Appendix 3 Study Area Soil Report

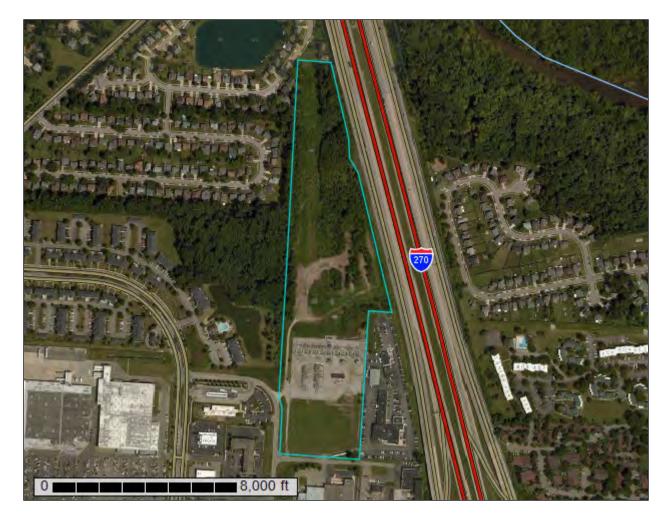


NRCS

Natural Resources Conservation Service A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Franklin County, Ohio

AEP Morse Road Substation and Line



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

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scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

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identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

-

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

(0)

Blowout

 \boxtimes

Borrow Pit

Ж

Clay Spot

Gravel Pit

^

Closed Depression

~

.

Gravelly Spot

0

Landfill Lava Flow

٨

Marsh or swamp

@

Mine or Quarry

0

Miscellaneous Water

Perennial Water

0

Rock Outcrop

4

Saline Spot

. .

Sandy Spot

. .

Severely Eroded Spot

Sinkhole

Ø

Sodic Spot

Slide or Slip

8

Spoil Area



Stony Spot



Very Stony Spot

Ø

Wet Spot Other

Δ

Special Line Features

Water Features

_

Streams and Canals

Transportation

ransp

Rails

~

Interstate Highways

US Routes

 \sim

Major Roads

~

Local Roads

Background

1

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15.800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Franklin County, Ohio Survey Area Data: Version 15, Oct 5, 2017

Soil map units are labeled (as space allows) for map scales 1:50.000 or larger.

Date(s) aerial images were photographed: Aug 4, 2014—Aug 27, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

| Map Unit Symbol | Map Unit Name | Acres in AOI | Percent of AOI |
|-----------------------------|---|--------------|----------------|
| BeA | Bennington silt loam, 0 to 2 percent slopes | 11.3 | 48.6% |
| ВеВ | Bennington silt loam, 2 to 6 percent slopes | 8.1 | 34.9% |
| Pm | Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes | 3.9 | 16.6% |
| Totals for Area of Interest | | 23.3 | 100.0% |

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or

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landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An association is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Franklin County, Ohio

BeA—Bennington silt loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2t6m9 Elevation: 800 to 1,000 feet

Mean annual precipitation: 34 to 42 inches Mean annual air temperature: 48 to 54 degrees F

Frost-free period: 145 to 180 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Bennington and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bennington

Setting

Landform: End moraines, ground moraines

Landform position (two-dimensional): Footslope, backslope, summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Concave, linear

Across-slope shape: Linear

Parent material: Wisconsin loamy till derived from sandstone and shale

Typical profile

Ap - 0 to 10 inches: silt loam

Bt - 10 to 29 inches: silty clay loam

BCt - 29 to 42 inches: silty clay loam

C - 42 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Somewhat poorly drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to

moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 6 to 12 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum in profile: 22 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0

mmhos/cm)

Available water storage in profile: Moderate (about 8.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D Hydric soil rating: No

Minor Components

Cardington

Percent of map unit: 7 percent

Landform: End moraines, ground moraines

Landform position (two-dimensional): Shoulder, backslope, summit

Landform position (three-dimensional): Crest, side slope

Down-slope shape: Convex, linear Across-slope shape: Convex

Hydric soil rating: No

Condit

Percent of map unit: 5 percent

Landform: Depressions, drainageways

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear Across-slope shape: Concave

Hydric soil rating: Yes

Pewamo, low carbonate till

Percent of map unit: 3 percent

Landform: Depressions, drainageways

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear Across-slope shape: Concave

Hydric soil rating: Yes

BeB—Bennington silt loam, 2 to 6 percent slopes

Map Unit Setting

National map unit symbol: 2t6mb Elevation: 800 to 1.120 feet

Mean annual precipitation: 34 to 42 inches
Mean annual air temperature: 48 to 54 degrees F

Frost-free period: 145 to 175 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Bennington and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Bennington

Setting

Landform: End moraines, ground moraines

Landform position (two-dimensional): Footslope, backslope, summit

Landform position (three-dimensional): Interfluve

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Down-slope shape: Concave, linear

Across-slope shape: Linear

Parent material: Wisconsin loamy till derived from sandstone and shale

Typical profile

Ap - 0 to 9 inches: silt loam

Bt - 9 to 29 inches: silty clay loam

BCt - 29 to 40 inches: silty clay loam

C - 40 to 79 inches: clay loam

Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Somewhat poorly drained

Runoff class: High

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to

moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 6 to 12 inches

Frequency of flooding: None Frequency of ponding: None

Calcium carbonate, maximum in profile: 22 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0

mmhos/cm)

Available water storage in profile: Moderate (about 8.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C/D Hydric soil rating: No

Minor Components

Cardington

Percent of map unit: 9 percent

Landform: End moraines, ground moraines

Landform position (two-dimensional): Shoulder, backslope, summit

Landform position (three-dimensional): Crest, side slope

Down-slope shape: Convex, linear Across-slope shape: Convex

Hydric soil rating: No

Condit

Percent of map unit: 3 percent

Landform: Depressions, drainageways

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear Across-slope shape: Concave

Hydric soil rating: Yes Pewamo, low carbonate till

Percent of map unit: 3 percent

Landform: Depressions, drainageways

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear

Across-slope shape: Concave

Hydric soil rating: Yes

Pm—Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2t6m4 Elevation: 800 to 1,000 feet

Mean annual precipitation: 34 to 42 inches Mean annual air temperature: 48 to 54 degrees F

Frost-free period: 145 to 180 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Pewamo, low carbonate till, and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Pewamo, Low Carbonate Till

Setting

Landform: Depressions, drainageways

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear Across-slope shape: Concave

Parent material: Till derived from limestone, sandstone, and shale

Typical profile

Ap - 0 to 12 inches: silty clay loam
Btg1 - 12 to 34 inches: silty clay loam
Btg2 - 34 to 47 inches: silty clay loam
BCg - 47 to 57 inches: silty clay loam
Cg - 57 to 79 inches: clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches Natural drainage class: Very poorly drained

Runoff class: Negligible

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20

to 0.60 in/hr)

