Woody plants, excluding woody vines approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Savanna - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. 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		

	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
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22			
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87			
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90			
91			
92			
93			
94			
95			
96			
97			
98			
99			
100			

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

SON.

Bumping Point:

[illegible]

VEGETATION (Five Strata) - Use scientific names of plants.

Stratum	(Plot size: 30')	Abundance % Cover	Dominant Species?	Indicator Status
1	Pinus serotina	30	Y	FACU
2	Quercus rubra	20	Y	FACU
3	Quercus alba	10	N	FACU
4		5		
5		5		
6				
7				
Subtotal Stratum		80	= Total Cover	
(Plot Size: 15')				
1				
2				
3				
4				
5				
6				
7				
Subtotal Stratum		0	= Total Cover	
(Plot Size: 15')				
Stratum		30	Y	FACU

Dominance Test worksheet:	
Number of Dominant Species	9
Total Number of Dominant Species Across All Strata	5
Percent of Dominant Species That Are OBL, FACW or FAC	0.00%
(4R)	

Prevalence Index worksheet:	
Total % Cover of	Multiply by
OBL species	0 = 1 =
FACW species	0 = 2 =
FAC species	5 = 3 =
FACU species	145 = 4 =
UPL species	0 = 5 =
Column Totals	(150) (A) 665 (B)
Prevalence Index = B/A = 3.966666667	

Woody Vm. Stratum	(Pct. absc.)	(Pct. absc.)	8	35	= Total Cover
1	Vicak acrole			15	Y
2	Medula alba			15	Y
3	Medula alba			5	N
4	Alnus acrole			5	N
5	Physicium acrole			5	N
6	Chytonea acrole			5	N
7	Alnus sp			7	N
8					N
9					N
10					N
11					N
12					N
				45	= Total Cover
Woody Vm. Stratum (Pct. absc.) 307					
1					
2					
3					
4					
5					
				0	= Total Cover

3 - Percent cover index ≤ 5.0
 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation? (Explain)

1 - Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
 Definitions of Four Vegetation Strata:
 Type - Woody plants, excluding vines, 3 ft. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
 Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
 Shrubs - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
 Herbs - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 2.28 ft. tall.
 Woody Vines - All woody vines greater than 2.28 ft in height.

Hydrophytic Vegetation Present? Yes ☐ No ☐

Remarks (Include photo numbers here if on a separate sheet)

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: South Field Ecology Interim Assessment Facility San Jose, CA 28 Nov 2015
 Applicant/Owner: ICMA Tech San Jose, CA 28 Nov 2015
 Investigator(s): BAU Gilmore, MWA Gilmore San Jose, CA 28 Nov 2015
 Landform (hillside, terrace, etc.): terrace San Jose, CA 28 Nov 2015
 Subregion (LRR or MLRA): MLRA 147, 148 San Jose, CA 28 Nov 2015
 Soil Map Unit Name: CoC - Caliche from 511 140m San Jose, CA 28 Nov 2015
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are vegetation or hydrology significantly disturbed? Yes X No (If needed, explain any answers in Remarks.)
 Are vegetation or hydrology naturally problematic? Yes X No (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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u> No <u> </u>
Hydrophytic Soil Present?	Yes <u>X</u> No <u> </u>		
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>		
Remarks:	<u>PEM along S-4.</u>		

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)

X Water Marks (B1)

X Sediment Deposits (B2)

X Drift Deposits (B3)

X Algal Mat or Crust (B4)

X Iron Deposits (B5)

X Foundation Visible on Aerial Imagery (B7)

X Aquatic Fauna (B13)

Secondary Indicators (Minimum of Two Required)

X Surface Soil Cracks (B6)

X Sparsely Vegetated Concave Surface (B8)

X Drainage Patterns (B10)

X Moss/Ten Leaves (B16)

X Dry-Season Water Table (C1)

X Recent Iron Reduction in Tilled Soils (C6)

X Thin Muck Surface (C7)

X Other (Explain in Remarks)

Field Observations

Surface Water Present? Yes X No Depth (inches) 13"

Water Table Present? Yes X No Depth (inches) 9"

Saturation Present? Yes X No Depth (inches) 9"

Includes capillary fringe? Yes X No

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

Remarks:

SOIL

Depth (inches)	Moisture	Color (moist)	%	Type ¹	Loc ²	Texture	Remarks
0-3	107R 42		100			loam	
3-9	107R 42		100			loam	
9+	refined						

Hydrophytic Soil Indicators

1. Type: C-Concentration, D-Deposition, R-Reduced Matrix, M-Mashed Sand Grains.

2. Location: R-C Point Lining, Markers.

Indicators for Problematic Hydrophytic Soils³

 Healed (A1)

 Helic Epipelon (A2)

 Black Holes (A3)

 Hydrogen Sulfide (A4)

 Striated Layers (A5)

 2 cm Muck (A10) (LRR 14)

 Discolored Below Dark Surface (A11)

 Thick Dark Surface (A12)

 Sandy Mucky Material (S1) (LRR 14)

 MLRA 147, 148

 Sandy Clayey Matrix (S4)

 Sandy Matrix (S5)

 Stripped Matrix (S6)

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

Remarks:

US Army Corps of Engineers

US Army Corps of Engineers

Eastern Mountains and Piedmont - Version 2.0

Sampling Point CP-8

Tree Stratum (Plot size: 30')		Arboreal Canopy Indicator % Cover, Stratum 2 Strata		Dominance Test Worksheet Number of Dominant Species That Are OBL, FACW, or FAC	
1				3	(A)
2				3	(B)
3				100	(A/B)
4					
5					
6					
7					

Seedling/Strawb Stratum (Plot size: 15')		Prevalence Index Worksheet	
1		Total % Cover of:	100% box
2		OBL species	x1 =
3		FACW species	x2 =
4		FAC species	x3 =
5		FACU species	x4 =
6		URL species	x5 =
7		Column Totals	(A) (B)

Shrub Stratum (Plot size: 5')		Prevalence Index = B/A =	
1		Total Cover	
2		50% of total cover	
3			
4			
5			
6			
7			

Herb Stratum (Plot size: 5')		Prevalence Index = B/A =	
1		Total Cover	
2		50% of total cover	
3			
4			
5			
6			
7			

Woody Vine Stratum (Plot size: 30')		Prevalence Index = B/A =	
1		Total Cover	
2		50% of total cover	
3			
4			
5			

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project: South Fork Elk River Interconnectivity Project City/County: Madison Twp / Columbia Co. Date: 24 Nov 2015
 Applicant/Owner: ICF Inc State: OH Sampling Point: SP-9
 Investigator: John G. Williams, John G. Williams Section: Township, Ranger Slope (ft):
 Landform (ridges, terraces, etc.): DEMARCATED Local road (concave, convex, none): SP-9
 Subregion (LRR or MREA): LAKE NITZ Long: 80 76 52 Datum: NAD 83
 Soil Map Line Name: BLE-BCE, CHANNING SILT LOAM, 25 to 40% Silt NW classification: NH
 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 Y 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 <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>Y</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>		
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>		
Remarks:	<u>pen along mouth of S-7</u>		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (Continuation of Item 1000)	
Surface Water (A1)	Yes <u>X</u> No <u> </u>	Surface Soil Cracks (B4)	Yes <u> </u> No <u> </u>
High Water Table (A2)	Yes <u>X</u> No <u> </u>	Sparsely Vegetated Concave Surface (B8)	Yes <u> </u> No <u> </u>
Saturation (A3)	Yes <u>X</u> No <u> </u>	Drainage Patterns (B10)	Yes <u> </u> No <u> </u>
Water Marks (B1)	Yes <u>X</u> No <u> </u>	Moss Trim Lines (B16)	Yes <u> </u> No <u> </u>
Sediment Deposits (B2)	Yes <u>X</u> No <u> </u>	Dry-Season Water Table (C2)	Yes <u> </u> No <u> </u>
Drift Deposits (B3)	Yes <u>X</u> No <u> </u>	Crayfish Burrows (C8)	Yes <u> </u> No <u> </u>
Algal Mat or Crust (B4)	Yes <u>X</u> No <u> </u>	Saturation Visible on Aerial Imagery (C9)	Yes <u> </u> No <u> </u>
Iron Deposits (B5)	Yes <u>X</u> No <u> </u>	Stunted or Stressed Plants (D1)	Yes <u> </u> No <u> </u>
Pondation Visible on Aerial Imagery (B7)	Yes <u>X</u> No <u> </u>	Geomorphic Position (D2)	Yes <u> </u> No <u> </u>
Water Stained Leaves (B9)	Yes <u>X</u> No <u> </u>	Shallow Aquatic (D3)	Yes <u> </u> No <u> </u>
Aquatic Fauna (B13)	Yes <u>X</u> No <u> </u>	Microtopographic Relief (D4)	Yes <u> </u> No <u> </u>
		FAC-Neutral Test (D5)	Yes <u> </u> No <u> </u>

Field Observations:	Yes <u> </u> No <u> </u>	Depth (Inches)	Yes <u> </u> No <u> </u>
Surface Water Present?	Yes <u> </u> No <u> </u>	Depth (Inches)	Yes <u> </u> No <u> </u>
Water Table Present?	Yes <u> </u> No <u> </u>	Depth (Inches)	Yes <u> </u> No <u> </u>
Saturation Present?	Yes <u> </u> No <u> </u>	Depth (Inches)	Yes <u> </u> No <u> </u>
Soil Cracks (B14)	Yes <u> </u> No <u> </u>	Depth (Inches)	Yes <u> </u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available).			

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants.

Tree Stratum (Plot size: <u>20'</u>)	Absolute % Cover: <u> </u>	Dominant Indicator Species: <u> </u>	Dominance Test Worksheet:
1. <u> </u>			Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. <u> </u>			Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. <u> </u>			Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (AB)
4. <u> </u>			
5. <u> </u>			
6. <u> </u>			
7. <u> </u>			
Shrub/Straw Stratum (Plot size: <u>5'</u>)	Absolute % Cover: <u>51</u>	Dominant Indicator Species: <u> </u>	Dominance Test Worksheet:
1. <u> </u>			Number of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A)
2. <u> </u>			Total Number of Dominant Species Across All Strata: <u> </u> (B)
3. <u> </u>			Percent of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (AB)
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Herb Stratum (Plot size: <u>5'</u>)	Absolute % Cover: <u>30</u>	Dominant Indicator Species: <u> </u>	Dominance Test Worksheet:
1. <u> </u>			Number of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A)
2. <u> </u>			Total Number of Dominant Species Across All Strata: <u> </u> (B)
3. <u> </u>			Percent of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (AB)
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Woody Vine Stratum (Plot size: <u>20'</u>)	Absolute % Cover: <u>25</u>	Dominant Indicator Species: <u> </u>	Dominance Test Worksheet:
1. <u> </u>			Number of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (A)
2. <u> </u>			Total Number of Dominant Species Across All Strata: <u> </u> (B)
3. <u> </u>			Percent of Dominant Species That Are OBL, FACW, or FAC: <u> </u> (AB)
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Remarks: (Include photo numbers here or on a separate sheet.)			

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

Sampling Point: 57-10

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project: South Field Energy Interconnection Facility
 Applicant/Owner: City of Madison Sampling Date: 24 Nov 2015
 Investigator: John L. Lach Section: Madison Twp State: OH Sampling Point: SP-11
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (N):
 Subregion (LRR or MLRA): L2E N 12A USFWS: 90-076608 Long: -90.776608 Datum: NAD83
 Soil Map Unit Name: BVD - BEVELS CHERRYBERRY GLT 100YR, 15-28% Slope MVI classification: N/A
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes Y No N (If no, explain in Remarks.)
 Are vegetation Soil or hydrology Soil significantly disturbed? Yes Y No N
 Are vegetation Soil or hydrology Soil naturally problematic? Yes Y No N (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 <u>Y</u> No <u>N</u>	Is the Sampled Area within a Wetland?	Yes <u>Y</u> No <u>N</u>
Hydric Soil Present?	Yes <u>Y</u> No <u>N</u>		
Wetland Hydrology Present?	Yes <u>Y</u> No <u>N</u>		

Remarks:
Upland Forest

HYDROLOGY

Wetland Hydrology Indicators	Secondary Indicators (Minimum of Two Required)
Surface Water (A1)	Surface Soil Cracks (B5)
High Water Table (A2)	Sparsely Vegetated Concave Surface (B9)
Saturation (A3)	Drainage Patterns (B10)
Water Marks (B1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Crystalline Burrows (C9)
Algal Mats or Crust (B4)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Stunted or Stressed Plants (D1)
Inundation Visible on Aerial Imagery (B7)	Geomorphic Position (D2)
Water-Stained Leaves (B9)	Shallow Aquifers (D3)
Aquatic Fauna (B13)	Microtopographic Relief (D4)
	FAC Neutral Test (D5)

Field Observations:	Wetland Hydrology Present? Yes <u>Y</u> No <u>N</u>
Surface Water Present?	Yes <u>Y</u> No <u>N</u>
Water Table Present?	Yes <u>Y</u> No <u>N</u>
Saturation Present?	Yes <u>Y</u> No <u>N</u>
Excludes capillary fringe	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	

Remarks:
No hydrology observed.

VEGETATION (Four Strata) - Use scientific names of plants.

Tree Stratum (Plot size: 20')	Shrub Stratum (Plot size: 10')	Herb Stratum (Plot size: 5')	Woody Vine Stratum (Plot size: 20')
1. <u>PRUNUS SPONTANEA</u>	1. <u>PRUNUS SPONTANEA</u>	1. <u>PRUNUS SPONTANEA</u>	1. <u>PRUNUS SPONTANEA</u>
2. <u>QUERCUS RUBRA</u>	2. <u>QUERCUS RUBRA</u>	2. <u>QUERCUS RUBRA</u>	2. <u>QUERCUS RUBRA</u>
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Remarks: (Include photo numbers here or on a separate sheet.)

Sampling Point: SP-11

(long.)

Depth (Inches)	Moisture (%)	Color (moist)	Texture	Remarks
0-5"	18%	4/3	100	
3-11"	10%	4/4	100	

Type	C-Concentration	D-Depletion	RM-Reduced Matrix	MS-Mottled Sand Grains	Location	PI-Pipe Unlog	M-Matrix	Indicators for Problematic Hydraulic Solids
Hydraulic Soil Indicators								
	Hydrocol (A1)							
	Black Expulsion (A2)							
	Black Hetic (A3)							
	Hydrogen Sulfide (A4)							
	Stratified Layers (A5)							
	2 cm Muck (A10) (LRR M)							
	Depleted Below Dark Surface (A11)							
	Thick Dark Surface (A12)							
	Sandy Mucky Mineral (S1) (LRR M)							
	MLRA 147, 148							
	Sandy Gleyed Matrix (S4)							
	Sandy Redox (S5)							
	Stripped Matrix (S6)							
	Restrictive Layer (if observed)							
	Dark Surface (S7)							
	Polyhedral Below Surface (S8) (MLRA 147, 148)							
	Thin Dark Surface (S9) (MLRA 147, 148)							
	Loomy Gleyed Matrix (F2)							
	Depleted Matrix (F3)							
	Redox Dark Surface (F4)							
	Depleted Dark Surface (F7)							
	Redox Depressions (F8)							
	Iron-Manganese Masses (F12) (LRR M)							
	MLRA 134							
	Umbic Matrix (F13) (MLRA 136, 122)							
	Piedmont Floodplain Sols (F19) (MLRA 148)							
	Red Parent Material (F21) (MLRA 127, 147)							
	2 cm Muck (A10) (MLRA 147)							
	Coast Prairie Redox (A16)							
	MLRA 147, 148							
	Piedmont Floodplain Sols (F19)							
	MLRA 136, 147							
	Very Shallow Dark Surface (TF12)							
	Other (Explain in Remarks)							
	Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic							

Type	Depth (Inches)	Hydraulic Soil Present?	Yes	No
Remarks				

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: South Field, Energy Intervention Facility: Madison Twp/Dalbarna Co.
 Circummary: Conveyance Sampling Date: 24 Nov 2015

Applicant/Owner: ITC Tech State: OH Sampling Point: 56-12
 Investigator(s): MAN, SIMONE, ALAN, CLIMBERG Section, Township, Range: _____
 Local relief (concave, convex, none): CONVEX Slope (N): _____
 and/or (spills, terraces, etc.): PAVING
 Substrate (LRR or MLRA): LRR N 175 Lat: 40-32.368 Long: -80-32.4847 Datum: NAD 83
 Soil map unit name: BLE - BECKS CHANNING SILT-LOESS Is it a Slope? NO NW classification: _____
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes 1 No _____ (If no, explain in Remarks.)
 Is the soil significantly disturbed? _____ Are Normal Circumstances present? Yes X No _____
 Is the soil naturally problematic? _____ (If needed, explain any answers in Remarks.)
 Are there any Hydrology or Hydrology related issues? _____
 Are there any Vegetation or Vegetation related issues? _____

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		

Remarks.
Fog on Hual field.

HYDROLOGY

Wetland Hydrology Indicators		Secondary Indicators (Confirmation of Wetland)	
Primary Indicators (Minimum of one is required, checked at field study)			
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)	
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)	
Saturation (A3)	Ordinance Phosphorus on Living Roots (C3)	Drainage Patterns (B10)	
Water Marks (B1)	Presence of Reduced Iron (C4)	Mud Thin Lines (B16)	
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Four-Season Water Table (C2)	
Drift Deposits (B3)	Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)	
Apical Mire or Crust (B4)	Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)	
Iron Deposits (B5)	Other (Explain in Remarks)	Stunted or Stressed Plants (D1)	
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)	
Water-Strained Leaves (B9)		Shallow Aquifer (D3)	
Aquatic Fauna (B13)		Microtopographic Relief (D4)	
		FAC-Neutral Test (D5)	

Field Observations.		Welland Hydrology Present?	
Yes	No	Yes	No
Surface Water Present?	<input checked="" type="checkbox"/>		
Water Table Present?	<input checked="" type="checkbox"/>		
Surface Tidal Present?	<input checked="" type="checkbox"/>		
Saturated Present?	<input checked="" type="checkbox"/>		
Includes (surface, frons)			

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

Remarks. No hydrophilic passage

VEGETATION (Four Straits) - Use scientific names of plants.

Top Stratum (Plot size 30')		Dominant Indicator	
Species?	% Cover	Species?	% Cover
1		1	
2		2	
3		3	
4		4	
5		5	
6		6	
7		7	
<p>50% of total cover: <u>15</u></p> <p>80% of total cover: <u>15</u></p>		<p>50% of total cover: <u>15</u></p> <p>80% of total cover: <u>15</u></p>	
<p>Substratum Stratum (Plot size 15')</p>		<p>Substratum Stratum (Plot size 15')</p>	
1		1	
2		2	
3		3	
4		4	
5		5	
6		6	
7		7	
<p>50% of total cover: <u>15</u></p> <p>80% of total cover: <u>15</u></p>		<p>50% of total cover: <u>15</u></p> <p>80% of total cover: <u>15</u></p>	
<p>Herb Stratum (Plot size 5')</p>		<p>Herb Stratum (Plot size 5')</p>	
1		1	
2		2	
3		3	
4		4	
5		5	
6		6	
7		7	
<p>50% of total cover: <u>15</u></p> <p>80% of total cover: <u>15</u></p>		<p>50% of total cover: <u>15</u></p> <p>80% of total cover: <u>15</u></p>	
<p>Woody Vine Stratum (Plot size 30')</p>		<p>Woody Vine Stratum (Plot size 30')</p>	
1		1	
2		2	
3		3	
4		4	
5		5	
<p>50% of total cover: <u>15</u></p> <p>80% of total cover: <u>15</u></p>		<p>50% of total cover: <u>15</u></p> <p>80% of total cover: <u>15</u></p>	
<p>Remarks: (Include photo numbers here or on a separate sheet)</p>			

SOIL

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

Depth (inches)		Moisture		Color (Munsell)		Texture		Remarks	
0-10	10-20	0-10	10-20	0-10	10-20	0-10	10-20	0-10	10-20
0-10	10-20	3/3	3/3	10 YR 6/1	10	Silt	10/11		
<p>Type: Co-Concentration, D-Depletion, BM-Reduced Matrix, MS-Masked Sand Grains, PL-Pore Lining, M-Midline</p> <p>Hydric Soil Indicators:</p> <p>1. Histosol (A1) _____</p> <p>2. Histic Epipedon (A2) _____</p> <p>3. Black Histic (A3) _____</p> <p>4. Hydrogic Sulphide (A4) _____</p> <p>5. Stratified Layers (A5) _____</p> <p>6. 2 cm Muck (A10) (LRR N) _____</p> <p>7. Depleted Below Dark Surface (A11) _____</p> <p>8. Thick Dark Surface (A12) _____</p> <p>9. Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) _____</p> <p>10. Sandy Gleyed Matrix (S4) _____</p> <p>11. Sandy Redox (S5) _____</p> <p>12. Stagnant Matrix (S6) _____</p> <p>13. Restrictive Layer (if observed) _____</p> <p>Location: PL-Pore Lining, M-Midline</p> <p>Indicators for Problematic Hydric Soils:</p> <p>1. 2 cm Muck (A10) (MLRA 147) _____</p> <p>2. Coarse Prairie Redox (A16) _____</p> <p>3. MLRA 147, 148 _____</p> <p>4. Piedmont Floodplain Soils (F19) _____</p> <p>5. MLRA 136, 147 _____</p> <p>6. Very Shallow Dark Surface (F12) _____</p> <p>7. Other (Explain in Remarks) _____</p> <p>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</p> <p>Hydric Soil Present? Yes <u>Y</u> No <u>N</u></p>									
<p>Type _____</p> <p>Depth (inches) _____</p> <p>Remarks _____</p>									

VEGETATION (Five Strata) - Use scientific names of plants.