Depth to water table: About 0 to 12 inches

Frequency of flooding: None Frequency of ponding: Frequent

Calcium carbonate, maximum in profile: 22 percent

Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0

mmhos/cm)

Available water storage in profile: Moderate (about 8.5 inches)

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Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C/D Hydric soil rating: Yes

Minor Components

Condit

Percent of map unit: 9 percent

Landform: Depressions, drainageways

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave, linear Across-slope shape: Concave

Hydric soil rating: Yes

Bennington

Percent of map unit: 6 percent

Landform: End moraines, ground moraines

Landform position (two-dimensional): Footslope, summit

Landform position (three-dimensional): Interfluve

Down-slope shape: Concave, linear

Across-slope shape: Linear

Hydric soil rating: No

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Appendix 4 Data Forms

Background Information

| Dackground information | |
|---|-----------------------|
| Name: Matthew Ray, Mark Fedosick | |
| Date: | |
| 03/29/2018 | |
| Affiliation: | |
| ms consultants, inc | |
| Address: One Cascade Plaza Suite 140, Akron, Ohio, 44308-1116 | |
| Phone Number: | |
| 330-258-9920 e-mail address: | _ |
| mray@msconsultants.com | |
| Name of Wetland: WL-A | |
| Vegetation Communit(ies): | |
| Palustrine Emergent (PEM) HGM Class(es): | |
| Depression (I) Surface Water (A) | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. | |
| | |
| See Report | |
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| | |
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| | |
| | |
| | |
| | |
| | |
| Lat/Long or UTM Coordinate | 40.062522, -82.906426 |
| USGS Quad Name | Northeast Columbus |
| County | Trommodot Goldiniado |
| | Franklin |
| Township | - |
| Section and Subsection | 4, T 2 N, R 17 W |
| Hydrologic Unit Code | 050600011502 |
| Site Visit | 03/29/2018 |
| National Wetland Inventory Map | See Report |
| Ohio Wetland Inventory Map | |
| | See Report |
| Soil Survey | See Report |

See Report

Delineation report/map

| Name of Wetland: WL-A | |
|--|-------------|
| | 0.44.55 |
| | 0.11 ac |
| Wetland Size (acres, hectares): Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Report | 0.11 ac |
| | |
| | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| | |
| Final score : 38 Category | Mod. Cat. 2 |

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries done? not applicable | | | |
|--------|---|---|---|--|
| Step 1 | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | | |
| Step 2 | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | | | |
| 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. | Х | | |
| 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. | Х | | |
| Step 5 | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | | Х | |
| 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. | Х | | |

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| | - | | |
|----|--|---|-------------------------|
| # | Question | Circle one | |
| 1 | Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover | YES Wetland should be evaluated for possible Category 3 status Go to Question 2 | NO Go to Question 2 |
| | has had critical habitat proposed (65 FR 41812 July 6, 2000). | | |
| 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? | Wetland is a Category 3 wetland. | Go to Question 3 |
| 2 | Decumented High Quality Watland In the wetland on record in | Go to Question 3 YES | NO |
| 3 | Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland? | Wetland is a Category 3 wetland Go to Question 4 | Go to Question 4 |
| 4 | Significant Breeding or Concentration Area. Does the wetland | YES | (NO) |
| | contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | Wetland is a Category 3 wetland | Go to Question 5 |
| | | Go to Question 5 | |
| 5 | Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by Phalaris arundinacea, Lythrum salicaria, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES Wetland is a Category 1 wetland Go to Question 6 | 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 (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 | YES | NO |
|-------|---|---|--------------------------|
| | deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | Wetland should be evaluated for possible Category 3 status. | Go to Question 9a |
| | | Category 5 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 | YES | NO |
| - 01- | elevation, or along a tributary to Lake Erie that is accessible to fish? | Go to Question 9b | 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 | YES | NO |
| | partially hydrologically restricted from Lake Erie due to lakeward or | Wetland should be | Go to Question 9c |
| | landward dikes or other hydrological controls? | evaluated for possible Category 3 status | |
| | | Category 5 status | |
| | | Go to Question 10 | |
| 9с | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland | YES | NO |
| | border alterations), or the wetland can be characterized as an | Go to Question 9d | Go to Question 10 |
| | "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. | | _ |
| 9d | Does the wetland have a predominance of native species within its | YES | NO |
| | vegetation communities, although non-native or disturbance tolerant native species can also be present? | Wetland is a Category | Go to Question 9e |
| | Thanks openies can also be present. | 3 wetland | Co to Quodicii oo |
| | | Go to Question 10 | |
| 9e | Does the wetland have a predominance of non-native or disturbance | YES | NO |
| | tolerant native plant species within its vegetation communities? | Wetland should be | Go to Question 10 |
| | | 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 | YES | NO |
| | characterized by the following description: the wetland has a sandy | Wetland is a Category | Go to Question 11 |
| | substrate with interspersed organic matter, a water table often within | 3 wetland. | |
| | several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be | Go to Question 11 | |
| | 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. | | |
| 11 | Relict Wet Prairies. Is the wetland a relict wet prairie community | YES | NO |
| | dominated by some or all of the species in Table 1. Extensive prairies | Watland should be | \smile |
| | were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion | Wetland should be evaluated for possible | Complete Quantitative |
| | Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), | Category 3 status | Rating |
| | and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | Complete Quantitative | |
| | inonigomory, van vven etc./. | Rating | |

Table 1. Characteristic plant species.

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|-----------------------|--------------------------------|---------------------------------|--------------------------|---------------------------|
| Lythrum salicaria | Zygadenus elegans var. glaucus | Calla palustris | Carex cryptolepis | Calamagrostis canadensis |
| Myriophyllum spicatum | Cacalia plantaginea | Carex atlantica var. capillacea | Carex lasiocarpa | Calamogrostis stricta |
| Najas minor | Carex flava | Carex echinata | Carex stricta | Carex atherodes |
| Phalaris arundinacea | Carex sterilis | Carex oligosperma | Cladium mariscoides | Carex buxbaumii |
| Phragmites australis | Carex stricta | Carex trisperma | Calamagrostis stricta | Carex pellita |
| Potamogeton crispus | Deschampsia caespitosa | Chamaedaphne calyculata | Calamagrostis canadensis | Carex sartwellii |
| Ranunculus ficaria | Eleocharis rostellata | Decodon verticillatus | Quercus palustris | Gentiana andrewsii |
| Rhamnus frangula | Eriophorum viridicarinatum | Eriophorum virginicum | · | Helianthus grosseserratus |
| Typha angustifolia | Gentianopsis spp. | Larix laricina | | Liatris spicata |
| Typha xglauca | Lobelia kalmii | Nemopanthus mucronatus | | Lysimachia quadriflora |
| | Parnassia glauca | Schechzeria palustris | | Lythrum alatum |
| | Potentilla fruticosa | Sphagnum spp. | | Pycnanthemum virginianum |
| | Rhamnus alnifolia | Vaccinium macrocarpon | | Silphium terebinthinaceum |
| | Rhynchospora capillacea | Vaccinium corymbosum | | Sorghastrum nutans |
| | Salix candida | Vaccinium oxycoccos | | Spartina pectinata |
| | Salix myricoides | Woodwardia virginica | | Solidago riddellii |
| | Salix serissima | Xyris difformis | | · · |
| | Solidago ohioensis | | | |
| | Tofieldia glutinosa | | | |
| | Triglochin maritimum | | | |
| | Triglochin palustre | | | |

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

| Site: WL-A | Rater(s): Matthew Ray, Mark Fedosick Date: 03/29/2018 |
|---|---|
| 1 1 | Metric 1. Wetland Area (size). |
| max 6 pts. subtotal | 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 <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) × 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts) |
| 6 7 | Metric 2. Upland buffers and surrounding land use. |
| max 14 pts. subtotal | 2a. Calculate average buffer width. Select only one and assign score. Do not double check. WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) X MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) 2b. Intensity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrub land, young second growth forest. (5) X MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) |
| 15 22 | Metric 3. Hydrology. |
| max 30 pts. subtotal | 3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) X Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3d. Duration inundation/saturation. Score one or dbl check and other human use (1) Part of wetland/upland (e.g. forest), complex (1) Part of riparian or upland corridor (1) Semi- to permanently inundated/saturated (4) X Regularly inundated/saturated (3) Seasonally inundated (2) Seasonally saturated in upper 30cm (12in) (1) 3e. Modifications to natural hydrologic regime. Score one or double check and average. |
| <u> </u> | None or none apparent (12) X Recovered (7) |
| 12 34 | Metric 4. Habitat Alteration and Development. |
| max 20 pts. subtotal | 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) |
| | Poor (1) 4c. Habitat alteration. Score one or double check and average. |
| 34 subtotal this plast revised 1 Februa | |

7

| Site: W | L-A | Rater | (s): Matthew | Ray, Mark Fedosick | Date: 03/29/2018 |
|-------------|----------------------|--|--|--|------------------------------|
| SI | 34 ubtotal first pa | age | | | |
| 0 | 34 | Metric 5. Special Wetlan | ds. | | |
| max 10 pts. | subtotal | Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-ru Lake Erie coastal/tributary wetland-ru Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/water Category 1 Wetland. See Question | estricted hydro ings) (10) atened or enda fowl habitat or | angered species (10) | |
| 4 | 38 | Metric 6. Plant communi | ities, int | erspersion, microto | opography. |
| max 20 pts. | subtotal | J 6a. Wetland Vegetation Communities. | Vegetation | Community Cover Scale | |
| | | Score all present using 0 to 3 scale. | 0 | Absent or comprises <0.1ha (0.2 | 471 acres) contiguous area |
| | | Aquatic bed | 1 | Present and either comprises sm | |
| | | 1 Emergent | | vegetation and is of moderate of | quality, or comprises a |
| | | Shrub | | significant part but is of low qua | • |
| | | Forest | 2 | Present and either comprises sig | |
| | | Mudflats | | vegetation and is of moderate of | quality or comprises a small |
| | | Open water | | part and is of high quality | |
| | | Other | 3 | Present and comprises significan | |
| | | 6b. horizontal (plan view) Interspersion. | | vegetation and is of high quality | <u>/</u> |
| | | Select only one. | Name the D | and the second s | |
| | | High (5) | | Description of Vegetation Quality | |
| | | Moderately high(4) X Moderate (3) | low | Low spp diversity and/or predomined disturbance tolerant native specific sp | |
| | | Moderately low (2) | mod | Native spp are dominant compon | |
| | | Low (1) | mod | although nonnative and/or distu | • |
| | | None (0) | | can also be present, and specie | |
| | | 6c. Coverage of invasive plants. Refer | | moderately high, but generally | • |
| | | to Table 1 ORAM long form for list. Add | | threatened or endangered spp | • |
| | | or deduct points for coverage | high | A predominance of native specie | s, with nonnative spp |
| | | Extensive >75% cover (-5) | | and/or disturbance tolerant nati | |
| | | Moderate 25-75% cover (-3) | | absent, and high spp diversity a | - |
| | | x Sparse 5-25% cover (-1) | | the presence of rare, threatene | d, or endangered spp |
| | | Nearly absent <5% cover (0) Absent (1) | Mudflat and | d Open Water Class Quality | |
| | | 6d. Microtopography. | 0 | Absent <0.1ha (0.247 acres) | |
| | | Score all present using 0 to 3 scale. | 1 | Low 0.1 to <1ha (0.247 to 2.47 a | cres) |
| | | Vegetated hummucks/tussucks | 2 | Moderate 1 to <4ha (2.47 to 9.88 | 3 acres) |
| | | Coarse woody debris >15cm (6in) | 3 | High 4ha (9.88 acres) or more | |
| | | Standing dead >25cm (10in) dbh | | | |
| | | Amphibian breeding pools | | graphy Cover Scale | |
| | | | 0 1 | Absent Procent year small amounts or if | more common |
| | | | 1 | Present very small amounts or if of marginal quality | more common |
| | | | 2 | Present in moderate amounts, bu | ut not of highest |
| | | | 2 | quality or in small amounts of h | |
| | | | 3 | Present in moderate or greater a | |
| |] | | J | and of highest quality | |
| 38 | | | - | | |

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|------------------------|--|--|--|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES (NO) | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | |
| Ü | Metric 2. Buffers and surrounding land use | 6 | |
| | Metric 3. Hydrology | 15 | |
| | Metric 4. Habitat | 12 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 4 | |
| | TOTAL SCORE | 38 | Category based on score breakpoints Mod. Cat. 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- |
| 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 | NO | categorized by the ORAM 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 |
| Did you answer "Yes" to Narrative Rating No. 5 | 3 status YES Wetland is categorized as a Category 1 wetland | NO | may also be used to determine the wetland's category. Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold <i>(including</i> 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? | Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands? | YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat, OR recreational functions AND the wetland was not categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, loca 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. |



End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| Dackground information | | |
|---|-----------------------|--|
| Name: Matthew Ray, Mark Fedosick | | |
| Date: | | |
| 03/29/2018 | | |
| Affiliation: | | |
| ms consultants, inc | | |
| Address: One Cascade Plaza Suite 140, Akron, Ohio, 44308-1116 | | |
| Phone Number: 330-258-9920 | | |
| e-mail address: | | |
| mray@msconsultants.com | | |
| Name of Wetland: WL-B | | |
| Vegetation Communit(ies): Palustrine Emergent (PEM) | | |
| HGM Class(es): | | |
| Depression (I) Surface Water (A) | | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. | | |
| See Report | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| | | |
| Lat/Long or UTM Coordinate | 40.061839, -82.906412 | |
| USGS Quad Name | Northeast Columbus | |
| County | Franklin | |
| Township | - | |
| Section and Subsection | 4, T 2 N, R 17 W | |
| Hydrologic Unit Code | 050600011502 | |
| Site Visit | 03/29/2018 | |
| National Wetland Inventory Map | See Report | |
| Ohio Wetland Inventory Map | See Report | |
| Soil Survey | See Report | |