Core Stratum	(Plot Size: 30')	Alkaline % Cover	Dominant Species?	Indicator Status
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99				
100				

(Plot Size: 15')

Domestic Test Worksheet:

Number of Dominant Species _____

That Are OBL, FACN, or PAC: _____

Total Number of Dominant Species Across All Strata: _____

Percent of Dominant Species That Are OBL, FACN, or PAC: _____

Prevalence Index Worksheet:

Total % Cover of _____ Multiply by _____

OBL _____ FACN _____ PAC _____

	(Pet Size) _____ if	
Shrub Status:		= Total Cover
1	_____	0
2	_____	_____
FAG species	_____	0 x 3 =
FAQU species	_____	0 x 4 =
LPG species	_____	0 x 6 =
Column Totals:	_____	(A)
		(B)

Prevalence Index = B/A = _____

Hypophytic Vegetation Indicators

1. Round Test for Hypohydic Vaseilation

	Tree Stratum		(Plot size, 8')		
1	Incidence canopy	70	Y	FAIW	
2	Flowering proanthophytes	30	Y	FAW	
3	Woody sp.	6	N	NI	
4	Symplocos fuscula	3	N	OB	
5	Alseis porphyra	2	N	FAJU	
6	Tellium sp.	1	N	NI	
7	grasses/forbs	1	N	NI	
8					
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[illegible]

Demerol's (Nortylid) in both my arms have been OK & somewhat above!)

SOIL

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site	South Field Energy Interconnection Facilities	City/County	Mission Twp., Columbia Co.	Sampling Date	April 30, 2015
Applicant/Owner	Tetra Tech		State:	OH	Sampling Point: SP-14
Investigator(s):	B. Staley	Section, Township, Range	S22, T10N, R27W		
Location (elevation, town, etc.)	NI slope	Local Relief (elevation, north)	convex		
Substratum (LRR or MORA):	LRR NI	Lat.	40° 54' 37" N	Long.	-80° 20' 42" W
Soil Map Unit Name:	B/C - Barika (heavy clay loam, 15 to 25 percent slopes)		Datum: WGS84		
Are climatic/hydrologic conditions on the site typical for this time of year?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	(If no, explain in Remarks.)			
Are Vegetation _____, Soil _____ or Hydrology _____ significantly disturbed?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Are "Normal Circumstances" present?			
Are Vegetation _____, Soil _____ or Hydrology _____ naturally problematic?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	(If needed, explain any answers in Remarks.)			

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

	Yes	No	X		Yes	No	X
Hydrophytic Vegetation Present?	_____	_____	_____		_____	_____	_____
Hydric Soil Present?	_____	_____	_____		_____	_____	_____
Wetland Hydrology Present?	_____	_____	_____		_____	_____	_____
Remarks:							
Forest: Original name BS/dw/2 EP/0							

HYDROLOGY

Wetland Hydrology Indicators.		Secondary Indicators (inclusion of one is required)	
Primary Indicators (inclusion of one is required; check at least apply)		Surface Red Cracks (R8)	
Surface Water (A1)	True Aquatic Plants (B14)		
High Water Table (A2)	Hydrogen Sulfide Odor (C1)		
Saturation (A3)	Qualified Rhizophores on Living Roots (C3)		
Water Marks (B1)	Presence of Reduced Iron (C4)		
Sediment Deposits (B2)	Report Iron Reduction in Field Note (C2)		
Drift Deposits (B3)	This Rock Surface (C7)		
Artificial (B4) or Chert (B5)	Other (Specify in Remarks)		
Iron Deposits (B6)			
Inclusion of Vitellina on Aerial Imagery (B7)			
Water-Saturated Leaves (B8)			
Aquatic Ferns (B13)			
Field Observations.		Mediated Hydrology Present?	
Surface Water Present?	Yes _____ No _____	Yes _____ No _____	
Water Table Present?	Yes _____ No _____	Yes _____ No _____	
Saturation Present?	Yes _____ No _____	Yes _____ No _____	
(Indicates oxygen / time)			
Describe Recorded Date (at least gauge, monitoring net, aerial photo, previous inspections), if available			

Reviews.

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point				14	
Dominant Test Indicator:		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		50.00% (AB)			
Prevalence Index Worksheet:		Prevalence Index = B/A = 3.65536595			
Total % Cover of:		Multiply by:			
OBL species		0 x 1 = 0			
FACW species		5 x 2 = 10			
FACU species		32 x 3 = 96			
UPL species		86 x 4 = 344			
Column Totals:		123 (A) 450 (B)			
Strata Stratum (Plot Size 15')		Prevalence Index Worksheet:			
1		1. Rapid Test for Hydrophytic Vegetation			
2		2. Dominance Test is >60%			
3		3. Prevalence Index is <3.0*			
4		4. Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)			
5		Problematic Hydrophytic Vegetation (Explain)			
6		Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic:			
7		Definitions of Four Vegetation Strata			
1. Floristic Prevalence Index		Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.			
2. Shrub sp.		Shrub - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.			
3. Rose sp.		Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.			
4. Rose multiflora		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.			
5. Rose multiflora		Woody Vines - All woody vines greater than 3.28 ft in height.			
6. Rose multiflora		Hydrophytic Vegetation Present? Yes No X			
7. Rose multiflora		Remarks: (include photo numbers here or on a separate sheet.)			

SOIL

Sampling Point				14	
Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)					
Depth (feet)	Moisture	Color (moist)	%	Type	Remarks
0-1	7.5R 2.52	100		beam	
1-4	10YR 5/3	100		beam	
4-8	2.5Y 4/3	100		beam	
Type: C-Concentration, D-Disturbance, R-Radiation, S-Sand, M-Medium, L-Low, H-High, V-Very, O-Other					
Hydric Soil Indicators:					
1. Mottled (A1)					
2. Dark Surface (S7)					
3. Thin Dark Surface (S8) (MLRA 147, 148)					
4. Loamy Gleyed Matrix (F2)					
5. Dispersed Matrix (F3)					
6. Radiol Dark Surface (F8)					
7. Dispersed Dark Surface (F7)					
8. Radiol Dark Surface (F6)					
9. Sandy Mucky Material (S1) (LRR 4)					
10. MLRA 147, 148					
11. Sandy Gleyed Matrix (S4)					
12. Sandy Radiol (S5)					
13. Stripped Matrix (S6)					
14. Radiol Dark Surface (F13) (MLRA 134, 122)					
15. Piedmont Floodplain Soil (F16) (MLRA 144)					
16. Red Parent Material (F21) (MLRA 127, 147)					
Hydric Soil Present? Yes No X					
Remarks:					

SOIL

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

Depth (inches)	Moisture	Color (moist)	%	Type	Loc	Texture	Remarks
0-4	10YR 2/2	100				loam	
4-12	2.5Y 4/3	100				loam	

Sampling Point: 16

Hydric Soil Indicators

Type: C-Concentration, D-Dispersion, R-Retention, S-Saturated, T-Temporary, U-Unsaturation, V-Volatilization, W-Waterlogging, X-Xanthation, Y-Yellowing, Z-Zinc

Location: P.L. Pore Lining, M-Matrix, N-Nutrient, O-Oxygen, P-Pressure, Q-Quantity, R-Rate, S-Saturation, T-Temperature, U-Uniformity, V-Variation, W-Weight, X-Volume, Y-Yield, Z-Zinc

Indicators for Problematic Hydric Soils:

- Dark Surface (S7)
- Polymers Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Clayed Matrix (F2)
- Dispersed Matrix (F3)
- Redox Dark Surface (F4)
- Redox Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Nodules (F12) (MLRA 147, 148)
- MLRA 147, 148
- Umbic Surface (F13) (MLRA 147, 148)
- Pediment Floodplain Soil (F19) (MLRA 147, 148)
- Red Parent Material (F21) (MLRA 147, 148)

Indicators of hydric soil: vegetation and wetland hydrology must be present, unless disturbed or problematic

Resistivity Layer (if observed)

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: South Field Energy Interconnection Facilities City/County: Madison Twp, Columbia Co. Sampling Date: April 30, 2016

Applicant/Owner: Terra Tech State: OH Sampling Point: SP 16

Investigator(s): Section, Township, Range: S32, T10N, R7W

Landform (plateau, terrace, etc.): Local field (forest, stream, etc.): NW1 classification: none

Subregion (LRR or MRA): LRR N Lat: 40 54 57.2 Long: -80 71 17.9 Datum: WGS84

Soil Map Unit Name: GSC. GSC-Construction all bays, 6 to 15 percent slope

Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)

Are vegetation, soil, or hydrology significantly disturbed? Yes ☐ No ☒ (If needed, explain any problems in Remarks.)

Are vegetation, soil, or hydrology naturally problematic? Yes ☐ No ☒ (If needed, explain any problems in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ In the Sampled Area? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐ W-11

Remarks: PFO Original name B54672 SP6

HYDROLOGY

Wetland Hydrology Indicators:

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

- Surface Water (A1)
- High Water Table (A2)
- Water Marks (B1)
- Soil Deposition (B2)
- Dark Deposition (B3)
- Algal Mat or Crust (B4)
- Iron Deposition (B5)
- Iron Deposition (B6)
- Iron Deposition (B7)
- Water-Soaked Leaves (B8)
- Aquatic Fauna (B13)

Secondary Indicators (minimum of two required):

- Surface Soil Cracks (B9)
- Openly Vegetated Concave Surface (B10)
- Openly Vegetated Concave Surface (B11)
- Moist Tree Line (B16)
- Dry-Season Water Table (C2)
- Crystalline Surface (C3)
- Crystalline Surface (C4)
- Crystalline Surface (C5)
- Crystalline Surface (C6)
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- Crystalline Surface (C9)
- Crystalline Surface (C10)
- Crystalline Surface (C11)
- Crystalline Surface (C12)
- Crystalline Surface (C13)
- Crystalline Surface (C14)
- Crystalline Surface (C15)
- Crystalline Surface (C16)
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- Crystalline Surface (C94)
- Crystalline Surface (C95)
- Crystalline Surface (C96)
- Crystalline Surface (C97)
- Crystalline Surface (C98)
- Crystalline Surface (C99)
- Crystalline Surface (C100)

Field Observations:

Surface Water Present? Yes ☒ No ☐ Depth (inches): _____

Water Table Present? Yes ☒ No ☐ Depth (inches): _____

Soil Deposition Present? Yes ☒ No ☐ Depth (inches): _____

Dark Deposition Present? Yes ☒ No ☐ Depth (inches): _____

Algal Mat or Crust Present? Yes ☒ No ☐ Depth (inches): _____

Iron Deposition Present? Yes ☒ No ☐ Depth (inches): _____

Iron Deposition Present? Yes ☒ No ☐ Depth (inches): _____

Water-Soaked Leaves Present? Yes ☒ No ☐ Depth (inches): _____

Aquatic Fauna Present? Yes ☒ No ☐ Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants

Stratum	Plant Species	% Cover	Dominant Species?	Indicator Status
1	<i>Acer rubrum</i>	40	Y	FAC
2				
3				
4				
5				
6				
7				
Total Cover = 40				
Percent of Dominant Species = 80%				
Thal Area OBL, FACW, or FAC = 40%				
Prevalence Index Worksheet				
Total % Cover of:				
OBL species: 0 x 1 = 0				
FACW species: 0 x 2 = 0				
FAC species: 0 x 3 = 0				
FACU species: 0 x 4 = 0				
LPL species: 0 x 5 = 0				
Column Totals: 0 x 1 = 0				
Prevalence Index = 0				
Hydrophytic Vegetation Indicators				
1 - Rapid Test for Hydrophytic Vegetation				
X 2 - Dominance Test is >60%				
3 - Prevalence Index is >3.0				
4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)				
Problematic Hydrophytic Vegetation? (Explain)				
Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic:				
Definitions of Four Vegetation Strata:				
Tree - Woody plants, including vines, 3 ft. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.				
Shrub - Woody plants, including woody vines, approximately 20 ft. (6 m) or more in height and less than 3 ft. (7.6 cm) DBH.				
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 <input type="checkbox"/> No <input type="checkbox"/>				

SOIL

Depth (inches)	Color (moist)	% Color (moist)	Type	Texture	Remarks
0-3	2.5Y 4/1	85	C	clay loam	
3-9	2.5Y 4/1	85	C	clay loam	
9-14	2.5Y 4/1	85	C	clay loam	
Type: Co-Composition: D=Depletion, R=Reduced Matrix, M=Mineralized Sand Grains					
Hydric Soil Indicators:					
Heloid (A1)					
Mastic Epilith (A2)					
Black Mastic (A3)					
Hydrogen Sulfide (A4)					
Stratified Layers (A5)					
2 cm Muck (A10) (LRR 18)					
Displaced Below Dark Surface (A11)					
Thick Dark Surface (A12)					
Sandy Mucky Mineral (S1) (LRR 14)					
MLRA 147, 148					
Sandy Oxydized Matrix (S4)					
Sandy Retic (S5)					
Stripped Matrix (S6)					
Reticular Layer (if observed):					
Type: _____					
Depth (inches): _____					
Hydric Soil Present? Yes <input type="checkbox"/> No <input type="checkbox"/>					
Remarks:					

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: South Fork River, Interconnection, Pulaski County, Madison Top, Columbia Co Date: 5/14/15
 Applicant/Owner: Interstate 77 State: OH Sampling Point: SP17
 Investigator(s): LAWA, Szyre Section, Township, Range: S32, T10N, R2W Slope (%):
 Landform (hill, slope, terrace, etc.): Local relief (concave, convex, none):
 Subregion (RFR or NAR): UPR-NR2 Loc: W0443217 Long: 80.71463 Datum: WGS-84
 Soil Map Unit Name: 502-Galpin-Carbondale Site NWI classification:
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are vegetation or hydrology significantly disturbed? Yes X No
 Are vegetation or hydrology naturally problematic? (If needed, explain any answers in Remarks.) Yes X No

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

Hydrophytic Vegetation Present?	Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>		
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>		
Remarks:	<u>DEM - W-12</u>		

LS-W-3 SP3-1

HYDROLOGY

Wetland Hydrology Indicators		Secondary Indicators (not required if not required)	
Primary Indicators (Interim; if one is required, check all that apply)		Surface Soil Cracks (B6)	
<u>X</u> Surface Water (A1)		<u>X</u> Sparse Vegetation Concave Surface (B8)	
<u>X</u> High Water Table (A2)		<u>X</u> Drainage Patterns (B10)	
<u>X</u> Saturation (A3)		<u> </u> Moss Trim Lines (B16)	
<u> </u> Water Marks (B1)		<u> </u> Dry-Season Water Table (C2)	
<u> </u> Sediment Deposits (B2)		<u> </u> Presence of Reduced Iron (C4)	
<u> </u> Drift Deposits (B3)		<u> </u> Recurrent Iron Reduction in Tilled Soils (C6)	
<u> </u> Algal Mats or Crust (B4)		<u> </u> Saturation Visible on Aerial Imagery (C9)	
<u> </u> Iron Deposits (B5)		<u> </u> Stunted or Stressed Plants (D1)	
<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Geomorphic Position (D2)	
<u> </u> Water-Saturated Leaves (B9)		<u> </u> Shallow Aquifer (D3)	
<u> </u> Aquatic Fauna (B13)		<u>X</u> Microtopographic Relief (D4)	
<u> </u> FAC Neutral Test (D5)		<u> </u> FAC Neutral Test (D5)	
Field Observations			
Surface Water Present?	Yes <u>X</u> No <u> </u>	Depth (inches)	<u>1</u>
Water Table Present?	Yes <u>X</u> No <u> </u>	Depth (inches)	<u>0</u>
Saturation Present?	Yes <u>X</u> No <u> </u>	Depth (inches)	<u>0</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections) if available.			
Remarks:			

VEGETATION (Four Strata) - Use scientific names of plants.

Tree Stratum (Pho size <u>30'</u>)	Shrub Stratum (Pho size <u>15'</u>)	Herb Stratum (Pho size <u>5'</u>)	Woods/Vine Stratum (Pho size <u>30'</u>)
1. <u> </u>	1. <u> </u>	1. <u> </u>	1. <u> </u>
2. <u> </u>	2. <u> </u>	2. <u> </u>	2. <u> </u>
3. <u> </u>	3. <u> </u>	3. <u> </u>	3. <u> </u>
4. <u> </u>	4. <u> </u>	4. <u> </u>	4. <u> </u>
5. <u> </u>	5. <u> </u>	5. <u> </u>	5. <u> </u>
6. <u> </u>	6. <u> </u>	6. <u> </u>	6. <u> </u>
7. <u> </u>	7. <u> </u>	7. <u> </u>	7. <u> </u>
8. <u> </u>	8. <u> </u>	8. <u> </u>	8. <u> </u>
9. <u> </u>	9. <u> </u>	9. <u> </u>	9. <u> </u>
10. <u> </u>	10. <u> </u>	10. <u> </u>	10. <u> </u>
11. <u> </u>	11. <u> </u>	11. <u> </u>	11. <u> </u>
Accurate % Cover: <u> </u>	Accurate % Cover: <u> </u>	Accurate % Cover: <u> </u>	Accurate % Cover: <u> </u>
50% of total cover: <u> </u>	50% of total cover: <u> </u>	50% of total cover: <u> </u>	50% of total cover: <u> </u>
Total Cover: <u> </u>	Total Cover: <u> </u>	Total Cover: <u> </u>	Total Cover: <u> </u>
20% of total cover: <u> </u>	20% of total cover: <u> </u>	20% of total cover: <u> </u>	20% of total cover: <u> </u>
Hydrophytic Vegetation Indicators:	Hydrophytic Vegetation Indicators:	Hydrophytic Vegetation Indicators:	Hydrophytic Vegetation Indicators:
1. <u> </u>	1. <u> </u>	1. <u> </u>	1. <u> </u>
2. <u> </u>	2. <u> </u>	2. <u> </u>	2. <u> </u>
3. <u> </u>	3. <u> </u>	3. <u> </u>	3. <u> </u>
4. <u> </u>	4. <u> </u>	4. <u> </u>	4. <u> </u>
5. <u> </u>	5. <u> </u>	5. <u> </u>	5. <u> </u>
6. <u> </u>	6. <u> </u>	6. <u> </u>	6. <u> </u>
7. <u> </u>	7. <u> </u>	7. <u> </u>	7. <u> </u>
8. <u> </u>	8. <u> </u>	8. <u> </u>	8. <u> </u>
9. <u> </u>	9. <u> </u>	9. <u> </u>	9. <u> </u>
10. <u> </u>	10. <u> </u>	10. <u> </u>	10. <u> </u>
11. <u> </u>	11. <u> </u>	11. <u> </u>	11. <u> </u>
Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u> </u>	1. <u> </u>	1. <u> </u>	1. <u> </u>
2. <u> </u>	2. <u> </u>	2. <u> </u>	2. <u> </u>
3. <u> </u>	3. <u> </u>	3. <u> </u>	3. <u> </u>
4. <u> </u>	4. <u> </u>	4. <u> </u>	4. <u> </u>
5. <u> </u>	5. <u> </u>	5. <u> </u>	5. <u> </u>
6. <u> </u>	6. <u> </u>	6. <u> </u>	6. <u> </u>
7. <u> </u>	7. <u> </u>	7. <u> </u>	7. <u> </u>
8. <u> </u>	8. <u> </u>	8. <u> </u>	8. <u> </u>
9. <u> </u>	9. <u> </u>	9. <u> </u>	9. <u> </u>
10. <u> </u>	10. <u> </u>	10. <u> </u>	10. <u> </u>
11. <u> </u>	11. <u> </u>	11. <u> </u>	11. <u> </u>
Definitions of Four Vegetation Strata	Definitions of Four Vegetation Strata	Definitions of Four Vegetation Strata	Definitions of Four Vegetation Strata
Tree - Woody plants, excluding vines, 3 ft. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	Tree - Woody plants, excluding vines, 3 ft. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	Tree - Woody plants, excluding vines, 3 ft. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	Tree - Woody plants, excluding vines, 3 ft. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft. (1 m) tall.	Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft. (1 m) tall.	Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft. (1 m) tall.	Sapling/Shrub - Woody plants, excluding vines, 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.	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.
Woody vine - All woody vines greater than 3.28 ft. in height.	Woody vine - All woody vines greater than 3.28 ft. in height.	Woody vine - All woody vines greater than 3.28 ft. in height.	Woody vine - All woody vines greater than 3.28 ft. in height.
Hydrophytic Vegetation Present?	Hydrophytic Vegetation Present?	Hydrophytic Vegetation Present?	Hydrophytic Vegetation Present?
Yes <u> </u> No <u> </u>	Yes <u> </u> No <u> </u>	Yes <u> </u> No <u> </u>	Yes <u> </u> No <u> </u>
Remarks: (Include photo numbers here or on a separate sheet)			

Sampling Point 17

[illegible]

Madison Twp!
Columbian Co

Sothfield Energy Interconnection Facility City/County Sampling Date 5/4/15
Investigator(s) J. LAURA SEAY State OH Sampling Point 18
Application Owner Tetra Tech Section Township Range S32 T10N R2W Slope (%)
Landform (Mudstone, terrace, etc.) Local relief (concave, convex, none) Datum WGS84
Stratigraphic Unit Name or M.U./R. LBR N 24 Lat. 40.677044 Long -80.713715 NW classification
USGS Geologic Map Unit Name GSC Valley-Cutthroat silt loam 15 percent slopes
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks)
Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal" conditions present? Yes X No
Vegetation Soil or Hydrology naturally problematic? (If needed, explain any answers in Remarks)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transect's, important features, etc

Hydrophytic Vegetation Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Hydric Soil Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Wetland Hydrology Present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks: Forest			
LS 3-2			

HYDROLOGY

Wetland Hydrology Indicators		Secondary Indicators (Minimum of two required)	
Primary Indicators (Minimum of one is required, check all that apply)			
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)	
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B8)	
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Drainage Patterns (B10)	
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Trim Lines (B16)	
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Dry-Season Water Table (C2)	
Drift Deposits (B3)	Thin Muck Surface (C7)	Crayfish Burrows (C8)	
Apical Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)	
Iron Deposits (B5)		Stunted or Stressed Plants (D1)	
Inundation Visible on Aerial Imagery (B7)		Geomorphic Position (D2)	
Water Stained Leaves (B9)		Shallow Aquatic (D3)	
Aquatic Fauna (B13)		Microtopographic Relief (D4)	
		FAC-Neutral Test (D5)	
Field Observations			
Surface Water Present?	Yes _____ No _____		
Water Table Present?	Yes _____ No _____		
Saturation Present?	Yes _____ No _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections, if available)		Welland Hydrology Present? Yes _____ No <u>X</u>	
Remarks			