See Report

Delineation report/map

| Name of Wetland: | |
|--|----------------|
| WL-B Wetland Size (acres, hectares): | 0.00 |
| | 0.23 ac |
| Wetland Size (acres, hectares): Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Report | 0.23 ac |
| | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| | |
| Final score : 38 Category | ': Mod. Cat. 2 |

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|--------|---|-------|----------------|
| Step 1 | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| Step 2 | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | Х | |
| 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. | Х | |
| 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. | Х | |
| Step 5 | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | | Х |
| 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. | Х | |

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| | - | | |
|----------|--|---|-------------------------|
| # | Question | Circle one | |
| 1 | Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover | YES Wetland should be evaluated for possible Category 3 status Go to Question 2 | NO Go to Question 2 |
| | has had critical habitat proposed (65 FR 41812 July 6, 2000). | | |
| 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? | Wetland is a Category 3 wetland. | Go to Question 3 |
| 2 | Decumented High Quality Watland In the watland on record in | Go to Question 3 YES | NO |
| 3 | Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland? | Wetland is a Category 3 wetland Go to Question 4 | Go to Question 4 |
| 4 | Significant Breeding or Concentration Area. Does the wetland | YES | (NO) |
| | contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | Wetland is a Category 3 wetland | Go to Question 5 |
| | | Go to Question 5 | |
| 5 | Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by Phalaris arundinacea, Lythrum salicaria, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES Wetland is a Category 1 wetland Go to Question 6 | 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 |
| <u>7</u> | 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 | YES | NO |
|-----|---|---|-------------------|
| | deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | Wetland should be evaluated for possible | Go to Question 9a |
| | , , | Category 3 status. | |
| | | Go to Question 9a | $\widehat{}$ |
| 9a | Lake Erie coastal and tributary wetlands. Is the wetland located at | YES | (NO) |
| | 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? | Go to Question 9b | Go to Question 10 |
| 9b | Does the wetland's hydrology result from measures designed to | YES | (NO) |
| | prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or | Wetland should be | Go to Question 9c |
| | landward dikes or other hydrological controls? | evaluated for possible | Go to Question 90 |
| | , | Category 3 status | |
| | | Go to Question 10 | |
| 9с | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland | YES | NO |
| | border alterations), or the wetland can be characterized as an | Go to Question 9d | Go to Question 10 |
| | "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. | | |
| 9d | Does the wetland have a predominance of native species within its | YES | (NO) |
| | vegetation communities, although non-native or disturbance tolerant | | \sim |
| | native species can also be present? | Wetland is a Category 3 wetland | Go to Question 9e |
| | | 3 welland | |
| | | Go to Question 10 | \sim |
| 9e | Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities? | YES | NO |
| | | Wetland should be | Go to Question 10 |
| | | evaluated for possible Category 3 status | |
| | | Category 5 status | |
| | | Go to Question 10 | \sim |
| 10 | Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be | YES | NO |
| | characterized by the following description: the wetland has a sandy | Wetland is a Category | Go to Question 11 |
| | substrate with interspersed organic matter, a water table often within | 3 wetland. | |
| | several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be | Go to Question 11 | |
| | present). The Ohio Department of Natural Resources Division of | GO TO QUESTION 11 | |
| | Natural Areas and Preserves can provide assistance in confirming this | | |
| -14 | type of wetland and its quality. | VEC | (NO) |
| 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 | YES | NO |
| | were formerly located in the Darby Plains (Madison and Union | Wetland should be | Complete |
| | Counties), Sandusky Plains (Wyandot, Crawford, and Marion | evaluated for possible | Quantitative |
| | Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, | Category 3 status | Rating |
| | Montgomery, Van Wert etc.). | Complete Quantitative | |
| | | Rating | |

Table 1. Characteristic plant species.

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|-----------------------|--------------------------------|---------------------------------|--------------------------|---------------------------|
| Lythrum salicaria | Zygadenus elegans var. glaucus | Calla palustris | Carex cryptolepis | Calamagrostis canadensis |
| Myriophyllum spicatum | Cacalia plantaginea | Carex atlantica var. capillacea | Carex lasiocarpa | Calamogrostis stricta |
| Najas minor | Carex flava | Carex echinata | Carex stricta | Carex atherodes |
| Phalaris arundinacea | Carex sterilis | Carex oligosperma | Cladium mariscoides | Carex buxbaumii |
| Phragmites australis | Carex stricta | Carex trisperma | Calamagrostis stricta | Carex pellita |
| Potamogeton crispus | Deschampsia caespitosa | Chamaedaphne calyculata | Calamagrostis canadensis | Carex sartwellii |
| Ranunculus ficaria | Eleocharis rostellata | Decodon verticillatus | Quercus palustris | Gentiana andrewsii |
| Rhamnus frangula | Eriophorum viridicarinatum | Eriophorum virginicum | - | Helianthus grosseserratus |
| Typha angustifolia | Gentianopsis spp. | Larix laricina | | Liatris spicata |
| Typha xglauca | Lobelia kalmii | Nemopanthus mucronatus | | Lysimachia quadriflora |
| | Parnassia glauca | Schechzeria palustris | | Lythrum alatum |
| | Potentilla fruticosa | Sphagnum spp. | | Pycnanthemum virginianum |
| | Rhamnus alnifolia | Vaccinium macrocarpon | | Silphium terebinthinaceum |
| | Rhynchospora capillacea | Vaccinium corymbosum | | Sorghastrum nutans |
| | Salix candida | Vaccinium oxycoccos | | Spartina pectinata |
| | Salix myricoides | Woodwardia virginica | | Solidago riddellii |
| | Salix serissima | Xyris difformis | | · · |
| | Solidago ohioensis | | | |
| | Tofieldia glutinosa | | | |
| | Triglochin maritimum | | | |
| | Triglochin palustre | | | |

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

| Site: V | VL-B | Rater(s): Matthew Ray, Mark Fedosick | Date: 03/29/2018 |
|-------------|----------|---|--|
| 1 | 1 | Metric 1. Wetland Area (size). | |
| max 6 pts. | subtotal | 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 <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) X | |
| 3 | 4 | Metric 2. Upland buffers and surrounding land use. | |
| max 14 pts. | subtotal | 2a. Calculate average buffer width. Select only one and assign score. Do not double check. WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) X NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) 2b. Intensity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrub land, young second growth forest. (5) X MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow. HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) | ow field. (3) |
| 15 | 19 | Metric 3. Hydrology. | |
| max 30 pts. | subtotal | X Precipitation (1) X Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3c. Maximum water depth. Select only one and assign score. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) Part of wetland/u Part of vetland/u Part of wetland/u Part of wetland/u Part of wetland/u Part of vetland/u Part of wetland/u | ain (1) lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) |
| · | 1 | None or none apparent (12) X Recovered (7) Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Check all disturbances observed J ditch J filling/grading road bed/RR trace weir J stormwater input other | |
| 12 | 31 | Metric 4. Habitat Alteration and Development. | |
| max 20 pts. | subtotal | 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) X Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or double check and average. | |
| s | 31 | None or none apparent (9) X Recovered (6) Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Check all disturbances observed mowing grazing clearcutting selective cutting woody debris removal toxic pollutants Check all disturbances observed herbaceous/aqua sedimentation dredging farming nutrient enrichment | atic bed removal |

7

last revised 1 February 2001 jjm

| Site: W | L-B | Rater | (s): Matthew | Ray, Mark Fedosick | Date: 03/29/2018 |
|-------------|---------------------|--|--|--|------------------------------|
| si | 31 ubtotal first pa | age | | | |
| 0 | 31 | Metric 5. Special Wetlan | ds. | | |
| max 10 pts. | subtotal | Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-ru Lake Erie coastal/tributary wetland-ru Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/water Category 1 Wetland. See Question | estricted hydro ings) (10) atened or enda fowl habitat or | angered species (10) usage (10) | |
| 7 | 38 | Metric 6. Plant communi | ities, int | erspersion, microto | ppography. |
| max 20 pts. | subtotal | J 6a. Wetland Vegetation Communities. | Vegetation | Community Cover Scale | |
| | | Score all present using 0 to 3 scale. | 0 | Absent or comprises <0.1ha (0.24 | 471 acres) contiguous area |
| | | Aquatic bed | 1 | Present and either comprises sm | |
| | | 1 Emergent | | vegetation and is of moderate of | quality, or comprises a |
| | | Shrub | | significant part but is of low qua | • |
| | | Forest | 2 | Present and either comprises sig | |
| | | Mudflats | | vegetation and is of moderate of | quality or comprises a small |
| | | Open water | | part and is of high quality | |
| | | Other | 3 | Present and comprises significan | |
| | | 6b. horizontal (plan view) Interspersion. | | vegetation and is of high quality | / |
| | | Select only one. | Nametica D | acceletion of Variation Ovality | |
| | | High (5) | | escription of Vegetation Quality | nance of nannative or |
| | | X Moderately high(4) Moderate (3) | low | Low spp diversity and/or predomi disturbance tolerant native spec | |
| | | Moderately low (2) | mod | Native spp are dominant compon | |
| | | Low (1) | mod | although nonnative and/or distu | <u> </u> |
| | | None (0) | | can also be present, and specie | |
| | | 6c. Coverage of invasive plants. Refer | | moderately high, but generally | • |
| | | to Table 1 ORAM long form for list. Add | | threatened or endangered spp | • |
| | | or deduct points for coverage | high | A predominance of native species | s, with nonnative spp |
| | | Extensive >75% cover (-5) | | and/or disturbance tolerant nati | ve spp absent or virtually |
| | | Moderate 25-75% cover (-3) | | absent, and high spp diversity a | |
| | | Sparse 5-25% cover (-1) | | the presence of rare, threatene | d, or endangered spp |
| | | Nearly absent <5% cover (0) X Absent (1) | Mudflat and | d Open Water Class Quality | |
| | | 6d. Microtopography. | 0 | Absent <0.1ha (0.247 acres) | |
| | | Score all present using 0 to 3 scale. | 1 | Low 0.1 to <1ha (0.247 to 2.47 ac | cres) |
| | | Vegetated hummucks/tussucks | 2 | Moderate 1 to <4ha (2.47 to 9.88 | 3 acres) |
| | | Coarse woody debris >15cm (6in) | 3 | High 4ha (9.88 acres) or more | |
| | | Standing dead >25cm (10in) dbh | | | |
| | | Amphibian breeding pools | Microtopog | raphy Cover Scale | |
| | | | 0 | Absent | |
| | | | 1 | Present very small amounts or if | more common |
| | | | 2 | of marginal quality Present in moderate amounts, but | at not of highest |
| | | | 2 | quality or in small amounts of h | |
| | | | 3 | Present in moderate or greater a | |
| | 1 | | 3 | and of highest quality | nound |
| 38 | | | | 3 1 | |
| _ | I | | | | |

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|------------------------|--|--|--|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES (NO) | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 1 | |
| Ü | Metric 2. Buffers and surrounding land use | 3 | |
| | Metric 3. Hydrology | 15 | |
| | Metric 4. Habitat | 12 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 7 | |
| | TOTAL SCORE | 38 | Category based on score breakpoints Mod. Cat. 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- |
| 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 | NO | categorized by the ORAM 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 |
| Did you answer "Yes" to Narrative Rating No. 5 | 3 status YES Wetland is categorized as a Category 1 wetland | NO | may also be used to determine the wetland's category. Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold <i>(including</i> 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? | Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands? | YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat, OR recreational functions AND the wetland was not categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, loca 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. |



End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| Buokground information | |
|---|-----------------------|
| Name: Matthew Ray, Mark Fedosick | |
| Date: | |
| 03/29/2018 | |
| Affiliation: | |
| ms consultants, inc | |
| Address: One Cascade Plaza Suite 140, Akron, Ohio, 44308-1116 | |
| Phone Number: 330-258-9920 | |
| e-mail address: | |
| mray@msconsultants.com | |
| Name of Wetland: WL-C | |
| Vegetation Communit(ies): | |
| Palustrine Emergent (PEM) | |
| HGM Class(es): | |
| Depression (I) Surface Water (A) | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. | |
| See Report | |
| ' | |
| | |
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| | |
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| | |
| | |
| | |
| | |
| | |
| | |
| Lat/Long or UTM Coordinate | 40.062155, -82.906866 |
| USGS Quad Name | , |
| | Northeast Columbus |
| County | Franklin |
| Township | - |
| Section and Subsection | 4, T 2 N, R 17 W |
| Hydrologic Unit Code | 050600011502 |
| Site Visit | 03/29/2018 |
| National Wetland Inventory Map | See Report |
| Ohio Wetland Inventory Map | See Report |
| Soil Survey | See Report |
| 1 | roee Kebolt |

See Report

Delineation report/map

| Name of Wetland: | |
|--|-------------|
| WL-C Wetland Size (acres, hectares): | 0.00 |
| | 0.06 ac |
| Wetland Size (acres, hectares): Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Report | 0.06 ac |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| | |
| Final score : 37 Category | Mod. Cat. 2 |

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|--------|---|-------|----------------|
| Step 1 | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| Step 2 | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | Х | |
| 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. | Х | |
| 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. | Х | |
| Step 5 | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | | Х |
| 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. | Х | |