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project: South Field Energy Interconnection Facility County: Mecklenburg State: NC Sampling Date: 5/4/15
 Applicant/Owner: TECH-1 Section: ION, E2W Subregion (LRR or MRA): SP-13
 Investigator(s): LOUAYE, Sanye Local relief (concave, convex, none): CONCAVE Slope (%): 10
 Landform (ridges, terraces, etc.): None Long: 80 17 06.5 Datum: NAD83
 Soil Map Unit Name: G.O.C. Lat: 40 04 38.6 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 anomalies in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>		
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>		
Remarks:	<u>pen in w-13</u>		

SP13-3

Wetland Hydrology Indicators		Secondary Indicators (Minimum of two required)	
Primary Indicators (Minimum of one is required, check all that apply)		Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> Surface Water (A1)		Sparsely Vegetated Concave Surface (B8)	
<input checked="" type="checkbox"/> High Water Table (A2)		Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)		Moss Trim Lines (B16)	
Water Marks (B1)		Dry-Season Water Table (C2)	
Sediment Deposits (B2)		Crayfish Burrows (C3)	
Drift Deposits (B3)		Saturation Visible on Aerial Imagery (C9)	
Aquatic Plant or Grass (B4)		Stunted or Stressed Plants (D1)	
Iron Deposits (B5)		Geomorphic Position (D2)	
Floodation Visible on Aerial Imagery (B7)		Shallow Aquifer (D3)	
Water Stained Leaves (B9)		Microtopographic Relief (D4)	
Aquatic Fauna (B13)		FAC-Neutral Test (D5)	
Field Observations		Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>
Surface Water Present?	Yes <u>X</u> No <u> </u>	Depth (Inches)	1" <u> </u> 0" <u> </u>
Water Table Present?	Yes <u>X</u> No <u> </u>	Depth (Inches)	0" <u> </u> 0" <u> </u>
Saturation Present?	Yes <u>X</u> No <u> </u>	Depth (Inches)	0" <u> </u> 0" <u> </u>
Includes Capillary Fringe?			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available			
Remarks:			

VEGETATION (Four Strata) - Use scientific names of plants

Type Stratum (Photo size: <u>30'</u>)	Abundant Species? <u> </u>	Indicator Species? <u> </u>	Indicator Species? <u> </u>
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>
Savanna/Straw Stratum (Photo size: <u>15'</u>)			
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>
Herb Stratum (Photo size: <u>15'</u>)			
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>
7. <u> </u>	<u> </u>	<u> </u>	<u> </u>
8. <u> </u>	<u> </u>	<u> </u>	<u> </u>
9. <u> </u>	<u> </u>	<u> </u>	<u> </u>
10. <u> </u>	<u> </u>	<u> </u>	<u> </u>
11. <u> </u>	<u> </u>	<u> </u>	<u> </u>
Woody Vine Stratum (Photo size: <u> </u>)			
1. <u> </u>	<u> </u>	<u> </u>	<u> </u>
2. <u> </u>	<u> </u>	<u> </u>	<u> </u>
3. <u> </u>	<u> </u>	<u> </u>	<u> </u>
4. <u> </u>	<u> </u>	<u> </u>	<u> </u>
5. <u> </u>	<u> </u>	<u> </u>	<u> </u>
6. <u> </u>	<u> </u>	<u> </u>	<u> </u>
Remarks: (Include photo numbers here or on a separate sheet.)			

South Field Facility (to Yellow Creek Township/Columbiare, Co. 14 NOV 2012

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

HYDROLOGY		Secondary Indicators (Minimum of two from each)	
Wellhead Hydrology Indicators			
Primary Indicators (Minimum of one is required; check all that apply)			
Surface Water (A1)	Time Aquatic Plants (B14)	Surface Soil Cracks (B8)	
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Sparsely Vegetated Concave Surface (B9)	
Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizosphere on Living Roots (C3)	Drainage Patterns (B10)	
Water Marks (B1)	Presence of Reduced Iron (C4)	Moss Thin Lines (B16)	
Sediment Deposits (B2)	Recent Iron Reduction in Thin Silt (C6)	Dry Season Water Table (C2)	
Drift Deposits (B3)	<input checked="" type="checkbox"/> Thin Muck Surface (C7)	Crayfish Burrows (C8)	
Algal Mat or Crust (B4)	Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9)	
Iron Deposits (B5)		Stunted or Stressed Plants (D1)	
Reduction Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
Water Stained Leaves (B9)		Shallow Aquifer (D3)	
Aquatic Fauna (B13)		Microtopographic Relief (D4)	
		MAC-Neutral Test (D5)	

US Army Corps of Engineers

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Sampling Point: SP-21

U.S. Army Corps of Engineers

Eastern Mountains and Piedmont - Version 2.0

Sampling Point: SP-21

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

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Madison Twp /
Calloway National Co.
Project: South Field Energy Interconnection Feasibility Date: 5/14/15
Applicant/Owner: Tetra Tech State: OH Sampling Point: 22
Investigator(s): Laura Sykes Section, Township Range: S32, T20N, R20W Slope (ft):
Local relief (contour, corner, note) Datum: WGS84
Elevation (RR or MSLR): 638 N 124 Lat: 40 44 06.7 Long: -80 7 59.7 NW1 classification:
Soil Map Unit Name: SicC No (if no expln in Remarks.)
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No
Are Vegetation Soil or Hydrology Soil significantly disturbed? X
Are Vegetation Soil or Hydrology Soil naturally problematic? X
Are Vegetation Soil or Hydrology Soil naturally problematic? X

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> W-110
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
Remarks: DEM in W-110			
LW 7-10 SP 3-5			

HYDROLOGY

Wetland Hydrology Indicators		Secondary Indicators (Minimum of two required)	
Primary Indicators (Minimum of one is required, check all that apply)		Surface Soil Cracks (B6)	
<input type="checkbox"/> Surface Water (A1)		<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> High Water Table (A2)		<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)		<input type="checkbox"/> Moss Thin Lines (B16)	
<input type="checkbox"/> Water Marks (B1)		<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Sediment Deposits (B2)		<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Drift Deposits (B3)		<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Aerial Melt or Crust (B4)		<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Shallow Aquifer (D3)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Microphotographic Resid (D4)	
<input type="checkbox"/> Aquatic Fauna (B13)		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Depth (inches)	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Depth (inches)	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Depth (inches) <input checked="" type="checkbox"/>	
(includes ephemeral flows)		Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Describe Recordable Data (stream gauge, flowmoting well, aerial photos, previous inspections) if available:			

Remarks:

22
Sampling Point

Tree Stratum (Plot size: 30')		Dominant Indicator		Dominance Test worksheet	
		% Cover		Number of Dominant Species That Are OBL, FACW, or FAC	
1.					(A)
2.					(B)
3.					(A/B)
4.					
5.					
6.					
7.					
Savanna/Strub Stratum (Plot size: 15')		50% of total cover		Prevalence Index worksheet	
		20% of total cover		Total # Cover of	
1.				OBL species	x1 =
2.				FACW species	x2 =
3.				FAC species	x3 =
4.				FACU species	x4 =
5.				UPL species	x5 =
6.				Column Totals:	(A)
7.				Prevalence Index = B/A =	(B)
8.				Hydrophytic Vegetation Indicators:	
9.				1 - Rapid Test for Hydrophytic Vegetation	
				2 - Dominance Test is >50%	
				3 - Prevalence Index is >3.0	
				4 - Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet)	
				Problematic Hydrophytic Vegetation? (Explain)	
Herb Stratum (Plot size: 5')		50% of total cover		Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
		20% of total cover		Definitions of Four Vegetation Strata	
1.				Tree - Woody plants, excluding vines, 3 in (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2.				Shrub - Woody plants, excluding vines, less than 3 in DBH and greater than or equal to 3.28 ft (1 m) tall.	
3.				Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4.				Woody Vine - All woody vines greater than 3.28 ft in height.	
5.				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	
Wooded Vine Stratum (Plot size: 30')		50% of total cover			
		20% of total cover			
1.					
2.					
3.					
4.					
5.					

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

Sampling Point: 12

SOIL

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: South Fork Energy Interconnection Facility Cherokee Co GA 5/14/15
 Applicant/Owner: Inter Tech OH Sampling Point 223
 Investigator(s): LAURA SAYRE Section, Township, Range S30, T9N, R2W Slope (N)
 Landform (hillside, terrace, etc.): Local relief (concave, convex, none)
 Subregion (LRR or MRA): LEB N12W Lat: 40.410799 Long: -80.715321 Datum: NAD83
 Soil Map Unit Name: SC-Cypripedium silt 160m to 190m (ent) slope NW classification
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No
 Are vegetation/soil/hydrology significantly disturbed? Yes No
 Are vegetation/soil/hydrology naturally problematic? Yes No
 Are "Normal Circumstances" present? Yes No
 (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 <u> </u> No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u> </u>
Hydric Soil Present?	Yes <u> </u> No <u> </u>		
Wetland Hydrology Present?	Yes <u> </u> No <u> </u>		
Remarks:	<u>pasture/lawn</u>		

LS SP3-7

HYDROLOGY

Wetland Hydrology Indicators		Secondary Indicators (maximum of two required)	
Primary Indicators (minimum of two is required; check all that apply)			
Surface Water (A1)	True Aquatic Plants (B14)	Surface Soil Cracks (B6)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)	Moss Trim Lines (B16)
Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Dry-Season Water Table (C2)	Crayfish Burrows (C8)
Water Marks (B1)	Presence of Reduced Iron (C4)	Saturation Visible on Aerial Imagery (C9)	Stunted or Stressed Plants (D1)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Shallow Aquifer (D3)	Microtopographic Relief (D4)
Drift Deposits (B3)	Thin Muck Surface (C7)	Other (Explain in Remarks)	FAC-Neutral Test (D5)
Agal Mat or Crust (B4)			
Iron Deposits (B5)			
Frundulion Visible on Aerial Imagery (B7)			
Water-Stained Leaves (B9)			
Aquatic Fauna (B13)			
Field Observations			
Surface Water Present?	Yes <u> </u> No <u> </u>	Depth (inches)	
Water Table Present?	Yes <u> </u> No <u> </u>	Depth (inches)	
Saturation Present?	Yes <u> </u> No <u> </u>	Depth (inches)	
Includes capillary fringe?	Yes <u> </u> No <u> </u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available			
Remarks			

VEGETATION (Four Strata) - Use scientific names of plants

Tree Stratum (Photo size 30')	Shrub Stratum (Photo size 15')	Herb Stratum (Photo size 5')	Woody Vine Stratum (Photo size 20')
1. <u> </u>	1. <u> </u>	1. <u> </u>	1. <u> </u>
2. <u> </u>	2. <u> </u>	2. <u> </u>	2. <u> </u>
3. <u> </u>	3. <u> </u>	3. <u> </u>	3. <u> </u>
4. <u> </u>	4. <u> </u>	4. <u> </u>	4. <u> </u>
5. <u> </u>	5. <u> </u>	5. <u> </u>	5. <u> </u>
6. <u> </u>	6. <u> </u>	6. <u> </u>	6. <u> </u>
7. <u> </u>	7. <u> </u>	7. <u> </u>	7. <u> </u>
8. <u> </u>	8. <u> </u>	8. <u> </u>	8. <u> </u>
9. <u> </u>	9. <u> </u>	9. <u> </u>	9. <u> </u>
10. <u> </u>	10. <u> </u>	10. <u> </u>	10. <u> </u>
11. <u> </u>	11. <u> </u>	11. <u> </u>	11. <u> </u>
50% of total cover <u>15</u>	50% of total cover <u>5</u>	50% of total cover <u>50</u>	50% of total cover <u>20</u>
20% of total cover <u> </u>	20% of total cover <u> </u>	20% of total cover <u> </u>	20% of total cover <u> </u>
Prevalence Index = $\frac{BIA}{\sum (x_i)}$ = <u>3.97</u>	Prevalence Index = $\frac{BIA}{\sum (x_i)}$ = <u> </u>	Prevalence Index = $\frac{BIA}{\sum (x_i)}$ = <u> </u>	Prevalence Index = $\frac{BIA}{\sum (x_i)}$ = <u> </u>
Hydrophytic Vegetation Indicators:	Hydrophytic Vegetation Indicators:	Hydrophytic Vegetation Indicators:	Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation	1 - Rapid Test for Hydrophytic Vegetation	1 - Rapid Test for Hydrophytic Vegetation	1 - Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%	2 - Dominance Test is >50%	2 - Dominance Test is >50%	2 - Dominance Test is >50%
3 - Prevalence Index is >3.0	3 - Prevalence Index is >3.0	3 - Prevalence Index is >3.0	3 - Prevalence Index is >3.0
4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)	4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)	4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)	4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
Problematic Hydrophytic Vegetation (Explain)	Problematic Hydrophytic Vegetation (Explain)	Problematic Hydrophytic Vegetation (Explain)	Problematic Hydrophytic Vegetation (Explain)
Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.	Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.
Definitions of Four Vegetation Strata:	Definitions of Four Vegetation Strata:	Definitions of Four Vegetation Strata:	Definitions of Four Vegetation Strata:
Tree - Woody plants, excluding vines, 3 in (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	Tree - Woody plants, excluding vines, 3 in (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	Tree - Woody plants, excluding vines, 3 in (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	Tree - Woody plants, excluding vines, 3 in (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Shrub - Woody plants, excluding vines, less than 3 in DBH and greater than or equal to 3.28 ft (1 m) tall.	Shrub - Woody plants, excluding vines, less than 3 in DBH and greater than or equal to 3.28 ft (1 m) tall.	Shrub - Woody plants, excluding vines, less than 3 in DBH and greater than or equal to 3.28 ft (1 m) tall.	Shrub - Woody plants, excluding vines, 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.	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vine - All woody vines greater than 3.28 ft in height.	Woody vine - All woody vines greater than 3.28 ft in height.	Woody vine - All woody vines greater than 3.28 ft in height.	Woody vine - All woody vines greater than 3.28 ft in height.
Hydrophytic Vegetation Present?	Hydrophytic Vegetation Present?	Hydrophytic Vegetation Present?	Hydrophytic Vegetation Present?
Yes <u> </u> No <u> </u>	Yes <u> </u> No <u> </u>	Yes <u> </u> No <u> </u>	Yes <u> </u> No <u> </u>
Remarks (include photo numbers here or on a separate sheet)			

VEGETATION (Five Strata) - Use scientific names of plants.

Tree Stratum (Pht size: 30')		Shrub Stratum (Pht size: 15')		Herb Stratum (Pht size: 15')		Woody Vine Stratum (Pht size: 30')	
Indicator	Abundance	Indicator	Abundance	Indicator	Abundance	Indicator	Abundance
1. <i>Quercus</i>	10	1. <i>Quercus</i>	10	1. <i>Quercus</i>	10	1. <i>Quercus</i>	10
2. <i>Pinus</i>	10	2. <i>Pinus</i>	10	2. <i>Pinus</i>	10	2. <i>Pinus</i>	10
3. <i>Juniperus</i>	10	3. <i>Juniperus</i>	10	3. <i>Juniperus</i>	10	3. <i>Juniperus</i>	10
4. <i>Cornus</i>	10	4. <i>Cornus</i>	10	4. <i>Cornus</i>	10	4. <i>Cornus</i>	10
5. <i>Lonicera</i>	10	5. <i>Lonicera</i>	10	5. <i>Lonicera</i>	10	5. <i>Lonicera</i>	10
6. <i>Asplenium</i>	10	6. <i>Asplenium</i>	10	6. <i>Asplenium</i>	10	6. <i>Asplenium</i>	10
7. <i>Adiantum</i>	10	7. <i>Adiantum</i>	10	7. <i>Adiantum</i>	10	7. <i>Adiantum</i>	10
8. <i>Polypodium</i>	10	8. <i>Polypodium</i>	10	8. <i>Polypodium</i>	10	8. <i>Polypodium</i>	10
9. <i>Samolus</i>	10	9. <i>Samolus</i>	10	9. <i>Samolus</i>	10	9. <i>Samolus</i>	10
10. <i>Utricularia</i>	10	10. <i>Utricularia</i>	10	10. <i>Utricularia</i>	10	10. <i>Utricularia</i>	10
11. <i>Utricularia</i>	10	11. <i>Utricularia</i>	10	11. <i>Utricularia</i>	10	11. <i>Utricularia</i>	10
12. <i>Utricularia</i>	10	12. <i>Utricularia</i>	10	12. <i>Utricularia</i>	10	12. <i>Utricularia</i>	10
Total Cover = 100		Total Cover = 100		Total Cover = 100		Total Cover = 100	
Remarks: (Include photo numbers here or on a separate sheet.)		Remarks: (Include photo numbers here or on a separate sheet.)		Remarks: (Include photo numbers here or on a separate sheet.)		Remarks: (Include photo numbers here or on a separate sheet.)	

SOIL

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.)		Hydric Soil Indicators		Hydric Soil Present?	
Depth (feet)	Moisture	Color (moist)	%	Texture	Remarks
0-1	10YR 2/1	10YR 2/1	10	fine	
1-4	10YR 3/1	10YR 2/2	10	fine	
4-7	10YR 3/1	10YR 2/2	10	fine	
7-10	10YR 3/1	10YR 2/2	10	fine	
10-13	10YR 3/1	10YR 2/2	10	fine	
<p>Type: C-Concentration, D-Dispersion, R-Radiation, M-Mass, S-Sand Grains</p> <p>Hydric Soil Indicators:</p> <p>1. Mottled (A1) _____ Dark Surface (S7)</p> <p>2. Black Histic (A2) _____ Polyhedral Below Surface (S8) (MLRA 147, 148)</p> <p>3. Black Histic (A3) _____ Thin Dark Surface (S9) (MLRA 147, 148)</p> <p>4. Hydrogen Sulphide (A4) _____ X Lowery Gleyed Matrix (F2)</p> <p>5. Striped Layers (A5) _____ X Depressed Matrix (F3)</p> <p>6. 2 cm Muck (A10) (LRR 14) _____ Radiol Dark Surface (F8)</p> <p>7. Thick Dark Surface (A11) _____ Radiol Dark Surface (F7)</p> <p>8. Radiol Dark Surface (A12) _____ Radiol Dark Surface (F7)</p> <p>9. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>10. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>11. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>12. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>13. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>14. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>15. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>16. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>17. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>18. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>19. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>20. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>21. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>22. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>23. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>24. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>25. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>26. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>27. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>28. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>29. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>30. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>31. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>32. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>33. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>34. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>35. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>36. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>37. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>38. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>39. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>40. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>41. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>42. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>43. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>44. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>45. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>46. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>47. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>48. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>49. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>50. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>51. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>52. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>53. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>54. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>55. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>56. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>57. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>58. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>59. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>60. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>61. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>62. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>63. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>64. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>65. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>66. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>67. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>68. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>69. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>70. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>71. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>72. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>73. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>74. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>75. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>76. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>77. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>78. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>79. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>80. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>81. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>82. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>83. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>84. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>85. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>86. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>87. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>88. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>89. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>90. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>91. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>92. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>93. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>94. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>95. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>96. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>97. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>98. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>99. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p> <p>100. Sandy Mucky Material (B1) (LRR 14) _____ Radiol Dark Surface (F7)</p>					

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: South Field Energy Interconnection Facility City/County: Yadon Creek Twp., Columbus Co. Sampling Date: April 30, 2015
 Applicant/Owner: _____ State: OH Sampling Point: SP-25
 Investigator(s): B. Sibley Section, Township Range: S30, T2N, R2W
 Landform (paleo, terraces, etc.): mixed Local Relief (escarpment, terrace, etc.): _____
 Subregion (LRR or MLRA): LRR 1N Loc. 40 54035 Long. 80 708538 Datum: WGS84
 Soil Map Unit Name: H1A - Hilly alluvium, 0 to 2 percent slopes, frequently flooded MHV classification: PRA1A
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Yes ☒ 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 ☐ Is the Sampled Area within a Wetland? Yes ☒ No ☐
 Hydric Soil Present? Yes ☒ No ☐
 Wetland Hydrology Present? Yes ☒ No ☐
 Remarks: _____
 Maintained Lawn: Trash appears to be buried at the sample plot location, which is the probable cause of the upland mound in between two lobes of the wetland. Original

HYDROLOGY

Wetland Hydrology Indicators:
 Primary Indicators (minimum of one is required, check all that apply):
 Surface Water (A1) ☒ Truss Aquatic Plants (B1A) ☐
 High Water Table (A2) ☒ Hydrogen Sulfide Color (C1) ☐
 Saturation (A3) ☒ Outflow Recirculation on Living Roots (C2) ☐
 Water Marks (B1) ☒ Presence of Reduced Iron (C4) ☐
 Sediment Deposits (B2) ☒ Recent Iron Reduction in Tilled Soils (C5) ☐
 Drift Deposits (B3) ☒ Thin Muck Surface (C7) ☐
 Algal Mat or Crust (B4) ☒ Other (Explain in Remarks) _____
 Iron Deposits (B5) ☒
 Irrigation Valves on Aerial Imagery (B7) ☐
 White-Shouldered Leaves (B8) ☐
 Aquatic Fauna (B13) ☐
 Secondary Indicators (minimum of two required):
 Surface Soil Cracks (B6) ☐
 Sparsely Vegetated Concave Surface (B8) ☐
 Orange Pediment (B10) ☐
 Mossy Tree Lanes (B16) ☐
 Dry-Season Water Table (C2) ☐
 Crayfish Burrows (C3) ☐
 Saturation Visible on Aerial Imagery (C9) ☐
 Reduced or Stagnant Plants (D1) ☐
 Geomorphic Position (D2) ☐
 Spikes Aquatic (D3) ☐
 Microtopographic Relief (D4) ☐
 FAC-Natural Test (D9) ☐

Field Observations:
 Surface Water Present? Yes ☒ No ☐ Depth (inches): _____
 Water Table Present? Yes ☒ No ☐ Depth (inches): _____
 Saturation Present? Yes ☒ No ☐ Depth (inches): _____
 Includes capillary fringe? Yes ☒ No ☐
 Describe Recorded Data (pneum gauge, monitoring well, aerial photos, previous inspections) if available:

 Remarks: _____

VEGETATION (Five Strata) - Use scientific names of plants.