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| | - | | |
|----|--|---|-------------------------|
| # | Question | Circle one | |
| 1 | Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover | YES Wetland should be evaluated for possible Category 3 status Go to Question 2 | NO Go to Question 2 |
| | has had critical habitat proposed (65 FR 41812 July 6, 2000). | | |
| 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? | Wetland is a Category 3 wetland. | Go to Question 3 |
| 2 | Decumented High Quality Watland In the watland on record in | Go to Question 3 YES | NO |
| 3 | Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland? | Wetland is a Category 3 wetland Go to Question 4 | Go to Question 4 |
| 4 | Significant Breeding or Concentration Area. Does the wetland | YES | (NO) |
| | contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | Wetland is a Category 3 wetland | Go to Question 5 |
| | | Go to Question 5 | |
| 5 | Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by Phalaris arundinacea, Lythrum salicaria, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES Wetland is a Category 1 wetland Go to Question 6 | 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 (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 | YES | NO |
|-------|---|---|--------------------------|
| | deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | Wetland should be evaluated for possible Category 3 status. | Go to Question 9a |
| | | Category 5 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 | YES | NO |
| - 01- | elevation, or along a tributary to Lake Erie that is accessible to fish? | Go to Question 9b | 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 | YES | NO |
| | partially hydrologically restricted from Lake Erie due to lakeward or | Wetland should be | Go to Question 9c |
| | landward dikes or other hydrological controls? | evaluated for possible Category 3 status | |
| | | Category 5 status | |
| | | Go to Question 10 | |
| 9с | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland | YES | NO |
| | border alterations), or the wetland can be characterized as an | Go to Question 9d | Go to Question 10 |
| | "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. | | _ |
| 9d | Does the wetland have a predominance of native species within its | YES | NO |
| | vegetation communities, although non-native or disturbance tolerant native species can also be present? | Wetland is a Category | Go to Question 9e |
| | Thanks openies can also be present. | 3 wetland | Co to Quodicii oo |
| | | Go to Question 10 | |
| 9e | Does the wetland have a predominance of non-native or disturbance | YES | NO |
| | tolerant native plant species within its vegetation communities? | Wetland should be | Go to Question 10 |
| | | 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 | YES | NO |
| | characterized by the following description: the wetland has a sandy | Wetland is a Category | Go to Question 11 |
| | substrate with interspersed organic matter, a water table often within | 3 wetland. | |
| | several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be | Go to Question 11 | |
| | 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. | | |
| 11 | Relict Wet Prairies. Is the wetland a relict wet prairie community | YES | NO |
| | dominated by some or all of the species in Table 1. Extensive prairies | Watland should be | \smile |
| | were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion | Wetland should be evaluated for possible | Complete Quantitative |
| | Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), | Category 3 status | Rating |
| | and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | Complete Quantitative | |
| | inonigomory, van vven etc./. | Rating | |

Table 1. Characteristic plant species.

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|-----------------------|--------------------------------|---------------------------------|--------------------------|---------------------------|
| Lythrum salicaria | Zygadenus elegans var. glaucus | Calla palustris | Carex cryptolepis | Calamagrostis canadensis |
| Myriophyllum spicatum | Cacalia plantaginea | Carex atlantica var. capillacea | Carex lasiocarpa | Calamogrostis stricta |
| Najas minor | Carex flava | Carex echinata | Carex stricta | Carex atherodes |
| Phalaris arundinacea | Carex sterilis | Carex oligosperma | Cladium mariscoides | Carex buxbaumii |
| Phragmites australis | Carex stricta | Carex trisperma | Calamagrostis stricta | Carex pellita |
| Potamogeton crispus | Deschampsia caespitosa | Chamaedaphne calyculata | Calamagrostis canadensis | Carex sartwellii |
| Ranunculus ficaria | Eleocharis rostellata | Decodon verticillatus | Quercus palustris | Gentiana andrewsii |
| Rhamnus frangula | Eriophorum viridicarinatum | Eriophorum virginicum | · | Helianthus grosseserratus |
| Typha angustifolia | Gentianopsis spp. | Larix laricina | | Liatris spicata |
| Typha xglauca | Lobelia kalmii | Nemopanthus mucronatus | | Lysimachia quadriflora |
| | Parnassia glauca | Schechzeria palustris | | Lythrum alatum |
| | Potentilla fruticosa | Sphagnum spp. | | Pycnanthemum virginianum |
| | Rhamnus alnifolia | Vaccinium macrocarpon | | Silphium terebinthinaceum |
| | Rhynchospora capillacea | Vaccinium corymbosum | | Sorghastrum nutans |
| | Salix candida | Vaccinium oxycoccos | | Spartina pectinata |
| | Salix myricoides | Woodwardia virginica | | Solidago riddellii |
| | Salix serissima | Xyris difformis | | · · |
| | Solidago ohioensis | | | |
| | Tofieldia glutinosa | | | |
| | Triglochin maritimum | | | |
| | Triglochin palustre | | | |

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

| Site: W | /L-C | Rater(s): Matthew Ray, Mark Fedosick Date: 03/29/2018 |
|--------------------|--------------------|--|
| 0 | 0 | Metric 1. Wetland Area (size). |
| max 6 pts. | subtotal | 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 <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) × <0.1 acres (0.04ha) (0 pts) |
| 6 | 6 | Metric 2. Upland buffers and surrounding land use. |
| max 14 pts. | subtotal | 2a. Calculate average buffer width. Select only one and assign score. Do not double check. WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) X MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) 2b. Intensity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrub land, young second growth forest. (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) |
| 15 | 21 | Metric 3. Hydrology. |
| max 30 pts. | subtotal | 3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) Maximum water depth. Select only one and assign score. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) Modifications to natural hydrologic regime. Score one or double check and average. 3b. Connectivity. Score all that apply. 100 year floodplain (1) Part of wetland/upland (e.g. forest), complex (1) Part of riparian or upland corridor (1) 3d. Duration inundation/saturation. Score one or dbl check Semi- to permanently inundated/saturated (3) X Regularly inundated/saturated (3) Seasonally saturated in upper 30cm (12in) (1) Seasonally saturated in upper 30cm (12in) (1) |
| | 1 | None or none apparent (12) X Recovered (7) Recovering (3) Recent or no recovery (1) Check all disturbances observed V ditch point source (nonstormwater) filling/grading road bed/RR track dredging other veir other ot |
| 12 | 33 | Metric 4. Habitat Alteration and Development. |
| max 20 pts. | subtotal | 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) X Fair (3) Poor to fair (2) |
| | | Poor (1) 4c. Habitat alteration. Score one or double check and average. |
| sı last revised | 33 ubtotal this pa | |

7

| Site: W | /L-C | Rater | (s): Matthew | Ray, Mark Fedosick | Date: 03/29/2018 |
|-------------|----------|--|---|--|---|
| s | 33 | age | | | |
| 0 | 33 | Metric 5. Special Wetlan | ds. | | |
| max 10 pts. | subtotal | Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-r Lake Plain Sand Prairies (Oak Oper Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/water Category 1 Wetland. See Question | estricted hydro nings) (10) atened or enda fowl habitat or | angered species (10) usage (10) | |
| 4 | 37 | Metric 6. Plant commun | ities, int | erspersion, microt | opography. |
| max 20 pts. | subtotal | 6a. Wetland Vegetation Communities. | Vegetation | Community Cover Scale | |
| | | Score all present using 0 to 3 scale. | 0 | Absent or comprises <0.1ha (0.2 | |
| | | Aquatic bed | 1 | Present and either comprises sr | |
| | | 1 Emergent | | vegetation and is of moderate | |
| | | Shrub | | significant part but is of low qu | - |
| | | Forest | 2 | Present and either comprises significant either comprises significant either comprises significant either comprises significant eith | = |
| | | Mudflats | | vegetation and is of moderate | quality or comprises a small |
| | | Open water Other | 3 | part and is of high quality Present and comprises significa | nt part or more of wetland's |
| | | 6b. horizontal (plan view) Interspersion. | 3 | vegetation and is of high quali | |
| | | Select only one. | | vegetation and is of high quali | iy |
| | | High (5) | Narrative D | escription of Vegetation Quality | |
| | | Moderately high(4) | low | Low spp diversity and/or predom | ninance of nonnative or |
| | | Moderate (3) | | disturbance tolerant native spe | |
| | | X Moderately low (2) | mod | Native spp are dominant compo | |
| | | Low (1) | | although nonnative and/or dist | turbance tolerant native spp |
| | | None (0) | | can also be present, and spec | ies diversity moderate to |
| | | 6c. Coverage of invasive plants. Refer | | moderately high, but generally | • |
| | | to Table 1 ORAM long form for list. Add | | threatened or endangered spp | |
| | | or deduct points for coverage | high | A predominance of native specie | |
| | | Extensive >75% cover (-5) | | and/or disturbance tolerant na | |
| | | Moderate 25-75% cover (-3) | | absent, and high spp diversity the presence of rare, threaten | - · · · · · · · · · · · · · · · · · · · |
| | | Sparse 5-25% cover (-1) × Nearly absent <5% cover (0) | | the presence of rare, threaten | ed, or endangered spp |
| | | Absent (1) | Mudflat and | d Open Water Class Quality | |
| | | 6d. Microtopography. | 0 | Absent <0.1ha (0.247 acres) | |
| | | Score all present using 0 to 3 scale. | 1 | Low 0.1 to <1ha (0.247 to 2.47 a | acres) |
| | | Vegetated hummucks/tussucks | 2 | Moderate 1 to <4ha (2.47 to 9.8 | |
| | | Coarse woody debris >15cm (6in) | 3 | High 4ha (9.88 acres) or more | |
| | | Standing dead >25cm (10in) dbh | | • | |
| | | Amphibian breeding pools | Microtopog | graphy Cover Scale | |
| | | | 0 | Absent | |
| | | | 1 | Present very small amounts or it | f more common |
| | | | | of marginal quality | |
| | | | 2 | Present in moderate amounts, b | <u> </u> |
| | | | | quality or in small amounts of | |
| | 7 | | 3 | Present in moderate or greater a | amounts |
| 37 | | | | and of highest quality | |
| <i>31</i> | 1 | | | | |

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|------------------------|--|--|--|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES (NO) | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | |
| Ü | Metric 2. Buffers and surrounding land use | 6 | |
| | Metric 3. Hydrology | 15 | |
| | Metric 4. Habitat | 12 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 4 | |
| | TOTAL SCORE | 37 | Category based on score breakpoints Mod. Cat. 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- |
| 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 | NO | categorized by the ORAM 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 |
| Did you answer "Yes" to Narrative Rating No. 5 | 3 status YES Wetland is categorized as a Category 1 wetland | NO | may also be used to determine the wetland's category. Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold <i>(including</i> 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? | Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands? | YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat, OR recreational functions AND the wetland was not categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, loca 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. |



End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| Buokground information | |
|---|----------------------|
| Name: Matthew Ray, Mark Fedosick | |
| Date: | |
| 03/29/2018 | |
| Affiliation: | |
| ms consultants, inc | |
| Address: One Cascade Plaza Suite 140, Akron, Ohio, 44308-1116 | |
| Phone Number: 330-258-9920 | |
| e-mail address: | |
| mray@msconsultants.com | |
| Name of Wetland: WL-D | |
| Vegetation Communit(ies): | |
| Palustrine Emergent (PEM) | |
| HGM Class(es): | |
| Depression (I) Surface Water (A) Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. | |
| • | |
| See Report | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| Lat/Long or UTM Coordinate | 40.062532, -82.90717 |
| USGS Quad Name | Northeast Columbus |
| County | Franklin |
| Township | - |
| Section and Subsection | 4, T 2 N, R 17 W |
| Hydrologic Unit Code | 050600011502 |
| Site Visit | 03/28/2018 |
| National Wetland Inventory Map | See Report |
| Ohio Wetland Inventory Map | See Report |
| Soil Survey | |
| | See Report |

See Report

Delineation report/map

| Name of Wetland: WL-D | |
|--|-------------|
| | 0.01.00 |
| | 0.01 ac |
| Wetland Size (acres, hectares): Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Report | 0.01 ac |
| Comments Negretive Discussion Justification of Cotogory Changes | |
| Comments, Narrative Discussion, Justification of Category Changes: | |
| | |
| Final score : 35 Category | Mod. Cat. 2 |

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|--------|---|-------|----------------|
| Step 1 | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| Step 2 | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | Х | |
| 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. | Х | |
| 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. | Х | |
| Step 5 | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | | Х |
| 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. | Х | |

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| | - | | |
|----|--|---|-------------------------|
| # | Question | Circle one | |
| 1 | Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover | YES Wetland should be evaluated for possible Category 3 status Go to Question 2 | NO Go to Question 2 |
| | has had critical habitat proposed (65 FR 41812 July 6, 2000). | | |
| 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? | Wetland is a Category 3 wetland. | Go to Question 3 |
| 2 | Decumented High Quality Watland In the wetland on record in | Go to Question 3 YES | NO |
| 3 | Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland? | Wetland is a Category 3 wetland Go to Question 4 | Go to Question 4 |
| 4 | Significant Breeding or Concentration Area. Does the wetland | YES | (NO) |
| | contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | Wetland is a Category 3 wetland | Go to Question 5 |
| | | Go to Question 5 | |
| 5 | Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by Phalaris arundinacea, Lythrum salicaria, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES Wetland is a Category 1 wetland Go to Question 6 | 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 (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 | YES | NO |
|-------|---|---|--------------------------|
| | deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | Wetland should be evaluated for possible Category 3 status. | Go to Question 9a |
| | | Category 5 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 | YES | NO |
| - 01- | elevation, or along a tributary to Lake Erie that is accessible to fish? | Go to Question 9b | 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 | YES | NO |
| | partially hydrologically restricted from Lake Erie due to lakeward or | Wetland should be | Go to Question 9c |
| | landward dikes or other hydrological controls? | evaluated for possible Category 3 status | |
| | | Category 5 status | |
| | | Go to Question 10 | |
| 9с | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland | YES | NO |
| | border alterations), or the wetland can be characterized as an | Go to Question 9d | Go to Question 10 |
| | "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. | | _ |
| 9d | Does the wetland have a predominance of native species within its | YES | NO |
| | vegetation communities, although non-native or disturbance tolerant native species can also be present? | Wetland is a Category | Go to Question 9e |
| | Thanks openies can also be present. | 3 wetland | Co to Quodicii oo |
| | | Go to Question 10 | |
| 9e | Does the wetland have a predominance of non-native or disturbance | YES | NO |
| | tolerant native plant species within its vegetation communities? | Wetland should be | Go to Question 10 |
| | | 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 | YES | NO |
| | characterized by the following description: the wetland has a sandy | Wetland is a Category | Go to Question 11 |
| | substrate with interspersed organic matter, a water table often within | 3 wetland. | |
| | several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be | Go to Question 11 | |
| | 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. | | |
| 11 | Relict Wet Prairies. Is the wetland a relict wet prairie community | YES | NO |
| | dominated by some or all of the species in Table 1. Extensive prairies | Watland should be | \smile |
| | were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion | Wetland should be evaluated for possible | Complete Quantitative |
| | Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), | Category 3 status | Rating |
| | and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | Complete Quantitative | |
| | inonigomory, van vven etc./. | Rating | |