Sampling Point: 25

Tree Stratum (Plot Size: 30')	Shrub Stratum (Plot Size: 15')	Herb Stratum (Plot Size: 5')	Wetland Hydrology Present?
1. <u> </u>	1. <u> </u>	1. <u> </u>	<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>
2. <u> </u>	2. <u> </u>	2. <u> </u>	
3. <u> </u>	3. <u> </u>	3. <u> </u>	
4. <u> </u>	4. <u> </u>	4. <u> </u>	
5. <u> </u>	5. <u> </u>	5. <u> </u>	
6. <u> </u>	6. <u> </u>	6. <u> </u>	
7. <u> </u>	7. <u> </u>	7. <u> </u>	
<p>Domestic Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A) Total Number of Dominant Species Across All Strata: 1 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00% (AB)</p>			
<p>Prevalence Index Worksheet: Total % Cover of: OBL species: 0 ± 1 = 0 FACW species: 0 ± 2 = 0 FAC species: 0 ± 3 = 0 FACU species: 105 ± 4 = 420 LPL species: 0 ± 6 = 0 Column Totals: 105 (A) 420 (B)</p>			
<p>Prevalence Index = B/A = 4</p>			
<p>Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is >3.0 4 - Morphological Adaptations? (Provide supporting data in Remarks or on a separate sheet) 5 - Problematic Hydrophytic Vegetation (Explain)</p>			
<p>1. Indication of hydric soil and wetland hydrology must be present, unless described as problematic. 2. Definitions of Four Vegetation Strata: Tree - Woody plants, including vines, 3 ft. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Shrub - Woody plants, excluding woody vines, approximately 20 ft. (6 m) or more in height and less than 3 ft. (7.6 cm) DBH. Herb - Woody plants, excluding woody vines, approximately 3 to 20 ft. (1 to 6 m) in height. 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.</p>			
<p>Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/></p>			
<p>Remarks: (Include photo numbers here or on a separate sheet.)</p>			

Eastern Mountains and Piedmont - Version 2.0

26
Sampling Point

Trees Stratum (Plot size: _____)	Absolute % Cover	Dominant Species
1 _____	_____	_____
2 _____	_____	_____
3 _____	_____	_____
4 _____	_____	_____
5 _____	_____	_____
6 _____	_____	_____
7 _____	_____	_____

50% of total cover = Total Cover
20% of total cover

Savanna Stratum (Plot size: 15' x 15')

1 <i>Rubus allegheniensis</i>	15	Y	FACU
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____

50% of total cover = Total Cover
20% of total cover

Herb Stratum (Plot size: 5' x 1')

1 <i>Dactylis glomerata</i>	80	Yes	FACU
2 <i>Solidago canadensis</i>	10	No	FACU
3 <i>Silene cucurbitaria</i>	5	No	FACU
4 <i>Potentilla simplex</i>	5	No	FACU
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____
9 _____	_____	_____	_____
10 _____	_____	_____	_____
11 _____	_____	_____	_____

50% of total cover = Total Cover
20% of total cover

Woody Vine Stratum (Plot size: _____)

1 _____	_____	_____	_____
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____

50% of total cover = Total Cover
20% of total cover

Remarks: (include photo numbers here if on a separate sheet.)

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: _____ (AB)
 Prevalence Index worksheet
 Total % Cover of _____
 OBL species _____ x 1 = _____
 FACW species _____ x 2 = _____
 FAC species _____ x 3 = _____
 UPL species _____ x 4 = _____
 Column Totals: _____ (A) _____ (B)
 Prevalence Index = B/A = _____
 Hydrophytic Vegetation Indicators:
 1 - Rapid Test for Hydrophytic Vegetation
 2 - Dominance Test Is >50%
 3 - Prevalence Index Is <3.0
 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet)
 Problematic Hydrophytic Vegetation? (Explain) _____
 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
 Definitions of Four Vegetation Strata:
 Tree - Woody plants, excluding vines 3 in (7.6 cm) or more in diameter at breast height (DBH), regardless of height
 Sapling/Shrub - Woody plants, excluding vines, less than 3 in DBH and greater than 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

Sampling Point

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: South Field Energy Interconnection Facilities City/County: Yellow Creek Twp, Columbia Co Sampling Date: April 30, 2015
 Applicant/Owner: B. Bledy, L. Sayre State: OH Sampling Point: SP-27
 Investigation(s): Section, Township, Range S32, T10N, R07W
 Landform (Plateau, terrace, etc.): Local Relief (concave, convex, none): concave Slope (%): WGS84
 Subregion (LRR or MAZ): LRR N Lat: 40 34.0289 Long: -80 70.959 Datum: WGS84
 Soil Map Unit Name: GrS - Depth all loam, 2 to 6 percent slope NW1 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? Yes X No Are "Normal Circumstances" present? Yes X No
 Are vegetation, soil, or hydrology naturally problematic? Yes X No (If needed, explain any stresses in Remarks.)

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

Hydrophytic Vegetation Present? Yes X No In the Sampled Area within a Wetland? Yes X No
 Hydric Soil Present? Yes X No Wetland? Yes X No
 Wetland Hydrology Present? Yes X No Wetland? Yes X No
 Remarks: SP-27. Original name bade 25504.

HYDROLOGY

Wetland Hydrology Indicators:
 Primary indicators (confirmation of one is required, check all that apply):
☒ Surface Water (A1) ☒ High Water Table (A2) ☒ True Aquatic Plants (B14) ☒ Surface Soil Cracks (B6)
☒ Sediment (A3) ☒ Hydrophytic Soils (C1) ☒ Seasonally Floated Concave Surface (B8)
☒ Water Marks (B1) ☒ Presence of Rhizomes on Living Banks (C3) ☒ Mean Tide Lines (B19) ☒ Drainage Patterns (B10)
☒ Sediment Deposits (B2) ☒ Presence of Reduced Iron (C4) ☒ Dry-Season Water Ties (C2) ☒ Crayfish Burrows (C5)
☒ Soil Discrete (B3) ☒ Plant Root Reduction in Tilled Soil (C6) ☒ Saturation Visible on Aerial Imagery (C8)
☒ Algal Mat or Crust (B4) ☒ Thin Muck Surface (C7) ☒ Stained or Stained Plants (B11) ☒ Scarcity of Cyperus (C9)
☒ Iron Deposits (B5) ☒ Other Evidence in Remarks ☒ Gasometric Pressure (D2) ☒ Gasometric Pressure (D1)
☒ Inundation Visible on Aerial Imagery (B7) ☒ Shadow Analysis (D3) ☒ Gasometric Pressure (D4)
☒ Water-Stranded Leaves (B9) ☒ Microtopographic Relief (D4) ☒ Microtopographic Relief (D4)
☒ Aquatic Fauna (B13) ☒ pH-Calcium Test (D4)

Field Observations:
 Surface Water Present? Yes X No Depth (inches): 1
 Water Table Present? Yes X No Depth (inches):
 Saturation Present? Yes X No Depth (inches):
 (Include capillary fringe)
 Date(s) Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections) If available

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Tree Stratum (Pht size: 30')	Shrub Stratum (Pht size: 15')	Herb Stratum (Pht size: 8')	Woody Vine Stratum (Pht size: 30')	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
1	1	1	1	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
2	2	2	2	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
3	3	3	3	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
4	4	4	4	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
5	5	5	5	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
6	6	6	6	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
7	7	7	7	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
8	8	8	8	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
9	9	9	9	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
10	10	10	10	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
11	11	11	11	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
12	12	12	12	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
13	13	13	13	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
14	14	14	14	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
15	15	15	15	Indicator	Abundance % Cover	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC	Percent of Dominant Species	Threats OBL, FACM, or FAC	Number of Dominant Species	Threats OBL, FACM, or FAC
Remarks: (include photo numbers here or on a separate sheet.)													

Sampling Point 27

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

[illegible]

VEGETATION (Five Strata) - Use scientific names of plants.

Stratum	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
<p>Stratum Summary: (Plot size: 15')</p> <p>1. <i>Rosa multiflora</i> (Plot size: 15') 10 Y FACU</p> <p>2. <i>Sambucus sp.</i> 10 Y NI</p> <p>3. <i>Physocarpus opulifolius</i> 5 Y FACU</p> <p>4. <i>Urtica dioica</i> 20 Y OBL</p> <p>5. <i>Lonicera xylosteum</i> 20 Y OBL</p> <p>6. <i>Pennicillaria angustata</i> 10 N OBL</p> <p>7. <i>Rosa multiflora</i> 5 N FACU</p> <p>8. <i>Rosa multiflora</i> 5 N FACU</p> <p>9. <i>Rosa multiflora</i> 5 N FACU</p> <p>10. <i>Rosa multiflora</i> 5 N FACU</p> <p>11. <i>Rosa multiflora</i> 5 N FACU</p> <p>12. <i>Rosa multiflora</i> 5 N FACU</p> <p>Vegetation Summary: (Plot size: 30') 100 = Total Cover</p>				
<p>Stratum Summary: (Plot size: 15')</p> <p>1. <i>Rosa multiflora</i> (Plot size: 15') 10 Y FACU</p> <p>2. <i>Sambucus sp.</i> 10 Y NI</p> <p>3. <i>Physocarpus opulifolius</i> 5 Y FACU</p> <p>4. <i>Urtica dioica</i> 20 Y OBL</p> <p>5. <i>Lonicera xylosteum</i> 20 Y OBL</p> <p>6. <i>Pennicillaria angustata</i> 10 N OBL</p> <p>7. <i>Rosa multiflora</i> 5 N FACU</p> <p>8. <i>Rosa multiflora</i> 5 N FACU</p> <p>9. <i>Rosa multiflora</i> 5 N FACU</p> <p>10. <i>Rosa multiflora</i> 5 N FACU</p> <p>11. <i>Rosa multiflora</i> 5 N FACU</p> <p>12. <i>Rosa multiflora</i> 5 N FACU</p> <p>Vegetation Summary: (Plot size: 30') 100 = Total Cover</p>				

SOIL

Depth (inches)	Moisture	Color (Munsell)	%	Type ¹	Loc ²	Texture	Remarks
0-2	10YR 5/2	10YR 5/2	100	C		loam	
2-8	10YR 5/2	10YR 5/2	70	C		loam	
8-12	10YR 5/2	10YR 5/2	75	C		loam	
12-14	10YR 5/2	10YR 5/2	80	C		loam	
<p>Soil Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)</p> <p>Type: C-Concretion, D-Deposition, E-Eluviation, F-Flooded, G-Glacial, H-Highly, I-Irrigated, J-Joint, K-Karst, L-Lake, M-Marine, N-Natural, O-Other, P-Plastic, Q-Quartz, R-Rock, S-Sand, T-Tuff, U-Upland, V-Volcanic, W-Water, X-Xanthic, Y-Yellow, Z-Zinc</p> <p>Indicators for Problematic Hydrologic Soils³</p> <p>1. Location: P-Low, Q-High, R-Medium, S-High, T-High, U-High, V-High, W-High, X-High, Y-High, Z-High</p> <p>2. on Muck (A10) (MURA 147)</p> <p>3. on Muck (A10) (MURA 147)</p> <p>4. on Muck (A10) (MURA 147)</p> <p>5. on Muck (A10) (MURA 147)</p> <p>6. on Muck (A10) (MURA 147)</p> <p>7. on Muck (A10) (MURA 147)</p> <p>8. on Muck (A10) (MURA 147)</p> <p>9. on Muck (A10) (MURA 147)</p> <p>10. on Muck (A10) (MURA 147)</p> <p>11. on Muck (A10) (MURA 147)</p> <p>12. on Muck (A10) (MURA 147)</p> <p>13. on Muck (A10) (MURA 147)</p> <p>14. on Muck (A10) (MURA 147)</p> <p>15. on Muck (A10) (MURA 147)</p> <p>16. on Muck (A10) (MURA 147)</p> <p>17. on Muck (A10) (MURA 147)</p> <p>18. on Muck (A10) (MURA 147)</p> <p>19. on Muck (A10) (MURA 147)</p> <p>20. on Muck (A10) (MURA 147)</p> <p>21. on Muck (A10) (MURA 147)</p> <p>22. on Muck (A10) (MURA 147)</p> <p>23. on Muck (A10) (MURA 147)</p> <p>24. on Muck (A10) (MURA 147)</p> <p>25. on Muck (A10) (MURA 147)</p> <p>26. on Muck (A10) (MURA 147)</p> <p>27. on Muck (A10) (MURA 147)</p> <p>28. on Muck (A10) (MURA 147)</p> <p>29. on Muck (A10) (MURA 147)</p> <p>30. on Muck (A10) (MURA 147)</p> <p>31. on Muck (A10) (MURA 147)</p> <p>32. on Muck (A10) (MURA 147)</p> <p>33. on Muck (A10) (MURA 147)</p> <p>34. on Muck (A10) (MURA 147)</p> <p>35. on Muck (A10) (MURA 147)</p> <p>36. on Muck (A10) (MURA 147)</p> <p>37. on Muck (A10) (MURA 147)</p> <p>38. on Muck (A10) (MURA 147)</p> <p>39. on Muck (A10) (MURA 147)</p> <p>40. on Muck (A10) (MURA 147)</p> <p>41. on Muck (A10) (MURA 147)</p> <p>42. on Muck (A10) (MURA 147)</p> <p>43. on Muck (A10) (MURA 147)</p> <p>44. on Muck (A10) (MURA 147)</p> <p>45. on Muck (A10) (MURA 147)</p> <p>46. on Muck (A10) (MURA 147)</p> <p>47. on Muck (A10) (MURA 147)</p> <p>48. on Muck (A10) (MURA 147)</p> <p>49. on Muck (A10) (MURA 147)</p> <p>50. on Muck (A10) (MURA 147)</p> <p>51. on Muck (A10) (MURA 147)</p> <p>52. on Muck (A10) (MURA 147)</p> <p>53. on Muck (A10) (MURA 147)</p> <p>54. on Muck (A10) (MURA 147)</p> <p>55. on Muck (A10) (MURA 147)</p> <p>56. on Muck (A10) (MURA 147)</p> <p>57. on Muck (A10) (MURA 147)</p> <p>58. on Muck (A10) (MURA 147)</p> <p>59. on Muck (A10) (MURA 147)</p> <p>60. on Muck (A10) (MURA 147)</p> <p>61. on Muck (A10) (MURA 147)</p> <p>62. on Muck (A10) (MURA 147)</p> <p>63. on Muck (A10) (MURA 147)</p> <p>64. on Muck (A10) (MURA 147)</p> <p>65. on Muck (A10) (MURA 147)</p> <p>66. on Muck (A10) (MURA 147)</p> <p>67. on Muck (A10) (MURA 147)</p> <p>68. on Muck (A10) (MURA 147)</p> <p>69. on Muck (A10) (MURA 147)</p> <p>70. on Muck (A10) (MURA 147)</p> <p>71. on Muck (A10) (MURA 147)</p> <p>72. on Muck (A10) (MURA 147)</p> <p>73. on Muck (A10) (MURA 147)</p> <p>74. on Muck (A10) (MURA 147)</p> <p>75. on Muck (A10) (MURA 147)</p> <p>76. on Muck (A10) (MURA 147)</p> <p>77. on Muck (A10) (MURA 147)</p> <p>78. on Muck (A10) (MURA 147)</p> <p>79. on Muck (A10) (MURA 147)</p> <p>80. on Muck (A10) (MURA 147)</p> <p>81. on Muck (A10) (MURA 147)</p> <p>82. on Muck (A10) (MURA 147)</p> <p>83. on Muck (A10) (MURA 147)</p> <p>84. on Muck (A10) (MURA 147)</p> <p>85. on Muck (A10) (MURA 147)</p> <p>86. on Muck (A10) (MURA 147)</p> <p>87. on Muck (A10) (MURA 147)</p> <p>88. on Muck (A10) (MURA 147)</p> <p>89. on Muck (A10) (MURA 147)</p> <p>90. on Muck (A10) (MURA 147)</p> <p>91. on Muck (A10) (MURA 147)</p> <p>92. on Muck (A10) (MURA 147)</p> <p>93. on Muck (A10) (MURA 147)</p> <p>94. on Muck (A10) (MURA 147)</p> <p>95. on Muck (A10) (MURA 147)</p> <p>96. on Muck (A10) (MURA 147)</p> <p>97. on Muck (A10) (MURA 147)</p> <p>98. on Muck (A10) (MURA 147)</p> <p>99. on Muck (A10) (MURA 147)</p> <p>100. on Muck (A10) (MURA 147)</p>							

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project: South Field Energy Infrastructure Facility, Chocoma, Yellow Creek Twp, 4/30/15
 Applicant: Tetra Tech, State: OH, Sampling Point: 29
 Investigator: LAURA SARTO, Section, Township, Range: 524.79N, 82W
 Landmark (ridge, terrace, etc.): Local relief (concave, convex, none)
 Subregion (LRR or LRA): LRR-N 104, Loc: 40, 640244, Long: 80, 640244, Datum: WGS84
 Soil Map Unit Name: BpF-Bethesda very clayey silt loam, 25-70 loess (M classification)
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks)

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	In the Sampled Area within 1/2 mile?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Hydric Soil Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	In the Sampled Area within 1/2 mile?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Wetland Hydrology Present?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	In the Sampled Area within 1/2 mile?	Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: old field			

LSP2-2

HYDROLOGY

Wetland Hydrology Indicators	Secondary Indicators (in addition to two required)
Surface Water (A1)	Surface Soil Cracks (B4)
High Water Table (A2)	Sparsely Vegetated Concave Surface (B6)
Saturation (A3)	Drainage Patterns (B10)
Water Marks (B1)	Moss Trim Lines (B16)
Sediment Deposits (B2)	Dry-Season Water Table (C2)
Drift Deposits (B3)	Crayfish Burrows (C8)
April Melt or Crust (B4)	Saturation Visible on Aerial Imagery (C9)
Iron Deposits (B5)	Stunted or Stressed Plants (D1)
Foundation Visible on Aerial Imagery (B7)	Geomorphic Position (D2)
Water Stained Leaves (B9)	Shallow Aquifer (D3)
Aquatic Fauna (B13)	Microtopographic Relief (D4)
	FAC Neutral Test (D5)

Field Observations	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Surface Water Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Water Table Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Saturation Present?	Yes <input type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge monitoring well, aerial photos, previous inspections, if available)	

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants.

Tree Stratum (Pkt size: 30')	Absolute % Cover	Dominant Species	Indicator Status
1. <i>Acer saccharum</i>	10	Y	FACU
2. <i>Quercus sp.</i>	5	Y	FACU
3. <i>Betula papyrifera</i>	5	N	FACU
4. <i>...</i>	...	...	...
5. <i>...</i>	...	...	...
6. <i>...</i>	...	...	...
7. <i>...</i>	...	...	...
8. <i>...</i>	...	...	...
9. <i>...</i>	...	...	...
10. <i>...</i>	...	...	...
11. <i>...</i>	...	...	...
Shrub Stratum (Pkt size: 15')	50% of total cover	20% of total cover	
1. <i>Rosa multiflora</i>	50	Y	FACU
2. <i>...</i>	...	...	...
3. <i>...</i>	...	...	...
4. <i>...</i>	...	...	...
5. <i>...</i>	...	...	...
6. <i>...</i>	...	...	...
7. <i>...</i>	...	...	...
8. <i>...</i>	...	...	...
9. <i>...</i>	...	...	...
10. <i>...</i>	...	...	...
11. <i>...</i>	...	...	...
Herb Stratum (Pkt size: 6')	50% of total cover	20% of total cover	
1. <i>Phlox pilularis</i>	20	Y	FACU
2. <i>Solidago canadensis</i>	10	Y	FACU
3. <i>...</i>	...	...	...
4. <i>...</i>	...	...	...
5. <i>...</i>	...	...	...
6. <i>...</i>	...	...	...
7. <i>...</i>	...	...	...
8. <i>...</i>	...	...	...
9. <i>...</i>	...	...	...
10. <i>...</i>	...	...	...
11. <i>...</i>	...	...	...
Woody Vine Stratum (Pkt size: 30')	50% of total cover	20% of total cover	
1. <i>Vitis sp.</i>	15	Y	FACU
2. <i>...</i>	...	...	...
3. <i>...</i>	...	...	...
4. <i>...</i>	...	...	...
5. <i>...</i>	...	...	...
6. <i>...</i>	...	...	...
7. <i>...</i>	...	...	...
8. <i>...</i>	...	...	...
9. <i>...</i>	...	...	...
10. <i>...</i>	...	...	...
11. <i>...</i>	...	...	...
Remarks (include photo numbers here or on a separate sheet)			

SOIL

Sampling Point 29

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Moisture	Color (Munsell)	Texture	Loc	Type	Loc	Texture	Remarks	
D-1	10/2/12	8D	2.5/4/2	2D	C	M	LC		
<p>Radial Features</p> <p>1. Type: C-Concentration, D-Dispersion, RM-Reduced Matrix, MS-Mixed Sand Grains</p> <p>Hydric Soil Indicators</p> <p>— Histosol (A1)</p> <p>— Histic Epipedon (A2)</p> <p>— Black Histic (A3)</p> <p>— Hydrogen Sulfide (A4)</p> <p>— Striped Layers (A5)</p> <p>— 2 cm Muck (A10) (LRR N)</p> <p>— Depleted Below Dark Surface (A11)</p> <p>— Thick Dark Surface (A12)</p> <p>— Sandy Mucky Mineral (S1) (LRR N)</p> <p>— MLRA 147, 148</p> <p>— Sandy Clayey Matrix (S4)</p> <p>— Sandy Retic (S5)</p> <p>— Striped Matrix (S6)</p> <p>— Restrictive Layer (if observed)</p> <p>Type: <u>Rock/Strat</u></p> <p>Depth (inches): <u>12</u></p> <p>Hydric Soil Present? Yes <u>No</u> <u>X</u></p>									

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site:	South Field Energy Interconnection Facilities	City/County:	Yellow Creek Twp., Cumberland Co.	Sampling Date:	April 30, 2015
Applicant/Owner:	Terri Tech	State:	NC	Sampling Point:	SP-30
Investigator(s):	E. Kennedy	Section, Township, Range:			
Landform (elevation, terrain, etc.):	gentle slope	Local Relief (elevation, contour, etc.):			
Subregion (LRR or MLRA):	LRR N	Lat:	40 54 01 N	Long:	78 59 18 W
Soil Map Unit Name:	BKD - Berks cherty clay loam, 15 to 25 percent slopes	USDA Soil Code:			
Are climatic/hydrologic conditions on the site typical for this time of year?	Yes <u>X</u> No <u></u>	Are "Normal Circumstances" present?	Yes <u>X</u> No <u></u>		
Are vegetation <u>X</u> , soil <u></u> , or hydrology <u></u> significantly disturbed?	Yes <u>X</u> No <u></u>	Are "Normal Circumstances" present?	Yes <u>X</u> No <u></u>		
Are vegetation <u></u> , soil <u></u> , or hydrology <u></u> naturally problematic?	Yes <u></u> No <u>X</u>	(If needed, explain any anomalies in Remarks.)			

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

Hydrophytic Vegetation Present?	Yes <u></u> No <u>X</u>	In the Sampled Area with a Wetland?	Yes <u></u> No <u>X</u>
Hydric Soil Present?	Yes <u></u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u></u> No <u>X</u>		
Remarks:	reclassified new field. Original name SP-30		

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Evidence (Minimum of two required)	
Primary Indicators (Minimum of one is required, check all that apply):		Surface Soil Cracks (B4)	<u></u>
Surface Water (A1)	<u></u>	Stagnant Vegetated Concave Surface (B6)	<u></u>
High Water Table (A2)	<u></u>	Drainage Patterns (B10)	<u></u>
Saturation (A3)	<u></u>	Moist Trench Lines (B16)	<u></u>
Water Marks (B1)	<u></u>	Dry-Season Water Table (C2)	<u></u>
Soil Deposition (B2)	<u></u>	Crystalline Burrows (C3)	<u></u>
Drift Deposition (B3)	<u></u>	Shrinkage Cracks on Aerial Imagery (C9)	<u></u>
Algal Mat or Crust (B4)	<u></u>	Shrinkage of Burrows (C11)	<u></u>
Iron Deposition (B5)	<u></u>	Geomorphic Position (C2)	<u></u>
Inundation Visible on Aerial Imagery (B7)	<u></u>	Shallow Anisotropy (C3)	<u></u>
Water-Related Leach (B8)	<u></u>	Microtopographic Relief (C4)	<u></u>
Acidic Features (B13)	<u></u>	PHC-Higher Test (C8)	<u></u>

Field Observations:	
Surface Water Present?	Yes <u></u> No <u>X</u>
Water Table Present?	Yes <u></u> No <u>X</u>
Saturation Present?	Yes <u></u> No <u>X</u>
Includes Capillary Fringe?	Yes <u></u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	

Wetland Hydrology Present?	
Yes <u></u>	No <u>X</u>

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: _____ City/County: _____ Yellow Creek Twp., Columbia Co. Sampling Date: April 30, 2015
 Applicant/Owner: _____ State: OH
 Investigation(s): _____ E. Kennedy Section, Township Range: S24, T4N, R20W SP-51
 Landform (slope, terrace, etc.): _____ gentle slope Local Relief (concave, convex, none): _____ concave Slope (%): 5
 Subregion (LRR or MRA): _____ LRR N Lat: 40 54 07.22 Long: -80 59 05.05 Datum: WGS84
 Soil Map Unit Name: BGD - Bents claystone silt loam, 15 to 25 percent slopes NWI classification: none
 Are detrital/hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no, explain in Remarks.)
 Are Vegetation ☒ Soil ☐ or Hydrology ☐ significantly disturbed? Yes ☐ No ☒
 Are Vegetation ☐ Soil ☐ or Hydrology ☐ naturally problematic? Yes ☐ No ☒ (If checked, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes ☒ No ☐ Is the Sampled Area within a Wetland? Yes ☒ No ☐
 Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐
 Remarks: _____
 designated wetland (PDM). Original name Except 1

HYDROLOGY

Wetland Hydrology Indicators (Minimum of one is required, check all that apply):
 Surface Water (A1) ☒ High Water Table (A2) ☒ Surface Soil Cracks (B6)
 X ☒ Saturation (A3) ☒ Hydrogen Sulfide Color (C1) ☒ Sparingly Vegetated Concave Surface (B8)
 X ☒ Water Marks (B1) ☒ Coldwater Phenomena on Living Plants (C3) ☒ Moon Ties Lines (B16)
 Sediment Deposits (B2) ☒ Presence of Reduced Iron (C4) ☒ Dry-Season Water Table (C2)
 Drift Deposits (B3) ☒ Recent Iron Reduction in Tilled Soils (C5) ☒ Crayfish Burrows (C8)
 Aquatic Plant or Animal (B4) ☒ Thin Black Surfaces (C7) ☒ Saturation Visible on Aerial Imagery (C9)
 Iron Deposits (B5) ☒ Other (Explain in Remarks) ☒ Buried or Shaded Plants (D1)
 Irregularities Visible on Aerial Imagery (B7) ☒ Geographic Position (C2)
 Water-Soaked Leaves (B9) ☒ Shallow Aquatic (C3)
 Aquatic Fauna (B13) ☒ Microtopographic Relief (D4)
 PNC-Natural Test (D9) ☒

Field Observations:
 Surface Water Present? Yes ☒ No ☐ Depth (inches): _____ Wetland Hydrology Present? Yes ☒ No ☐
 Water Table Present? Yes ☒ No ☐ Depth (inches): _____
 Saturation Present? Yes ☒ No ☐ Depth (inches): _____
 (Include capillary fringe)
 Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections) if available:
 Remarks: _____

VEGETATION (Five Strata) - Use scientific names of plants

Line Stratum	(Plot size: 30')	Abundant % Cover	Dominant Species?	Indicator Status	Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW, or FAC	Sampling Point
1					2	(A)
2					3	(B)
3					4	(C)
4					5	(D)
5					6	(E)
6					7	(F)
7					8	(G)
<p>Percent of Dominant Species That Are OBL, FACW, or FAC: 88.87% (AB)</p> <p>Prevalence Index Worksheet: Total % Cover of: OBL species: 0 x 1 = 0 FACW species: 0 x 2 = 0 FACU species: 0 x 3 = 0 FACU species: 55 x 4 = 220 UPL species: 10 x 5 = 50 Column Totals: 85 (A) 270 (B) Prevalence Index = B/A = 4.15348154</p>						
<p>Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >40% 3 - Prevalence Index is >3.0 4 - Morphological Adaptations (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation? (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Shrub - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Vine - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. 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.</p>						
<p>Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/></p>						
<p>Remarks: (Include photo numbers here or on a separate sheet.)</p>						

BOHL

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: Applicant/Owner Investigator(s):	South Field Energy Interconnection Facilities City/County: Yellow Creek Twp., Columbiana Co. State OH	Sampling Date Sampling Point:	April 30, 2015 SP-32
	Terra Tech E Kennedy	Sutton, Township, Range	S13, T3N, R2W
Landform (plateau, terrace, etc.): Subregion (LRR or MLRA):	gentle slope LRR N	Local Relief (concave, convex): Lat: 40°40'51"N	Slope (%): 5 Datum: WGS84
Soil Map Unit Name: Are climatic/hydrologic conditions on the site typical for this time of year? Is soil hydrology significantly disturbed?	GnC - Gchpt silt loam, S to LS percent clayey Yes X No _____ or Hydrology _____ Yes X No _____	MHI Classification MWI classification	nons
Aer Vegetation Aer Vegetation	Soil _____, or Hydrology naturally problematic? Yes X No _____ (If present, explain any anomalies in Remarks.)	Is the Sampled Area within a Wetland?	No X
SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features, etc.			
Hydrophytic Vegetation Present?	Yes No X Yes No X Yes No X		
Hydric Soil Present?	Yes No X Yes No X Yes No X		
Wetland Hydrology Present?	Yes No X Yes No X Yes No X		
Remarks:			
successional forest. Original name Ekap10			
HYDROLOGY			
Secondary indicators (minimum of one is required; check all that apply)			
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mats or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Irregularities Visible on Aerial Imagery (B7) <input type="checkbox"/> Wide-Stained Leaves (B8) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Tree Aquatic Plants (C14) <input type="checkbox"/> Hydrophytic Substrata (C1) <input type="checkbox"/> Outcrops/Phenocrysts on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Normal Iron Reduction in Till Soil (C6) <input type="checkbox"/> Thin Black Surfaces (C7) <input type="checkbox"/> Other (Explain in Remarks)	Successional Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B9) <input type="checkbox"/> Sparsely Vegetated Concave Surfaces (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Mound Time Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C3) <input type="checkbox"/> Subsurface Voids or Aerial Imagery (C3) <input type="checkbox"/> Stunted or Stretched Plants (D1) <input type="checkbox"/> Geomorphic Positions (D2) <input type="checkbox"/> Shallow Aquifers (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present? Yes _____ No X _____ Depth (inches): _____			
Water Table Present? Yes _____ No X _____ Depth (inches): _____			
Saturation Present? Yes _____ No X _____ Depth (inches): _____			
(includes capillary fringe)			
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available.			
Remarks:			

VEGETATION (Five Strata) - Use scientific names of plants.

Time Station	(Plot size: 30')	Abundance % Cover	Dominant Species?	Indicator Status
1	<i>Pinus strobus</i>	5	Y	FACU
2				
3				
4				
5				
6				
7				
		5	= Total Cover	

Station Station (Plot Size: 15')

Dominance Test worksheet:
 Number of Dominant Species
 That Are OBL, FACW, or FAC _____ 1 _____ (A)
 Total Number of Dominant
 Species Across All Plots _____ 3 _____ (B)
 Percent of Dominant Species
 That Are OBL, FACW, or FAC: _____ 33.33% _____ (A/B)

Prevalence Index worksheet:
 Total % Cover of _____
 Multiply by _____

Sample Status	(Plot Size: 15')	= Total Cover			Prevalence Index = S/A = 2.571282571		
1		0	15	Y	ND		
2	Robust sp						
3							
4							
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11

US Army Corps of Engineers
Eastern Mountains and Piedmont - Version 2.0

SOIL

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site Applicant's Name	Booth Field Energy Interconnection Facilities	City/County	Yellow Creek Trp., Columbian Co.	Sampling Date
Investigator(s)	Terra Tech	E. Kennedy	Section, Township, Range	State OH Sampling Point, SP-34
Landowner (person, lease, etc.)	gups	Local Parcel (conserv. owner, none)	none	
Sideline (LRR or M.B.A.)	LFR N	Lac 40 S38E67	Long -90 E8109S	Datum: WGS84
Soil Map Unit Name	PdC - Binks claystone alluvium 25 to 40 percent slopes			Slope (%): 10
Are climatic/hydrologic conditions on the site typical for the time of year?	Yes X No		NW1 classification:	none
Any climatic/hydrologic conditions significantly disturbed?	Yes X No		(If not explain in Remarks.)	
Soil _____	_____		Are "Normal Circumstances" present?	
Soil _____	_____		Yes X No	
Are Vegetation _____	_____		(If needed, explain any stresses in Remarks.)	
Soil _____	_____			

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

	Yes		No		X		No		X	
Hydrophytic Vegetation Present?	Yes	_____	No	_____	No	_____	X	_____	X	_____
Hydric Soil Present?	Yes	_____	No	_____	No	_____	X	_____	X	_____
Wetland Hydrology Present?	Yes	_____	No	_____	No	_____	X	_____	X	_____
Remarks:										
Date:										
Observer:										
Original name EIC/08										

HYDROLOGY

Mediated Hydrology Indicators	
Primary indicators (intrinsic of one is required check at the 50%)	
Surface Water (A1)	_____
High Water Table (A2)	_____
Saturation (A3)	_____
Water Levels (B1)	_____
Sediment Deposition (B2)	_____
Soil Deposition (B3)	_____
Algal Mat or Crust (B4)	_____
Iron Deposition (B5)	_____
Infiltration (B6)	_____
Infiltration Visible on Aerial Imagery (B7)	_____
Water-Strained Leaves (B8)	_____
Aquatic Plants (B13)	_____
Secondary Indicators (intrinsic of two required)	
Surface Soil Cracks (B6)	_____
Sparsely Vegetated Concrete Surfaces (B9)	_____
Orange Pediments (B10)	_____
Mud Tern Lids (B18)	_____
Cry-Release Water Table (C2)	_____
Crystalline Surfaces (C3)	_____
Reduction Visible on Aerial Imagery (C5)	_____
Shrubs or Stressed Plants (C11)	_____
Cumulative Position (C12)	_____
Shallow Aquifers (C21)	_____
Microporphysic Nodules (C4)	_____
PAC-Nodules Test (C9)	_____

Field Observations			Wellhead Hydrology Present?	
	Yes	No	Yes	No
Surface Water Present?	_____	X	_____	_____
Water Table Present?	_____	X	_____	_____
Saturation Present?	_____	X	_____	_____
Includes capillary fringe?	_____	_____	_____	_____

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

Remarks:

Sampling Point:

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont

Project/Site: South Field Energy Interconnection Facilities City/Country: Yellow Creek Twp, Columbus Co. Sampling Date: April 30, 2016
 Applicant/Owner: E. Kennedy Siter: OH Sampling Point: SP-35
 Investigator(s): S10, TSN, FZW
 Landform (shape, terrain, etc.): shrub Section, Township Range: S10, T2N, R2W
 Subregion (LRR or MLEA): LRR N Local Relief (concave, convex, none): concave Slope (%): 10
 Soil Map Unit Name: B1C - Barbs clayey silt loam, 8 to 15 percent slopes Long: -80 081618 Datum: WGS84
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are vegetation or hydrology significantly disturbed? Yes X No
 Are vegetation or hydrology naturally problematic? Yes X No (If needed, explain any stresses 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 Wetland? Yes X No
 Hydric Soil Present? Yes X No Wetland? Yes X No
 Wetland Hydrology Present? Yes X No Wetland? Yes X No
 Remarks: Open wetland. Original name E1C00.

HYDROLOGY

Wetland Hydrology Indicators:
 Primary Indicators (minimum of one is required; check all that apply):
 Surface Water (A1) Year Aquatic Plants (B14) Buried Soil Cracks (B6)
 High Water Table (A2) Hydrogen Sulfide Odor (C1) X Sparsely Vegetated Concave Surface (B8)
 X Seasonal (A3) X Outflow Phenomena on Living Roots (C2) X Drainage Patterns (B16)
 Water Marks (B1) Presence of Reduced Iron (D4) X Moss Trim Lines (B16)
 Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6) X Dry-Season Water Table (C2)
 OH Deposits (B5) Thin Black Surface (C7) X Crayfish Burrows (C3)
 Aquatic Plant or Animal (B4) Other (Explain in Remarks) X Saturation Visible on Aerial Imagery (C3)
 Iron Deposits (B5) Buried or Stained Poles (D1) X Buried or Stained Poles (D1)
 Irrigation Visible on Aerial Imagery (B7) X Geomorphic Position (D2)
 Water-Soaked Leaves (B6) X Shrub Upland (C4)
 Aquatic Fauna (B13) X Microtopographic Relief (D4)
 FAC-Natural Test (D6)

Field Observations:
 Surface Water Present? Yes No Depth (inches):
 Water Table Present? Yes No Depth (inches):
 Saturation Present? Yes No Depth (inches):
 (Includes capillary fringe)
 Describe Recorded Data (stream gauges, monitoring well, aerial photos, previous inspections) if available.

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants.

Line Status	(Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1				
2				
3				
4				
5				
6				
7				
Dominance Test Worksheet: Number of Dominant Species That Are OBL, FACW or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW or FAC: <u>66.67%</u> (A/B)				
Prevalence Index Worksheet: Total % Cover of: OBL species: <u>1</u> = <u>0</u> FACW species: <u>2</u> = <u>0</u> FAC species: <u>3</u> = <u>0</u> UPL species: <u>4</u> = <u>0</u> Column Totals: <u>(A)</u> <u>0</u> (B) Prevalence Index = B/A = <u>0.00/0.00</u>				
Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation: X <u> </u> 2 - Dominance Test is >60% X <u> </u> 3 - Prevalence Index is >3.0 X <u> </u> 4 - Morphological Adaptations* (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation? (Explain) <u> </u> 1 Indicators of hydric soil and wetland hydrology must be present, unless defined or problematic. Definitions of Four Vegetation Strata: Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Shrub - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Vine - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. 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 <u> </u> No <u> </u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Project/Site:	South Field Energy Interconnection Facilities	City/Country:	Yellow Creek Twp., Columbiana Co.	Sampling Date:	April 30, 2016
Applicant/Owner:	Tetra Tech	State:	OH	Sampling Point:	BP-36
Investigator(s):	E. Kennedy	Sect./ Township Range:		Yellow Creek Township	
Landform (glacials, terraces, etc.):	dry	Local Relief (concave, convex, flat):	concave	Slope (%):	-10
Substratum (LRR or MURP):	LRR N	Lat.: 40°53'44"	Long.: -80°01'52"	Datum:	WGS84
Soil Map Unit Name:	B/E - Bents Chertmossy silt loam, 25 to 40 percent clayey	Yes	X	No	
Are climate/hydrologic conditions on the site typical for the time of year?		Yes	X	No	
Are Vegetation	Soil _____ or Hydrology _____ significantly disturbed?	Yes	X	No	
Are Vegetation	Soil _____ or Hydrology _____ naturally problematic?	(If needed, explain any features in Remarks.)			
SUMMARY OF FINDINGS - Attach air photo showing sampling point locations, transects, important features, etc.					
Hydrophilic Vegetation Present? Yes X No _____					
Hydric Soil Present? Yes X No _____					
Wetland Hydrology Present? Yes X No _____					
Remarks: pern wetland					
HYDROLOGY					
Primary Indicators (Minimum of one is required; check all that apply)					
Surface Water (A1) _____ Year Aquatic Plants (B14) _____					
High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) _____					
X Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C2) _____					
Water Marks (B1) _____ Presence of Redwood Iron (C4) _____					
Redwood Deposits (B2) _____ Recent Iron Reduction in Thin Soil (C3) _____					
Clay Deposits (B3) _____ Thin Mud Surface (C7) _____					
Apical Leaf or Crust (B4) _____ Other (explain in Remarks) _____					
Iron Deposits (B5) _____					
Inundation Yields on Aerial Imagery (B7) _____					
Water-Saturated Leaves (B8) _____					
Aquatic Fauna (B13) _____					
Secondary Indicators (minimum of two required)					
Shoreline Wet Cretes (B9) _____					
X Sparsely Vegetated Concave Surfaces (B6) _____					
Drainage Patterns (B10) _____					
Moose Tree Lines (B16) _____					
Dry-Season Water Tables (C2) _____					
Cryptic Burrows (C3) _____					
Saturation Yields on Aerial Imagery (C5) _____					
Buried or Stagnant Ponds (D1) _____					
Geomorphic Position (D2) _____					
Shrub-Aquifers (D3) _____					
X Microtopographic Relief (D4) _____					
FAC-Natural Test (D8) _____					
Field Observations					
Surface Water Present? Yes _____ No X Depth (inches): _____					
Water Table Present? Yes _____ No X Depth (inches): _____					
Saturation Present? Yes X No Depth (inches): 0					
(Indicates capillary fringe)					
Observe Recorder's Data (obtain gauge monitoring well, series photos, previous inspections) if available:					
Remarks:					

Appendix D:
Ohio Rapid Assessment Method for
Wetlands v. 5.0 Rating Forms

Background Information

Name	Brian Slaby
Date	04/29/2015
Affiliation	EnviroScience Inc.
Address	5070 Stow Road, Stow, Ohio 44224
Phone Number	330-688-0111
e-mail address	BSlaby@EnviroScienceInc.com
Name of Wetland:	W-1
Vegetation Community(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	40 849235 -80.733789
USGS Quad Name	West Point
County	Columbiana
Township	Madison
Section and Subsection	
Hydrologic Unit Code	#05030101
Site Visit	04/29/2015
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	X

Name of Wetland: W-1

Wetland Size (acres, hectares) 0.587 acres 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 : 47.5

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/W/lands 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, constructions caused by dams or dikes, points where the water velocity changes rapidly at rapids or falls, or other factors that may restrict hydrologic interaction between the wetland 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? <small>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).</small>	YES Wetland should be evaluated for possible Category 3 status 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 Wetland is a Category 3 wetland Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland 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 Wetland is a Category 3 wetland 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 <i>Phragmites australis</i> , <i>Lythrum salicaria</i> , or <i>Phytolacca australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland 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 <i>Sphagnum</i> 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 Wetland is a Category 3 wetland 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 (6.5-8.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland 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 multiseeded canopies, aggregations of canopy trees interspersed with canopy gaps, and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland 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 that are at least 17 m (56 ft) tall?	YES Wetland should be evaluated for possible Category 3 status Go to Question 8a	NO Go to Question 8a
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 Go to Question 9b	NO 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 Wetland should be evaluated for possible Category 3 status Go to Question 9c	NO 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 Go to Question 10	NO 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 Wetland is a Category 3 wetland Go to Question 9e	NO 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 Wetland should be evaluated for possible Category 3 status Go to Question 10	NO 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 graminaceous 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 Wetland is a Category 3 wetland Go to Question 11	NO 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 (Medford 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 Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1. Characteristic plant species.

[illegible]

End of Narrative Rating. Begin Quantitative Rating on next page.

Metric	2	2	
	max 6 pts.	max 6 pts.	subtotal
Metric 1. Wetland Area (size).			
Select one size class and assign score			
>50 acres (>20.2ha) (6 pts)			
Seasonal/intermittent surface water (3)			
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 (0.12 to <1.2ha) (2 pts)	X		
0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)			
<0.1 acres (0.04ha) (0 pts)			
Metric 2. Upland buffering and surrounding land use.			
2a. Calculate average buffer width. Select only one and assign score. Do not double check.			
WIDE: Buffer average 50m (164 ft) or more around wetland perimeter (7)			
MED: Buffer average 20m to <50m (62 to <164ft) around wetland perimeter (4)	X		
NARROW: Buffer average 10m to <20m (32ft to <62ft) around wetland perimeter (1)			
VERY NARROW: Buffer average <10m (<32ft) around wetland perimeter (0)			
2b. Integrity of surrounding land use. Select one of double check and average.			
VERY LOW: 2nd growth or older forest, prairie, savanna, wildlife area, etc. (7)			
LOW: Old field (<10 years), abandoned, young second growth forest. (5)	X		
MODERATELY HIGH: Residential, farmed pasture, past, conservation lands, new fallow field. (3)	X		
HIGH: Urban industrial, open pasture, row cropping, mining, construction. (1)			
Metric 3. Hydrology.			
3a. Sources of Water. Score all that apply			
High pH groundwater (5)			
Other groundwater (2)	X		
Precipitation (1)	X		
Seasonal/intermittent surface water (3)	X		
Perennial surface water (lake or stream) (5)	X		
3b. Medium water depth. Select only one and assign score.			
>0.7 (27 dm) (3)			
0.4 to 0.7 m (15.7 to 27 dm) (2)	X		
<0.4m (<15.7m) (1)	X		
3c. Modifications to natural hydrologic regime. Score one of double check and average			
None or none apparent (12)			
Recovering (7)	X		
Recovered (3)	X		
Recent or no recovery (1)			
Check all that apply (do not observed)			
ditch			
tile			
levee			
dike			
wall			
stormwater input			
point source (nonstormwater)			
filling/grading			
road bed/RIP rock	X		
channel deepening			
Other: clearing			

[illegible]

ORAM Summary Worksheet

Narrative Rating		circle answer or insert score			Result
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 9a	Lake Erie Wetlands - Restricted	YES	(NO)	If yes, evaluate for Category 3, may also be 1 or 2	
Question 9b	Lake Erie Wetlands - Unrestricted with native plants	YES	(NO)	If yes, Category 3	
Question 9c	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	
Metric 1	Size	2			
Metric 2	Buffers and surrounding land use	8			
Metric 3	Hydrology	21			
Metric 4	Habitat	10	5		
Metric 5	Special Wetland Communities	0			
Metric 6	Plant communities, interspersed, microtopography	6			
TOTAL SCORE		47.5		Category based on score breakpoints 2	

Complete Wetland Categorization Worksheet

Metric 5. Special Wetlands.																							
0	41.5																						
max 10 pts.	subtot																						
Check all that apply and score as indicated.																							
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Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	<input checked="" type="radio"/> YES Wetland is categorized as a Category 3 wetland	is a 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: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	<input checked="" type="radio"/> YES Wetland should be evaluated for possible Category 3 status	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 Narrative Rating No. 5	<input checked="" type="radio"/> YES Wetland is assigned to the appropriate category based on the scoring range	Is a 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?	<input checked="" type="radio"/> YES Wetland is assigned to the appropriate category based on the scoring range	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 wetland must also meet the criteria in OAC Rule 3745-1-54(C) to 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?	<input checked="" type="radio"/> YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	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 Category 3 wetland in the case of superior functions) by this method?	<input checked="" type="radio"/> YES Wetland was undercategorized by this method. A written justification for recategorization must be provided on the Background Information Form	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 based on a written justification with supporting reasons or information for this determination should be provided.

Choose one ☒ Category 1 ☒ Category 2 ☐ Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Emma Kennedy
Date:	04/29/2015
Affiliation:	EnviroScience Inc
Address:	5070 Stow Road, Stow, Ohio 44224
Phone Number:	330-888-0111
e-mail address:	EKennedy@EnviroScienceInc.com
Name of Wetland:	W-2, W-3, W-4, W-5
Vegetation Community(ies)	PEM
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.	
Latitude or UTM Coordinate	40 648853, -80 726999; 40.648149, -80 72703; 40 648624, -80 727004, 40 648195, -80 726964
USGS Quad Name	West Point
County	Columbiana
Township	Madison
Section and Subsection	
Hydrologic Unit Code	#05030101
Site Visit	04/29/2015
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	X

Name of Wetland: W-2; W-3, W-4; W-5	
Wetland Size (acres, hectares):	Total of 0.060 acres onsite
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Please refer to site wetlands and water resources map.	
W-2 0.018 acres onsite W-3 0.002 acres onsite W-4 0.001 acres onsite W-5 0.038 acres onsite	
Comments, Narrative Discussion, Justification of Category Changes	
Final score : 40	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 catclaw 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, corallitons caused by beems or dams, 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	Delimitate 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; that is, the areas where 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 17.85(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES	Wetland should be evaluated for possible Category 3 status 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	Wetland is a Category 3 wetland Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES	Go to Question 3 Wetland is a Category 3 wetland 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	Go to Question 4 Wetland is a Category 3 wetland 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 <i>Phragmites australis</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES	Go to Question 5 Wetland is a Category 3 wetland Go to Question 6
6	Bog. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> 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	Go to Question 6 Wetland is a Category 3 wetland 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 (6.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES	Go to Question 7 Wetland is a Category 3 wetland 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 at-aged structure and multistoried canopies, aggregations of canopy trees interspersed with canopy gaps, and significant numbers of standing dead snags and downed logs?	YES	Go to Question 8a Wetland is a Category 3 wetland Go to Question 8b

#	Question	Circle one	
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 7/8" dbh)?	YES	Wetland should be evaluated for possible Category 3 status Go to Question 8a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to the elevation, or along a tributary to Lake Erie that is accessible to fish?	YES	Go to Question 8b 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	Wetland should be evaluated for possible Category 3 status 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 communities, although non-native or disturbance tolerant native species can also be present?	YES	Wetland is a Category 3 wetland Go to Question 9e
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	Go to Question 10 Go to Question 10
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES	Wetland should be evaluated for possible Category 3 status 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 graminaceous 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 the type of wetland and its quality.	YES	Wetland is a Category 3 wetland 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	Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating

39
 0 39
 max 10 pts. Check all that apply and score as indicated.

Metric 5. Special Wetlands.

<input type="checkbox"/>	Bog (10)
<input type="checkbox"/>	Fen (10)
<input type="checkbox"/>	Old growth forest (10)
<input type="checkbox"/>	Mature forested wetland (5)
<input type="checkbox"/>	Lake Erie coastal/rhithronic wetland -unrestricted hydrology (10)
<input type="checkbox"/>	Lake Erie coastal/rhithronic wetland-restricted hydrology (5)
<input type="checkbox"/>	Lake Erie Sand Prairie (Oak Openings) (10)
<input type="checkbox"/>	Relict Wet Prairies (10)
<input type="checkbox"/>	Known occurrence state/provincial threatened or endangered species (10)
<input type="checkbox"/>	Significant migratory songbird/waterfowl habitat or usage (10)
<input type="checkbox"/>	Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersions, microtopography.

1	40	max 20 pts. score
Vegetation Community Cover Scale		
0	Percent of community cover that (0.247 to 0.263) (50% to 60%) 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 no 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 species diversity moderate to high, but not always the presence of rare, threatened, or endangered spp

Microtopography and Open Water Class Quality

0	Absent (<10.247 to 0.263)
1	Low 0.1 to <10.247 to 0.263
2	Moderate 1 to <10.247 to 0.263
3	High 10.247 to 0.263 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

40 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM score calibration report for the scoring breakdown between categories at the following address: <http://open.sdsu.edu/oram401401.html>

ORAM Summary Worksheet

Narrative Rating	Question 1 Critical Habitat	Question 2 Threatened or Endangered Species	Question 3 High Quality Natural Wetland	Question 4 Significant bird habitat	Question 5 Category 1 Wetlands	Question 6 Bogs	Question 7 Fens	Question 8a Old Growth Forest	Question 8b Mature Forested Wetland	Question 9a Lake Erie Wetlands - Restricted	Question 9b Lake Erie Wetlands - Unrestricted with native plants	Question 9c Lake Erie Wetlands - Unrestricted with invasive plants	Question 10 Oak Openings	Question 11 Relict Wet Prairies	Metric 1 Size	Metric 2 Buffers and surrounding land use	Metric 3 Hydrology	Metric 4 Habitat	Metric 5 Special Wetland Communities	Metric 6 Plant communities, interspersions, microtopography	TOTAL SCORE	Result
	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	YES <input type="radio"/> NO <input type="radio"/>	1	9	20	9	0	1	40	Category based on score breakpoints 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: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES	NO
Did you answer "yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES	NO
Did you answer "yes" to Narrative Rating No. 5	YES	NO
Does the quantitative score fall within the scoring range of a Category 1, 2, or 3 wetland?	YES	NO
Does the quantitative score fall within the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES	NO
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	NO

Choose one Category 1 Category 2 Category 3 Final Category

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Ann Gilmore/Mary Gilmore
Date:	11/24/2015
Affiliation:	EnviroScience Inc.
Address:	5070 Stow Road, Stow, Ohio 44224
Phone Number:	330-588-0111
e-mail address:	agilmore@EnviroScienceInc.com
Name of Wetland:	W-8
Vegetation Community(ies):	PEM
HSA 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	40 847239 -80 726646
USGS Quad Name	West Point
County	Columbiana
Township	Madison
Section and Subsection	
Hydrologic Unit Code	#05030101
Site Visit	11/24/2015
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	X

Name of Wetland: W-6	
Wetland Size (acres, hectares): 0.406 acres on-site	
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: 47	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-made features that restrict or influence hydrology. Examples include: 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	Define the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the area 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), 614-265-3095 (fax), <http://www.dnr.state.oh.us/dnasp>. 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 17.85(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO 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 Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland. Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain concentrated regional significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland. Go to Question 5	NO 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 <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 3 wetland. Go to Question 6	NO Go to Question 6
6	Boogs. Is the wetland a peat accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> 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 Wetland is a Category 3 wetland. Go to Question 7	NO 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 (6.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland. Go to Question 8a	NO 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 secondary disturbance during the past 50 to 100 years; an all-aged structure and multayered canopy; aggregations of tree species that are not typical of the surrounding upland forest; and standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

#	Question	YES	NO
8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of open forest canopy consisting of deciduous trees with a diameter at breast height (dbh) generally diameters greater than 15cm (17 7/8" dbh)?	Wetland should be evaluated for possible Category 3 status. Go to Question 8a	Go to Question 8a
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 Go to Question 8b	NO 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 leeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 8c
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 Go to Question 10	NO 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 Wetland is a Category 3 wetland Go to Question 10	NO 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 Wetland should be evaluated for possible Category 3 status Go to Question 10	NO 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 graminaceous 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 the type of wetland and its quality.	YES Wetland is a Category 3 wetland Go to Question 11	NO 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 Merion 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 Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1 Characteristic plant species

[illegible]

End of Narrative Rating. Begin Quantitative Rating on next page.

Metric 1. Wetland Area (size).

Select one size class and assign score.

Wetland Area (size)	Score
> 200 acres (10.1 to 10.9 ha)	5
25 to < 200 acres (10.1 to < 20.2 ha)	4
10 to < 25 acres (4.3 to < 10.1 ha)	3
3 to < 10 acres (1.2 to < 4 ha)	2
0.5 to < 3 acres (0.2 to < 1.2 ha)	1
0.1 to < 0.5 acres (0.04 to < 0.2 ha)	0
< 0.1 acres (0.04 ha)	0

14	16
near 1st pop.	subsite

2a. Calculate buffers with width. Select only one and select zones. Do not double check.

2b. Buffers

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)
NARROW	Buffers average 10m to <25m (33 to <82ft) around wetland perimeter (1)
VERY NARROW	Buffers average <10m (<33ft) around wetland perimeter (5)

2c. Intensity of surrounding land use. Select one or double check and average.

VERY LOW	2nd growth or older forest, prairie, tamarisk, wetlands, etc. (7)
LOW	Old field (>10 years), shrubland, young forest growth forest. (5)
MODERATELY HIGH	Recreational, mixed pastures, park, commercial/office, rural use. (3)
HIGH	Urban, industrial, some highways, row cropland, highways, construction. (1)

16	32	about
near top.		
Metric 3. Hydrology.		
3a. Sources of water. Score all that apply		
		High pH groundwater (6)
		Other groundwater (3)
	X	Precipitation (1)
		Seasonally/intermittent surface water (1)
		Perennial surface water (lake or stream) (1)
3b. Maximum water depth. Score only one and assign score.		
		>0.7 (27 in) (3)
		0.4 to 0.7 m (15.7 to 27 in) (2)
	X	<0.4m (<15.7in) (1)
3c. Modifications to natural hydrologic regime		
		None or none apparent (12)
	X	Recovered (7)
		Recovering (2)
		Reverted or no recovery (1)

26. Connectivity	Score all find apply
	(100 year floodplain) (1)
	Between streamlines and other human use (1)
	Part of wetland/pond (e.g. breast), complex (1)
	X Part of riparian or upland corridor (1)
	Observation, Score one or five check.
	Sinks to permeability hindered/enhanced (4)
	Regularly inundated/denuded (3)
	X Seldomly inundated (2)
	Seldomly returned to upper 30cm (10m)(1)
	point source (nonstormwater)
	Mining/grading
	road bed/RIP track
	dredging
	Other clearing

max 20 pts.	subtotal	15	47
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Metric 4. Habitat Alteration and Development

4a. Substrate disturbance. Score one or double check and average

	X	None or none apparent (4)
		Recovered (3)
		Recovering (2)
		Steady or no recovery (1)
4b. Habitat development.		Select only one and assign score.
		Excellent (7)
		Very good (6)
		Good (5)
		Moderately good (4)
		Fair (3)
	X	Poor to fair (2)
		Poor (1)
4c. Habitat alteration.		Score one or double check and average.
	X	None or none apparent (6)
		Recovered (5)
		Recovering (3)
		Steady or no recovery (1)

Only all disturbances observed	<input type="checkbox"/> mowing <input type="checkbox"/> grazing <input type="checkbox"/> shepherding <input type="checkbox"/> selective cutting <input type="checkbox"/> woody debris removal <input type="checkbox"/> toxic pollutants	<input type="checkbox"/> shrub/sapling removal <input type="checkbox"/> herbaceous/aquatic bed removal <input type="checkbox"/> sedimentation <input type="checkbox"/> dredging <input type="checkbox"/> burning <input type="checkbox"/> nutrient enrichment
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47

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

0	47	Score all present using 0 to 3 scale
1		Bar (10)
2		Fern (10)
3		Old growth forest (10)
4		Mature forested wetland (5)
5		Lake Erie coastal/subsidiary wetland -unrestricted hydrology (10)
6		Lake Erie coastal/subsidiary wetland-restricted hydrology (5)
7		Lake Erie Plain Sand Prairie (Oak Openings) (10)
8		Relict Wet Prairies (10)
9		Known common state-listed threatened or endangered species (10)
10		Significant migratory songbird/waterfowl habitat or usage (10)
11		Category 1 Wetland. See Question 1 Qualitative Rating (-10)

Metric 6. Plant communities, interspersions, microtopography.

Score all present using 0 to 3 scale

0	47	Vegetation Community Cover Scale
1		Present and other 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 other 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 other comprises significant part, or most, of wetland's vegetation and is of high quality

Other

Horizontal (from view) interspersions.

1		Emergent
2		Shrub
3		Forest
4		Mudflats
5		Open Water

Table 1 ORAM long form for list. Add or deduct points for coverage.

Score all present using 0 to 3 scale

Microtopography

Score all present using 0 to 3 scale

Vegetated hummocks/mounds

Crowns woody debris > 15cm (6in)

Standing dead > 25cm (10in) dbh

Amphibian breeding ponds

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

0

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 8c. Lake Erie Wetlands - Restricted	YES	NO	If yes, evaluate for Category 3, may also be 1 or 2
	Question 8d. Lake Erie Wetlands - Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 8e. 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	14		
	Metric 3. Hydrology	16		
	Metric 4. Habitat	15		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersions, microtopography	0		
	TOTAL SCORE	47		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: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9c, 10	<input checked="" type="radio"/> YES	Is the 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: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	<input checked="" type="radio"/> YES	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 Narrative Rating No. 5	<input checked="" type="radio"/> YES	Is the 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?	<input checked="" type="radio"/> YES	If the score of the wetland is located within the scoring range of a particular category, the wetland should be assigned to that category. If the score is between 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?	<input checked="" type="radio"/> YES	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/OR is the wetland 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?	<input checked="" type="radio"/> YES	A wetland may be undercategorized using this method, but will 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 wetland may be assigned to a higher category than the ORAM result. OAC Rule 3745-54(C)(2)(f) are controlling, and the under-categorization must be justified, connected, and the under-categorization with supporting reasons or information for this determination should be provided.

Choose one: Category 1 Category 2 Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Ann Gilmore/Mary Gilmore
Date:	11/24/2015
Affiliation:	EnviroScience Inc.
Address:	5070 Stow Road, Stow, Ohio 44224
Phone Number:	330-688-0111
e-mail address:	AGilmore@EnviroScienceInc.com
Name of Wetland:	W-7, W-8
Vegetation Community(ies)	PEM
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.	
Latitude or UTM Coordinate	40 645928, -80 726759, 40 646036
USGS Quad Name	West Point
County	Columbiana
Township	Madison
Section and Subsection	
Hydrologic Unit Code	#05030101
Site Visit	11/24/2015
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	X

Name of Wetland: W-7; W-8	
Wetland Size (acres, hectares)	Total 0.061 acres onsite
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Please refer to site wetlands and water resources map.	
W-7: 0.049 acres onsite W-8: 0.012 acres onsite	
Comments, Narrative Discussion, Justification of Category Changes	
Final score : 46	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 dams or dikes, points where the water velocity changes rapidly as rapids or falls, 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 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 Quadangle 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 41912 July 6, 2000).	YES	Wetland should be evaluated for possible Category 3 status 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	Wetland is a Category 3 wetland. Go to Question 3
3	Documented High Quality Wetland: Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES	Wetland is a Category 3 wetland. 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	Wetland is a Category 3 wetland. 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 percent areal cover) by <i>Phragmites australis</i> , <i>Lytium salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES	Wetland is a Category 3 wetland. Go to Question 8
6	Bog: Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> 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	Wetland is a Category 3 wetland. 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 (6.5-8.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES	Wetland is a Category 3 wetland. 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 disturbances during the past 60 to 100 years, an all-aged structure and multilayered canopy, aggregations of canopy trees interspersed with canopy gaps, and significant numbers of standing dead snags and downed logs?	YES	Wetland is a Category 3 wetland. 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	Wetland should be evaluated for possible Category 3 status 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	Go to Question 9b
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	Wetland should be evaluated for possible Category 3 status 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	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	Wetland is a Category 3 wetland 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	Wetland should be evaluated for possible Category 3 status 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 graminaceous 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 the type of wetland and its quality.	YES	Wetland is a Category 3 wetland 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	Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating

Table 1 Characteristic plant species.

[illegible]

End of Narrative Rating. Begin Quantitative Rating on next page.

max # obs	0	0
subset		

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 (0.12 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)
X	

14	14	
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.

	X
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)	
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 explain.

	X	
VERY LOW		2nd growth or older forest, prairie, savannah, wildlife areas, etc. (7)
LOW		Old field (>10 years), shrubland, young second growth forest. (5)
MODERATELY HIGH		Residential, fenced pasture, park, conservation tillage, new yellow field. (3)
HIGH		Urban, industrial, open pasture, row cropping, mining, construction. (1)

16	30	
mean 30 pts.	subtotal	

Metric 3. Hydrology.

	X	Precipitation (1)
		Seasonal/intermittent surface water (3)
		Perennial surface water (lakes or streams) (5)
		Other groundwater (3)
		High pH groundwater (5)

3c. Maximum water depth. Select only one and assign score.

<input type="checkbox"/>	>0.7 (27 dm) (3)
<input type="checkbox"/>	0.4 to 0.7m (15.7 to 27 dm) (2)
<input checked="" type="checkbox"/>	<0.4m (<15.7m) (1)

	X	Name or none apparent (12)	Recovered (7)	Recovering (?)	Recoil or no recovery (1)	Check all disturbances observed
						slitch
						tia
						dike

weather	stormwater input
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max 20 det.	15	45
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Metric 4. Habitat Alteration and Development

4a. Substrate disturbance. Score one for double check and average

	X	None or none apparent (4)
		Recovered (3)
		Recovering (2)
		Repet or no recovery (1)

1b. Habitat development. Select only one and assign score

Excellent (7)
Very good (6)
Good (5)
Moderately good (4)
Scale (3)

Rate (3)	Poor to fair (2)	Poor (1)	Score rate available and material
X			

X	None or none apparent (0)	Check all activities observed
	Recovered (6)	moving
	Recovering (3)	grading
	Recent or no recovery (1)	decalcifying

45

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES 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: Narrative Rating Nos. 1, 8b, 9b, 9c, 11	YES 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 Narrative Rating No. 5	YES 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 for a Category 1, 2, or 3 wetland?	YES 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 the rare cases however, if 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 within the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES 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 nonrigid wetland assessment method, a 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 a Category 2 wetland) or a Category 3 wetland (in the case of superior functions) by the method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO A wetland may be undercategorized using the method, but still exhibit one or more superior functions, e.g., a wetland a 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.

Choose one Category 1 Category 2 Category 3 Final Category

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name	Brian Slaby
Date	04/29/2015
Affiliation	EnviroScience Inc.
Address	5070 Stow Road, Stow, Ohio 44224
Phone Number	330-888-0111
e-mail address	BSlaby@EnviroScienceInc.com
Name of Wetland	W-9
Vegetation Community(ies)	PEM
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	40 648648 -80 720569
USGS Quad Name	West Point
County	Columbiana
Township	Madison
Section and Subsection	
Hydrologic Unit Code	#05030101
Site Visit	04/29/2015
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	X

Name of Wetland: W-9	
Wetland Size (acres, hectares): 0.040 acres 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 : 46	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.

Step	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, 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/dnsp>. 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 Quadrange 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 17.85(a)) and the Piping Plover has had critical habitat proposed (50 CFR 41812 July 8, 2000).	YES	Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrence of federal or state-listed threatened or endangered plant or animal species?	YES	Go to Question 2
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES	Go to Question 3
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical migrant, or shorebird concentration areas?	YES	Go to Question 4
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 <i>Phragmites australis</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES	Go to Question 5
6	Bog. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> 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	Go to Question 6
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 (6.5-8.0), and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES	Go to Question 7
8a	Old Growth Forest. Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: 1) canopy height greater than 15m (50%), 2) canopy structure with a well-developed canopy, 3) evidence of human-caused secondary disturbance during the past 80 to 100 years, an at-aged structure and multilayered canopy, aggregations of canopy trees interspersed with canopy gaps, and significant numbers of standing dead snags and downed logs?	YES	Go to Question 8a

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	Go to Question 8a
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	Go to Question 9a
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	Go to Question 9b
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 a "restuarine" wetland with lake and river influenced hydrology. These include: accretion, deposition of sediments, reduced salinity, river mouth effects, or loss of a process of natural succession. Is vegetation in this wetland composed of native species? Is vegetation tolerant to native species can also be present?	YES	Go to Question 9c
9d	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES	Go to Question 9d
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES	Go to Question 9e
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 grassy 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	Go to Question 10
11	Strict 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 (Medison and Union Counties), Sandusky (Wayne County), and the Huron (Lorain, Wood, and Lucas Counties), in western Ohio. B. Eastern Wood Counties, and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES	Go to Question 11

ORAM Summary Worksheet

[illegible]

End of Narrative Rating. Begin Quantitative Rating on next page.

	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
Quantitative Rating	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
	Metric 1 Size	0		
	Metric 2 Buffers and surrounding land use	11		
	Metric 3 Hydrology	21		
	Metric 4 Habitat	13		
	Metric 5 Special Wetland Communities	0		
	Metric 6 Plant communities, interspersed, microtopography	1		
	TOTAL SCORE	46		Category based on score breakdowns 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: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES 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: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES 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 Narrative Rating No. 5	YES 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 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 within the "gray zone" for Category 1 or 2? Category 2 or 3 wetlands?	YES 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 narrated wetland assessment method, e.g. biological and/or functional assessments, 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 the method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO 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 the circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be connected. A written justification with supporting reasons or information for this determination should be provided.

Choose one Category 1 Category 2 Category 3 Final Category

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name:	Brian Slaby
Date:	04/29/2015
Affiliation:	EnviroScience Inc.
Address:	5070 Stow Road, Stow, Ohio 44224
Phone Number:	330-688-0111
e-mail address:	BSlaby@EnviroScienceInc.com
Name of Wetland:	W-10, W-11
Vegetation Community(ies):	PFO
Wetland 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	40 648807, -80 719299, 40 648657, -80.718814
USGS Quad Name	West Point
County	Columbiana
Township	Madison
Section and Subsection	
Hydrologic Unit Code	#05030101
Site Visit	04/29/2015
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	X

Name of Wetland: W-10, W-11	
Wetland Size (acres, hectares):	Total 0.610 acres onsite
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Please refer to site wetlands and water resources map.	
W-10: 0.101 acres onsite W-11: 0.510 acres onsite	
Comments, Narrative Discussion, Justification of Category Changes	
Final score: 47.5	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 abruptly. Such evidence includes both natural and human-induced changes including modifications caused by ditches or dikes, points where the water velocity changes rapidly, all rapids or falls, 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 other 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/dnsp>. 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 Quadrange 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 17.65(c)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES NO	Go to Question 2 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 NO	Go to Question 3 Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Databases as a high quality wetland?	YES NO	Go to Question 4 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 NO	Go to Question 5 Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size, hydrologically isolated, and either 1) comprised of vegetation that is dominated (greater than eighty percent cover) by <i>Phalaris arundinacea</i> , <i>Lytis arifolia</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES NO	Go to Question 6 Go to Question 6
6	Boots. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> 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 NO	Go to Question 7 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 (6.5-8.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES NO	Go to Question 8a 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 NO	Go to Question 8b Go to Question 8b

#	Question	YES	NO
8b	Mature forested wetlands. Is the wetland a forested wetland with 50% more of the cover of upper forest canopy consisting of deciduous trees with a minimum diameter at breast height (dbh), generally diameters greater than 45cm (17 7/8 inch) dbh?	YES Wetland should be evaluated for possible Category 3 status.	NO Go to Question 8a
8a	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 Go to Question 8a	NO Go to Question 10
9a	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants 1) is the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status	NO Go to Question 9a
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 Go to Question 10	NO 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 Wetland is a Category 3 wetland	NO Go to Question 9a
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status	NO 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 descriptions: 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 grassy 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 Wetland is a Category 3 wetland	NO 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 (Wyandott, 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 Wetland should be evaluated for possible Category 3 status	NO Complete Quantitative Rating

ORAM v 8.0 Field Form Quantitative Rating

W-10 & W-11

Site: South Field Energy Interconnection Facilities Rating: B Slaby Date: 4/30/2015

42.5

0 42.5

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

<input type="checkbox"/>	Bog (10)
<input type="checkbox"/>	Fen (10)
<input type="checkbox"/>	Old growth forest (10)
<input type="checkbox"/>	Mature forested wetland (5)
<input type="checkbox"/>	Lake Erie coastal/tributary wetland -unrestricted hydrology (10)
<input type="checkbox"/>	Lake Erie coastal/tributary wetland-restricted hydrology (5)
<input type="checkbox"/>	Lake Plain Sand Prairie (Oak Openings) (10)
<input type="checkbox"/>	Relict Wet Prairie (10)
<input type="checkbox"/>	Known occurrence state/provincial threatened or endangered species (10)
<input type="checkbox"/>	Significant migratory songbird/water fowl habitat or usage (10)
<input type="checkbox"/>	Category 1 Wetland. See Question 1 Qualitative Rating (10)

Metric 6. Plant communities, interspersions, microtopography.

5	47.5	Score at present using 0 to 3 scale
5	47.5	Score at present using 0 to 3 scale

<input type="checkbox"/>	Aquatic bed
<input type="checkbox"/>	Emergent
<input type="checkbox"/>	1 Shrub
<input type="checkbox"/>	2 Forest
<input type="checkbox"/>	Mudflat
<input type="checkbox"/>	Open Water
<input type="checkbox"/>	Other

47.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM score certification report for the scoring breakdown between categories at the following address: <http://pdx.state.or.us/wetland/0401401.html>

ORAM Summary Worksheet

Narrative Rating	Question 1 Critical Habitat	Question 2 Threatened or Endangered Species	Question 3 High Quality Natural Wetland	Question 4 Significant bird habitat	Question 5 Category 1 Wetlands	Question 6 Bogs	Question 7 Fens	Question 8a Old Growth Forest	Question 8b Mature Forested Wetland	Question 8c Lake Erie Wetlands - Restricted	Question 9a Lake Erie Wetlands - Unrestricted with native plants	Question 9b Lake Erie Wetlands - Unrestricted with invasive plants	Question 10 Oak Openings	Question 11 Relict Wet Prairies	Quantitative Rating	circle answer or insert score	Result
	YES (NO)	YES (NO)	YES (NO)	YES (NO)	YES (NO)	YES (NO)	YES (NO)	YES (NO)	YES (NO)	YES (NO)	YES (NO)	YES (NO)	YES (NO)	YES (NO)			
															2		If yes, Category 3
															8		If yes, Category 3
															19 5		If yes, Category 3
															13		If yes, Category 3
															0		If yes, Category 3
															5		If yes, Category 3
															47 5		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: Narrative Rating Nos 2, 3, 4, 6, 7, 8a, 9d, 10	YES Wetland is categorized as a Category 3 wetland	NO Is quantitative rating score less than the Category 2 scoring threshold (excluding grey 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: Narrative Rating Nos. 1, 8b, 9b, 9a, 11	YES 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 Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	NO Is quantitative rating score greater than the Category 2 scoring threshold (including any grey 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 of a Category 1, 2, or 3 wetland?	YES 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 of a particular category, the wetland should be assigned to that category. If all 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 within the "grey zone" for Category 1 or 2 or Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on 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 superior functions AND the wetland is 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 Wetland was under-categorized by this method. A written justification for re-categorization should be provided on Background Information Form	NO A wetland may be under-categorized 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) and (3) are controlling and the wetland should remain in the category assigned. A written justification with supporting reasons or information for this determination should be provided.

Choose one Category 1 Category 2 Category 3 Final Category

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name	Laura Sayre
Date	04/30/2015
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-12
Vegetation Community(ies)	PEM
RGM 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	40 847193, -80.717561
USGS Quad Name	West Point
County	Columbiana
Township	Yellow Creek
Section and Subsection	
Hydrologic Unit Code	#05030101
Site Visit	04/30/2015
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	X

Name of Wetland: WL-12	
Wetland Size (acres, hectares)	0.012 acres onsite
Sketch. Includes 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 : 29.5	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/dnsp>. 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, all of the Federal Ohio Wetlands Inventory has been critical habitat designations (50 CFR 17.96(a)) and the listing power has been critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO 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 Wetland is a Category 3 wetland Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO 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 Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland (less than 0.2 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent area cover) by <i>Phalaris australis</i> , <i>Lytium salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Boggs. Is the wetland a peat accumulating wetland that 1) has no bogs, is the bog or carbonaceous, 2) the peat depth is greater than 20 cm, 3) the peat depth is greater than 20 cm, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO 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 Wetland is a Category 3 wetland Go to Question 8a	NO 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 Wetland is a Category 3 wetland Go to Question 8b	NO 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 diameter at breast height (d.b.h.), generally diameters greater than 45cm (17 7/8 inch) d.b.h.?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 8a	NO Go to Question 8a
8a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet to the USGS map, adjacent to the shoreline, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 8b	NO Go to Question 10
8b	Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants. Is the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 8c	NO Go to Question 8c
9c	Are Lake Erie water levels the wetland's primary hydrological influence. Is the wetland 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 Wetland is a Category 3 wetland Go to Question 10	NO 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 Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO 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 graminaceous 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 Wetland is a Category 3 wetland Go to Question 11	NO 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 Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1 Characteristic plant species.

[illegible]

End of Narrative Rating **Begin Quantitative Rating on next page.**

Metric 1. Wetland Area (size).

interval	frequency	relative frequency	percentage
<0	1	0.04	4%
0 to <0.5	3	0.12	12%
0.5 to <1	1	0.04	4%
1 to <1.5	1	0.04	4%
1.5 to <2	1	0.04	4%
2 to <2.5	1	0.04	4%
2.5 to <3	1	0.04	4%
3 to <3.5	1	0.04	4%
3.5 to <4	1	0.04	4%
4 to <4.5	1	0.04	4%
4.5 to <5	1	0.04	4%
5 to <5.5	1	0.04	4%
5.5 to <6	1	0.04	4%
6 to <6.5	1	0.04	4%
6.5 to <7	1	0.04	4%
7 to <7.5	1	0.04	4%
7.5 to <8	1	0.04	4%
8 to <8.5	1	0.04	4%
8.5 to <9	1	0.04	4%
9 to <9.5	1	0.04	4%
9.5 to <10	1	0.04	4%
10 to <10.5	1	0.04	4%
10.5 to <11	1	0.04	4%
11 to <11.5	1	0.04	4%
11.5 to <12	1	0.04	4%
12 to <12.5	1	0.04	4%
12.5 to <13	1	0.04	4%
13 to <13.5	1	0.04	4%
13.5 to <14	1	0.04	4%
14 to <14.5	1	0.04	4%
14.5 to <15	1	0.04	4%
15 to <15.5	1	0.04	4%
15.5 to <16	1	0.04	4%
16 to <16.5	1	0.04	4%
16.5 to <17	1	0.04	4%
17 to <17.5	1	0.04	4%
17.5 to <18	1	0.04	4%
18 to <18.5	1	0.04	4%
18.5 to <19	1	0.04	4%
19 to <19.5	1	0.04	4%
19.5 to <20	1	0.04	4%
20 to <20.5	1	0.04	4%
20.5 to <21	1	0.04	4%
21 to <21.5	1	0.04	4%
21.5 to <22	1	0.04	4%
22 to <22.5	1	0.04	4%
22.5 to <23	1	0.04	4%
23 to <23.5	1	0.04	4%
23.5 to <24	1	0.04	4%
24 to <24.5	1	0.04	4%
24.5 to <25	1	0.04	4%
25 to <25.5	1	0.04	4%
25.5 to <26	1	0.04	4%
26 to <26.5	1	0.04	4%
26.5 to <27	1	0.04	4%
27 to <27.5	1	0.04	4%
27.5 to <28	1	0.04	4%
28 to <28.5	1	0.04	4%
28.5 to <29	1	0.04	4%
29 to <29.5	1	0.04	4%
29.5 to <30	1	0.04	4%
30 to <30.5	1	0.04	4%
30.5 to <31	1	0.04	4%
31 to <31.5	1	0.04	4%
31.5 to <32	1	0.04	4%
32 to <32.5	1	0.04	4%
32.5 to <33	1	0.04	4%
33 to <33.5	1	0.04	4%
33.5 to <34	1	0.04	4%
34 to <34.5	1	0.04	4%
34.5 to <35	1	0.04	4%
35 to <35.5	1	0.04	4%
35.5 to <36	1	0.04	4%
36 to <36.5	1	0.04	4%
36.5 to <37	1	0.04	4%
37 to <37.5	1	0.04	4%
37.5 to <38	1	0.04	4%
38 to <38.5	1	0.04	4%
38.5 to <39	1	0.04	4%
39 to <39.5	1	0.04	4%
39.5 to <40	1	0.04	4%
40 to <40.5	1	0.04	4%
40.5 to <41	1	0.04	4%
41 to <41.5	1	0.04	4%
41.5 to <42	1	0.04	4%
42 to <42.5	1	0.04	4%
42.5 to <43	1	0.04	4%

Metric 2. Upland buffers and surrounding land use.

mean 10 yph	standard
2a. Candidate average buffer width. Select only one and assign score. Do not double check.	
1	WIDE. Buffer average 100 (54.8) or more around wetland perimeter (7)
2	MEDIAL. Buffer average 25m to <50m (92.4 to <154.0) around wetland perimeter (4)
3	NARROW. Buffer average 10m to <25m (37.3 to <92.4) around wetland perimeter (1)
2b. Phragmites	
1	VERY NARROW. Buffers average <10m (<37.3) around wetland perimeter (0)
2	VERY LOW. Second growth or older forest, profile, savannah, wetlands area, etc. (7)
3	MODERATELY HIGH. Residential, forested pasture, park, conservation refuge, new forest (2)
4	HIGH. Urban, industrial, open pasture, open cropland, marsh, conservation (1)

Metric 3. Hydrology.

new 30 yd.	about	3a. Sources of water. Score all third apply
		High pH groundwater (5)
		Other groundwater (5)
	1	Pre-oxidation (1)
		Seasonal/intermittent surface water (1)
		Perennial surface water (lake or stream) (1)
		Sum of all water sources = 10 (7/27) (3)
		0.4 to 0.7m (15.7 to 27 ft) (2)
		<0.4m (<15 ft) (1)
		3c. Maximum water depth. Scaled only one and assign score.
		None or none apparent (1/2)
	7	Recovered (7)
	3	Recovering (3)
		Recoiled or no recovery (1)

Metric 4. Habitat Alteration and Development

area 25 yds.	subtotal														
4a. Substrate disturbance. Score one if double check and one if triple check.	<table border="1"> <tr><td>None or none apparent (4)</td></tr> <tr><td>Recovered (3)</td></tr> <tr><td>3</td></tr> <tr><td>Recovering (2)</td></tr> <tr><td>Rebent or no recovery (1)</td></tr> <tr><td>0</td></tr> </table>	None or none apparent (4)	Recovered (3)	3	Recovering (2)	Rebent or no recovery (1)	0								
None or none apparent (4)															
Recovered (3)															
3															
Recovering (2)															
Rebent or no recovery (1)															
0															
4b. Habitat development. Select only one and assign score.	<table border="1"> <tr><td>Excellent (7)</td></tr> <tr><td>Very good (6)</td></tr> <tr><td>Good (5)</td></tr> <tr><td>Moderately good (4)</td></tr> <tr><td>Fair (3)</td></tr> <tr><td>3</td></tr> <tr><td>Poor to fair (2)</td></tr> <tr><td>Poor (1)</td></tr> <tr><td>0</td></tr> </table>	Excellent (7)	Very good (6)	Good (5)	Moderately good (4)	Fair (3)	3	Poor to fair (2)	Poor (1)	0					
Excellent (7)															
Very good (6)															
Good (5)															
Moderately good (4)															
Fair (3)															
3															
Poor to fair (2)															
Poor (1)															
0															
4c. Habitat alteration. Score one if double check and average of three if triple check.	<table border="1"> <tr><td>None or none apparent (8)</td></tr> <tr><td>Recovered (6)</td></tr> <tr><td>6</td></tr> <tr><td>Recovering (3)</td></tr> <tr><td>Rebent or no recovery (1)</td></tr> <tr><td>0</td></tr> </table>	None or none apparent (8)	Recovered (6)	6	Recovering (3)	Rebent or no recovery (1)	0	<table border="1"> <tr><td>Unweeds or disturbance</td></tr> <tr><td>moist</td></tr> <tr><td>grassy</td></tr> <tr><td>clayey</td></tr> <tr><td>select</td></tr> <tr><td>woody</td></tr> <tr><td>toxic</td></tr> </table>	Unweeds or disturbance	moist	grassy	clayey	select	woody	toxic
None or none apparent (8)															
Recovered (6)															
6															
Recovering (3)															
Rebent or no recovery (1)															
0															
Unweeds or disturbance															
moist															
grassy															
clayey															
select															
woody															
toxic															
		<div>26.5</div> <div>subtotal line only</div>													

ORAM v 6.0 Field Form Quantitative Rating

Site: Southfield Energy Interconnection Facility | Rater(s): L. Sayre | Date: 4/30/2015

26.5
Metric 5. Special Wetlands.
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 Prairie (Oak Openings) (10)
- ☐ Ruled Wet Prairies (10)
- ☐ Known occurrence established threatened or endangered species (10)
- ☐ Significant migratory songbird/waterfowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

3 29.5 Metric 6. Plant communities, interspersions, microtopography.

Score at present using 0 to 3 scale

Vegetation Community Cover Scale

0	1	2	3
Aquatic bed	Emergent	Shrub	Forest
		Maquis	Open Water
			Other

8a. Wetland Vegetation Communities. Score only one.

8b. Horizontal (open water) Waterpersions. Score only one.

Narrative Description of Vegetation Quality

low	mod	high
Low spp diversity and/or predominance of nonnative or disturbance tolerant native spp	Native spp are dominant component of the vegetation, although nonnative spp and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally no presence of rare, threatened, or endangered spp	A predominance of native species, with some native spp and/or disturbance tolerant native spp present or virtually absent, and high spp diversity and cover, but not always the presence of rare, threatened, or endangered spp

Microtopography Cover Scale

0	1	2	3
Extensive >75% cover (-5)	Moderate 25-75% cover (-3)	Sparsely 5-25% cover (-1)	Nearly absent <5% cover (0)
0	1	2	3

Microtopography

0	1	2	3
Vegetated hummocks/rhizoids	Coarse woody debris >15cm (8in)	Standing dead >25cm (10in) dbh	Any other breaking pods
0	1	2	3

29.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM score calibration report for the scoring breakpoints between categories of the following address: <http://apps.state.nh.us/rams/401401.html>

ORAM Summary Worksheet

Narrative Rating	circle answer or insert score	Result
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 9a. Lake Erie Wetlands - Restricted	YES (NO)	If yes, evaluate for Category 3, may also be 1 or 2
Question 9b. Lake Erie Wetlands - Unrestricted with native plants	YES (NO)	If yes, Category 3
Question 9c. 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 Ruled Wet Prairies	YES (NO)	If yes, evaluate for Category 3, may also be 1 or 2
Metric 1 Size	1	
Metric 2 Buffers and surrounding land use	5	
Metric 3 Hydrology	10	
Metric 4 Habitat	10	
Metric 5 Special Wetland Communities	0	
Metric 6 Plant communities, interspersions, microtopography	3	
TOTAL SCORE	29.5	Category based on score breakpoints Category 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: Narrative Rating Nos 2, 3, 4, 6, 7, 8a, 9d, 10	YES 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: Narrative Rating Nos 1, 8b, 9b, 9c, 11	YES 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 Narrative Rating No 5	YES 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 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 within the scoring range for Category 1 or 2? Category 2 or 3 wetlands?	YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	NO Evaluating 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 assessment method, e.g. functional assessment, biological assessment, or 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 Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	NO 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 the circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be connected. A written justification with supporting reasons or information for that 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	04/30/2015
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-13
Vegetation Community(ies)	PEM
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	40 843861, -80.717147
USGS Quad Name	West Point
County	Columbiana
Township	Yellow Creek
Section and Subsection	
Hydrologic Unit Code	#05030101
Site Visit	04/30/2015
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	X

Name of Wetland: W-13	
Wetland Size (acres, hectares)	0.192 acres 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 : 47	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, 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 area 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/dns>.

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 as 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 17.82(c)), and the Piping Plover has had critical habitat designated (50 CFR 17.82(c)).) (USFWS July 3, 2000)	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species: Is the wetland known to contain threatened or, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland: Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO 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 Wetland is a Category 3 wetland Go to Question 5	NO 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 <i>Phragmites australis</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or exacerbated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bog: Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports sedge/peat mosses, particularly <i>Sphagnum</i> spp.; 3) the peat/sedge mosses have >30% cover, 4) at least one species from the list in Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Forest: Is the wetland a carbon accumulating (peat, muck) wetland that is situated during most of the year primarily by a discharge of free flowing, mineral rich ground water with a circumneutral pH (5.5-8.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO 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 estimable age for a species); little or no evidence of human-caused 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 Wetland is a Category 3 wetland Go to Question 8b	NO 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 7/8) dbh?	YES Wetland should be evaluated for possible Category 3 status.	NO Go to Question 8c
8c	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 375 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9a	NO Go to Question 10
9a	Does the wetland's hydrology result from means designed to prevent erosion and the subsequent accumulation of sediment and debris? Is the wetland a Lake Erie due to lake level or reduced dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status	NO Go to Question 8c
9b	Are Lake Erie water levels the wetland's primary hydrological influence, (i.e. the wetland is hydrologically unregulated (no lake level 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 submerged aquatic vegetation wetlands, or those dominated by a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland	NO Go to Question 8c
9c	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status	NO 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 frequent organic matter, a stand of tall grasses with a few scattered trees, and the wetland is adjacent to a body of water (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 Wetland is a Category 3 wetland.	NO 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 Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Table 1 Characteristic plant species

[illegible]

End of Narrative Rating. Begin Quantitative Rating on next page.

Metric 1. Wetland Area (size).

Size class	Number of plots	Mean score	Standard deviation	Standard error	Significance
>60 acres (>20.2ha) (6 pts)	1	1.0	0.0	0.0	
25 to <50 acres (10.1 to <20.2ha) (5 pts)	1	1.0	0.0	0.0	
10 to <25 acres (4 to <10.1 ha) (4 pts)	1	1.0	0.0	0.0	
3 to <10 acres (1.2 to <4 ha) (3 pts)	1	1.0	0.0	0.0	
0.3 to <3 acres (0.12 to <1.2ha) (2 pts)	2	1.0	0.0	0.0	
<0.3 to <3 acres (0.04 to <1.2ha) (1 pt)	1	1.0	0.0	0.0	
<0.1 acres (0.04ha) (0 pts)	1	1.0	0.0	0.0	

Metric 2. Upland buffers and surrounding land use.

21. **PLANT HEALTH** Select only one or more and assign scores. Do not double check.

22. **CONSTANTLY GREEN** Select only one or more and assign scores. Do not double check.

23. **WIDE** Buffers average 50m (164 ft) or more around wetland perimeter (7)

24. **MEDIUM** Buffers average 25m to <50m (82 ft to <164ft) around wetland perimeter (4)

25. **NARROW** Buffers average 10m to <25m (32 ft to <82ft) around wetland perimeter (1)

26. **VERY NARROW** Buffers average <10m (<32ft) around wetland perimeter (0)

27. **AVOIDING** Buffers average <10m (<32ft) around wetland perimeter (0)

28. **INTENSITY** Select one or double check and average.

29. **VERY LOW** 2nd growth or older forest, grass, prairie, tamarisk, willow, etc. (5)

30. **LOW** Old field (> 10 years), shrubland, young second growth forest (4)

31. **MODERATELY HIGH** Residential, farmed pastures, park, conservation lands, new fields (3)

32. **HIGH** Urban, industrial, airport pastures, road crossing, construction (1)

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply		3b. Sources of Water. Score all that apply	
High pH groundwater (3)		High pH groundwater (3)	
Other groundwater (3)		Other groundwater (3)	
Precipitation (1)	1	Precipitation (1)	
Seasonal/infiltrant surface water (4)	3	Seasonal/infiltrant surface water (4)	
Potential surface water (lake or stream) (4)		Potential surface water (lake or stream) (4)	
3c. Sources of Water. Score only one and assign score.		3d. Sources of Water. Score only one and assign score.	
	1-7 (27 total) (3)		1-7 (27 total) (3)
	0.4 to 0.7m (15.7 to 22.0) (2)		0.4 to 0.7m (15.7 to 22.0) (2)
	<0.4m (<15.7) (1)		<0.4m (<15.7) (1)
3e. Measures to natural hydrologic regime		3f. Measures to natural hydrologic regime	
None or none apparent (12)		None or none apparent (12)	
Recovered (3)	7	Recovered (3)	
Recovering (3)		Recovering (3)	
Recent or no recovery (1)		Recent or no recovery (1)	

Meitdc 4. Habitat Alteration and Development

4	None or none apparent (4)	Check all that apply: <input type="checkbox"/> move <input type="checkbox"/> gain <input type="checkbox"/> clean <input type="checkbox"/> select <input type="checkbox"/> ready <input type="checkbox"/> toxic
3	Recovering (3)	
2	Recovering (2)	
1	Recovering (1)	Check all that apply: <input type="checkbox"/> move <input type="checkbox"/> gain <input type="checkbox"/> clean <input type="checkbox"/> select <input type="checkbox"/> ready <input type="checkbox"/> toxic
0	Recovering (0)	
6	Recovering (6)	
5	Recovering (5)	Check all that apply: <input type="checkbox"/> move <input type="checkbox"/> gain <input type="checkbox"/> clean <input type="checkbox"/> select <input type="checkbox"/> ready <input type="checkbox"/> toxic
4	Recovering (4)	
3	Recovering (3)	
2	Recovering (2)	Check all that apply: <input type="checkbox"/> move <input type="checkbox"/> gain <input type="checkbox"/> clean <input type="checkbox"/> select <input type="checkbox"/> ready <input type="checkbox"/> toxic
1	Recovering (1)	
0	Recovering (0)	

42

0 42

Metric 5. Special Wetlands.

max 10 pts

Check all that apply and score as indicated.

- ☐ Bog (10)
- ☐ Fen (10)
- ☐ Old growth forest (10)
- ☐ Mature forested wetland (5)
- ☐ Lake Erie coastal/shrub wetland -unrestricted hydrology (10)
- ☐ Lake Erie coastal/shrub wetland -restricted hydrology (5)
- ☐ Lake Plain Sand Prairies (Oak Openings) (10)
- ☐ Field Wet Prairies (10)
- ☐ Known occurrence state/federal threatened or endangered species (10)
- ☐ Significant migratory songbird/waterfowl habitat or usage (10)
- ☐ Category 1 Wetland. See Question 1 Qualitative Rating (-10)

5 47

Metric 6. Plant communities, interspersions, microtopography.

max 20 pts

8a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale

1	2	3
Emergent	Shrub	Forest
Marsh	Mudflat	Open Water
Other		

8b. Horizontal (plain view) Interspersion.

Score only one.

High (6)	Moderately High (4)	Moderate (3)	Moderately low (2)	Low (1)
1				

8c. Coverage of Invasive Plants. Refer to Table 1 ORAM form for list. Add or deduct points for coverage.

Extensive >75% cover (+5)	Moderate 25-75% cover (+3)	Sparsely 5-25% cover (+1)	Nearly absent <5% cover (0)	Absent (-1)
0				

8d. Microtopography.

Score all present using 0 to 3 scale

0	1	2	3
Vegated hummocks/basins	Coarse woody debris >15cm (5pts)	Standing dead >25cm (10m) dbh	Amphibian breeding pools
0			

47 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://opa.state.nh.us/ram/50/4601.htm>

ORAM Summary Worksheet

Narrative Rating	circle answer or insert score		Result
	YES	NO	
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 9a Lake Erie Wetlands - Restricted	YES	NO	If yes, evaluate for Category 3, may also be 1 or 2
Question 9b Lake Erie Wetlands - Unrestricted with native plants	YES	NO	If yes, Category 3
Question 9c 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
Metric 1 Size	2		
Metric 2 Buffers and surrounding land use	8		
Metric 3 Hydrology	16		
Metric 4 Habitat	16		
Metric 5 Special Wetland Communities	0		
Metric 6 Plant communities, interspersions, microtopography	5		
TOTAL SCORE	47		Category based on score breakpoints Category 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 Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	<input checked="" type="radio"/> YES Wetland is categorized as a Category 3 wetland	<input checked="" type="radio"/> NO Is a 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 Narrative Rating Nos. 1, 8b, 9e, 9f, 11	<input checked="" type="radio"/> YES Wetland should be evaluated for possible Category 3 status	<input checked="" type="radio"/> 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 Narrative Rating No 5	<input checked="" type="radio"/> YES Wetland is categorized as a Category 1 wetland	<input checked="" type="radio"/> NO Is a 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?	<input checked="" type="radio"/> YES Wetland is assigned to the appropriate category based on the scoring range	<input checked="" type="radio"/> 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?	<input checked="" type="radio"/> YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria	<input checked="" type="radio"/> 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 non-scientific 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 the method?	<input checked="" type="radio"/> YES Wetland was under-categorized by this method. A written justification for re-categorization should be provided on Background Information Form	<input checked="" type="radio"/> NO A wetland may be under-categorized 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 the 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 the determination should be provided.

Choose one ☒ Category 1 ☒ Category 2 ☐ Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name	Laura Sayre
Date	04/30/2015
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-14
Vegetation Community(ies)	PEM
RGM 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	40 643601, -80 71842
USGS Quad Name	West Point
County	Columbiana
Township	Yellow Creek
Section and Subsection	
Hydrologic Unit Code	#05030101
Site Visit	04/30/2015
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	X

Name of Wetland W-14	
Wetland Size (acres, hectares)	0.002 acres onsite
Sketch include north arrow, relationship with other surface wetlands, vegetation zones, etc.	
Please refer to site wetlands and water resources map.	
Comments, Narrative Discussion, Justification of Category Changes	
Final score : 48	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 features including: changes in vegetation, soil, or other factors where the wetland hydrology changes rapidly; 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 area 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/dnag>. 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(e)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO 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 Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland: Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland. Go to Question 4	NO 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 Wetland is a Category 3 wetland. Go to Question 5	NO 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 <i>Phragmites australis</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland. Go to Question 6	NO Go to Question 6
6	Bog: Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> 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 Wetland is a Category 3 wetland. Go to Question 7	NO Go to Question 7
7	Fern: Is the wetland a cation 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 (6.5-8.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland. Go to Question 8a	NO 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: 1) a canopy height greater than 20m (66 ft), 2) a projected maximum attainable age for a species, little or no evidence of human-caused 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 Wetland is a Category 3 wetland. Go to Question 8b	NO 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 in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 8a	NO Go to Question 8a
8a	Lake Erie coastal and tributary wetlands: Is the wetland located at an elevation less than 175 feet on the USGS map, adjacent to a river, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 8b	NO Go to Question 10
9a	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 Wetland should be evaluated for possible Category 3 status	NO Go to Question 8c
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 Go to Question 10	NO 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 Wetland is a Category 3 wetland	NO 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 Wetland should be evaluated for possible Category 3 status	NO 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 wettable often within several inches of the surface, and often with a dominance of the graminaceous 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 the type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	NO 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 Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

45

	Bog (10)	
	Fen (10)	
	Old growth forest (10)	
	Mature forested wetland (5)	
	Lake Erie coastal/riftuary wetland - unrestricted hydrology (10)	
	Lake Erie coastal/riftuary wetland-restricted hydrology (5)	
	Lake Erie coastal/riftuary wetland-restricted hydrology (10)	
	Lake Erie coastal/riftuary wetland-restricted hydrology (5)	
	Lake Erie coastal/riftuary wetland-restricted hydrology (10)	
	Reed Wet Prairie (10)	
	Known occurrence state/federal threatened or endangered species (10)	
	Significant migratory songbird/water fowl habitat or staging (10)	
	Cattaraugus Wetland - See Question 1 (Qualitative Rating 1-5)	

Vegetation Community Cover		Scale
	0	Absent or comprises <20% (to 47.7% score) SOD/roots and
	1	Present and either comprises small part of wetland's vegetation and 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

Score only rare	low	high
High (5)	Low spp. diversity and/or predominance of native or disturbance tolerant native species	A predominance of native species, with native spp. and/or disturbance tolerant spp. absent or virtually absent, and high diversity of native spp. but few, if any, of disturbance tolerant, or specialized spp.
Moderately high (4)	Native spp. are dominant component of the vegetation, although native and/or disturbance tolerant native spp. may also be present, and species diversity moderate to moderately high, but generally no presence of rare, threatened, or endangered spp.	
Modulate (3)		
Moderately low (2)		
Low (1)		
1		
None (0)		
Low score of invasive plants. Refer to		

Table 1. GRAM long form for test. Add or deduct points for coverage.	Mucifier and Open Water Class Quality
0	Absent < 0.1% (0.247 acres)
1	Low 0.1 to < 0.5% (0.547 to 2.47 acres)
2	Moderate 1 to < 2% (2.47 to 9.98 acres)
3	High 2% to > 2% (9.98 acres) or more
Microtopography Cover Ratio	
0	Absent

6d. Macrophyte Score as present using 0 to 3 scale.		1	2	3	
0	Vegetated Nymphaeaceae	Present in very small amounts or if more common of marginal quality	Present in moderate amounts, but not of highest quality or in small amounts of highest quality	Present in moderate or greater amounts and of highest quality	
0	Coarse woody debris >15cm (8in)				
0	Standing dead >25cm (10in) dbh				
0	Amphibian breeding pools				

10 TOTAL (max 100 pts)

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "yes" to any of the following questions Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	YES	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 Narrative Rating Nos. 1, 8b, 9b, 9c, 11	YES	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 Narrative Rating No. 5	YES	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	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	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 reconsideration of the narrative criteria in OAC rule 3745-1-54(C).
Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat OR biotic communities AND the wetland is categorized as a Category 2 wetland (in the case of moderate functional) or a Category 3 wetland (in the case of superior functions) by this method?	YES	A wetland may be undercategorized using this method, but will 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 topography, etc. In such cases, the wetland should be assigned to the higher of the two categories. The parameters criteria in OAC Rule 3745-1-54(C)(2) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Choose one Category 1 Category 2 Category 3 Final Category

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name	Laura Sayre
Date	04/30/2015
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
Vegetation Community(ies)	PEM
HGM Class(es)	Riverine/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 Coordinates	40 64108, -80 716099
USGS Quad Name	West Point
County	Columbiana
Township	Yellow Creek
Section and Subsection	
Hydrologic Unit Code	#05030101
Site Visit	04/30/2015
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	X

Name of Wetland: W-15	
Wetland Size (acres, hectares):	0.158 acres 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 : 23	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 estuaries 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 area 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/inap>. 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 a threatened or endangered plant or animal species? Note: as of January 1, 2001, the Federal Register has listed 10 threatened species which have been listed in Ohio. The Rater has had critical habitat designated (50 CFR 17.85(a)) and the following power has been critical habitat proposed (65 FR 41812, July 6, 2000): 1) 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 Wetland should be evaluated for possible Category 3 status Go to Question 2	NO 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 Wetland is a Category 3 wetland Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in the Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO 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 Wetland is a Category 3 wetland Go to Question 5	NO 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) composed of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phragmites australis</i> , <i>Littorale salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Category 2 Wetlands. Is the wetland a peat 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 Wetland is a Category 2 wetland Go to Question 7	NO 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 Wetland is a Category 3 wetland Go to Question 8a	NO 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 undisturbed 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 Wetland is a Category 3 wetland Go to Question 8b	NO Go to Question 8b

8b	Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17 7/8) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 8a	NO Go to Question 8a
9a	Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 375 feet on the USGS map, adjacent to the shoreline, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 8b	NO 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 primarily hydrologically restricted from Lake Erie due to lakeward or landward ditches or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 8c	NO Go to Question 8c
9c	Are Lake Erie wetland levels the wetland's primary hydrological influence. Is the wetland 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 wetlands. 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 Go to Question 10	NO Go to Question 10
9d	Does the wetland have a predominance of non-native or disturbance tolerant native species within its vegetation communities?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
9e	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO 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 is often with a dominance of the prairie grasses, <i>Andropogon scoparius</i> and <i>Stachytarpheta</i> also be present. The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming the type of wetland and its quality.	YES Wetland is a Category 3 wetland Go to Question 11	NO 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 prairie were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wayne, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. DeKalb, Mercer, Milan, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	NO Complete Quantitative Rating

Site:		Rater(s): L. Sayre	Date: 4/30/2015
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27

Metric 5. Special Wetlands.

max 10 pts.	0	27	subtotal
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Metric 5. Special Wetlands

Check all that apply and score as indicated.

	Bog (10)
	Fen (10)
	Old growth forest (10)
	Mature forested wetland (5)
	Lake Erie coastal/riftuary wetland -unresticted hydrology (10)
	Lake Erie coastal/riftuary wetland-restricted hydrology (5)
	Lake Plain Sand Prairies (Oak Openings) (10)
	Relict Wet Prairies (10)
	Known occurrences state/ederal threatened or endangered species (10)
	Significant migratory songbird/winter food habitat or usage (10)
	Cyprinids - 1 Wetland. See Question 4 Qualitative Rating (10)

Metric 6. Plant communities, Interspersion, microtopography.

-4	23	max 20 pts	4.0004	8a. Wetland Vegetation Communities.	Vegetation Community Cover Scale
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Score at present using 0 to 3 scale		0	1	2	3
0	Emergent	Present and comprises <10% of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of high quality
1	Shrub	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of high quality
2	Forest	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of high quality
3	Marl/mud	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of high quality
	Open Water	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality	Present and comprises a significant part of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality	
Other _____	Interpersation
3b. Horizontal (plain view) Interpersation	

Low spp diversity and/or predominance of nonnative or disturbance tolerant native species	low	mod	High (5)
			Highly High (4)
			Moderate (3)
			Moderately High (2)

Low (1)	High
1	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

Product point for coverage	1	0
Extensive >75% cover (-6)	Low 0 to <10 (0.247 to 2.47 acres)	High >10 (2.47 to 24.7 acres)
Moderate 25-75% cover (-3)	2	Moderate 1 to <10 (2.47 to 9.98 acres)
Sparsely 5-25% cover (-1)	3	High >10 (9.98 acres) or more

V	V nearly identical to V lower (V)	intralinguistic cross class	
		0	Absent

Id.	Microphotography	Present in very small amounts or if more common of marginal quality
1		

1	Vegetated buttmuck/austuck	2	Present in moderate amounts, but not of highest quality or in small amounts of highest quality
1	Coarse woody debris > 15cm (6in)		

0	Standing dead >25cm (10in) dbh	3	Present in moderate or greater amounts and of highest quality
0	Amphibian breeding pools		

23	GRAND TOTAL (max 100 pts)
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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 8c 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
Quantitative Rating	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 Rarest Wet Prairies	YES (NO)	If yes, evaluate for Category 3, may also be 1 or 2
	Metric 1 Size	0	
	Metric 2 Buffers and surrounding land use	5	
	Metric 3 Hydrology	12	
	Metric 4 Habitat	9	
	Metric 5 Special Wetland Communities	0	
	Metric 6 Plant communities, interspersed, microtopography	-4	
	TOTAL SCORE	23	Category based on score breakpoints Category 1

Wetland Categorization Worksheet

Choices	Circle one	Evaluation of Categorization Result of ORAM
Did you answer "yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 8d, 10	<input checked="" type="radio"/> YES <input type="radio"/> 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 functional assessments to determine if the wetland has been over-categorized by the ORAM.
Did you answer "yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9c, 11	<input checked="" type="radio"/> YES <input type="radio"/> NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative scoring threshold. 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 functional assessments may also be used to determine the wetland's category.
Did you answer "yes" to Narrative Rating No. 5	<input checked="" type="radio"/> YES <input type="radio"/> 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 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?	<input checked="" type="radio"/> YES <input type="radio"/> 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?	<input checked="" type="radio"/> YES <input type="radio"/> 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 the method?	<input checked="" type="radio"/> YES <input type="radio"/> NO	A wetland may be undercategorized using the 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 the 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.

Choose one ☒ Category 1 ☐ Category 2 ☐ Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Background Information

Name	Brian Slaby
Date	04/29/2015
Affiliation	EnviroScience Inc.
Address	5070 Stow Road, Stow, Ohio 44224
Phone Number:	330-688-0111
e-mail address	BSlaby@EnviroScienceInc.com
Name of Wetland:	W-16, W-17
Vegetation Community(ies)	PEM
Habitat 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	40.640622, -80.7093, 40 640604, -80.70874
USGS Quad Name	West Point
County	Columbiana
Township	Yellow Creek
Section and Subsection	
Hydrologic Unit Code	#05030101
Site Visit	04/29/2015
National Wetland Inventory Map	X
Ohio Wetland Inventory Map	
Soil Survey	X
Delineation report/map	X

Name of Wetland: W-16, W-17	
Wetland Size (acres, hectares)	Total 0.844 acres onsite
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
Please refer to site wetlands and water resources map	
W-16: 0.139 acres onsite	
W-17: 0.706 acres onsite	
Comments, Narrative Discussion, Justification of Category Changes	
Final score : 43	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 conditions caused by beaver activity, point source effluents, rapidly changing water levels, or other factors that may indicate 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 due 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 2.5 minute Quad 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 Wetland should be evaluated for possible Category 3 status Go to Question 2	NO 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 Wetland is a Category 3 wetland Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO 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 Wetland is a Category 3 wetland Go to Question 5	NO 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 1) a) Phragmites, 2) a) Phragmites, 3) a) Phragmites, 4) a) Phragmites, 5) a) Phragmites, 6) a) Phragmites, 7) a) Phragmites, 8) a) Phragmites, 9) a) Phragmites, 10) a) Phragmites, 11) a) Phragmites, 12) a) Phragmites, 13) a) Phragmites, 14) a) Phragmites, 15) a) Phragmites, 16) a) Phragmites, 17) a) Phragmites, 18) a) Phragmites, 19) a) Phragmites, 20) a) Phragmites, 21) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO 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 <i>Sphagnum</i> 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 Wetland is a Category 3 wetland Go to Question 7	NO 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 (6.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO 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 undisturbed 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 Wetland is a Category 3 wetland Go to Question 8b	NO Go to Question 8b

#	Question	YES	NO
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 diameter (at least 17 cm dbh), generally diameters greater than 100 cm (17 in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 8a	NO Go to Question 8a
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 Wetland should be evaluated for possible Category 3 status. Go to Question 8b	NO Go to Question 8b
9b	Wetlands of Lake Erie. Is the wetland a wetland that is partially hydrologically restricted from Lake Erie due to lateral or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 10	NO Go to Question 10
9c	Are Lake Erie water levels the wetland's primary hydrological influence. Is the wetland 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 wetlands. 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 Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 10
9d	Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 10	NO 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 graminaceous 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 Wetland is a Category 3 wetland Go to Question 11	NO 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 Wetland should be evaluated for possible Category 3 status. Complete Quantitative Rating	NO Complete Quantitative Rating