Table 1. Characteristic plant species.

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|-----------------------|--------------------------------|---------------------------------|--------------------------|---------------------------|
| Lythrum salicaria | Zygadenus elegans var. glaucus | Calla palustris | Carex cryptolepis | Calamagrostis canadensis |
| Myriophyllum spicatum | Cacalia plantaginea | Carex atlantica var. capillacea | Carex lasiocarpa | Calamogrostis stricta |
| Najas minor | Carex flava | Carex echinata | Carex stricta | Carex atherodes |
| Phalaris arundinacea | Carex sterilis | Carex oligosperma | Cladium mariscoides | Carex buxbaumii |
| Phragmites australis | Carex stricta | Carex trisperma | Calamagrostis stricta | Carex pellita |
| Potamogeton crispus | Deschampsia caespitosa | Chamaedaphne calyculata | Calamagrostis canadensis | Carex sartwellii |
| Ranunculus ficaria | Eleocharis rostellata | Decodon verticillatus | Quercus palustris | Gentiana andrewsii |
| Rhamnus frangula | Eriophorum viridicarinatum | Eriophorum virginicum | · | Helianthus grosseserratus |
| Typha angustifolia | Gentianopsis spp. | Larix laricina | | Liatris spicata |
| Typha xglauca | Lobelia kalmii | Nemopanthus mucronatus | | Lysimachia quadriflora |
| | Parnassia glauca | Schechzeria palustris | | Lythrum alatum |
| | Potentilla fruticosa | Sphagnum spp. | | Pycnanthemum virginianum |
| | Rhamnus alnifolia | Vaccinium macrocarpon | | Silphium terebinthinaceum |
| | Rhynchospora capillacea | Vaccinium corymbosum | | Sorghastrum nutans |
| | Salix candida | Vaccinium oxycoccos | | Spartina pectinata |
| | Salix myricoides | Woodwardia virginica | | Solidago riddellii |
| | Salix serissima | Xyris difformis | | · · |
| | Solidago ohioensis | | | |
| | Tofieldia glutinosa | | | |
| | Triglochin maritimum | | | |
| | Triglochin palustre | | | |

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

| Site: WL-D | | Rater(s): Matthew Ray, Mark | Fedosick | Date: 03/29/2018 |
|--------------------|--|---|---|--|
| 0 0 | Metric 1. Wetland A | rea (size). | | |
| max 6 pts. subtot | | e. 0.2ha) (5 pts) na) (4 pts) I (3 pts) 2ha) (2pts) | | |
| 6 6 | Metric 2. Upland bu | ffers and surround | ing land use. | |
| max 14 pts. subtol | WIDE. Buffers average 50r X MEDIUM. Buffers average NARROW. Buffers average VERY NARROW. Buffers average VERY LOW. 2nd growth or LOW. Old field (>10 years) X MODERATELY HIGH. Res | m (164ft) or more around wetland p 25m to <50m (82 to <164ft) around a 10m to <25m (32ft to <82ft) around average <10m (<32ft) around wetlar | erimeter (7) wetland perimeter (4) nd wetland perimeter (1) nd perimeter (0) werage. dlife area, etc. (7) forest. (5) ervation tillage, new fallo | ow field. (3) |
| 15 21 | Metric 3. Hydrology | • | | |
| max 30 pts. subtot | 3a. Sources of Water. Score all that High pH groundwater (5) Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surfact Perennial surface water (lale 3c. Maximum water depth. Select on >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) X <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologi | ce water (3) se or stream) (5) ly one and assign score. (2) | Part of wetland/u Part of riparian or Duration inundation/sate Semi- to permane X Regularly inundation Seasonally inundation | in (1) lake and other human use (1) cland (e.g. forest), complex (1) cupland corridor (1) curation. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) |
| | None or none apparent (12) X Recovered (7) Recovering (3) Recent or no recovery (1) | ditch tile dike weir stormwater input | point source (non filling/grading road bed/RR trac dredging other_ | • |
| 11 32 | Metric 4. Habitat Al | | ppment. | |
| max 20 pts. subtol | None or none apparent (4) X Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only Excellent (7) Very good (6) Good (5) Moderately good (4) Fair (3) X Poor to fair (2) Poor (1) | one and assign score. | | |
| | 4c. Habitat alteration. Score one or one or one or one or one or one or one apparent (9) | double check and average. Check all disturbances observed | | |
| 32 subtotal thi | Recovered (6) Recovering (3) Recent or no recovery (1) | mowing grazing clearcutting selective cutting woody debris removal toxic pollutants | shrub/sapling ren herbaceous/aqua sedimentation dredging farming nutrient enrichme | tic bed removal |

| Metric 5. Special Wetlands. Check all that apply and score as indicated. By Garding and Score as indicated and interest index dispersion and is of more as indicated and interest and score as indicated and interest and score as indicated prototogy (10). Lake Eric coastal/fibrulary wetland-unrestricted hydrology (10). Relicul Wet Prairies (10 | Site: W | 'L-D | Rater | (s): Matthew | Ray, Mark Fedosick | Date: 03/29/2018 |
|--|-------------|----------|---|--|---|------------------------------|
| Check all that apply and score as indicated. Sog (10) | s | | Ť | l- | | |
| Bog (10) Bog (10) Gold growth forest (10) Mature forested wetland (5) Lake Erie coastat/mbutary wetland-unrestricted hydrology (10) Lake Erie coastat/mbutary wetland-restricted hydrology (5) Lake Plan Sand Praines (Oak Openings) (10) Relict Wet Praines (10) Known occurrence state/federal threatened or endangered species (10) Significant migratory sonopin/dwater fowl habitat or usage (10) Category 1 Wetland. See Question 1 Cualitative Rating (-10) Read Wetland Vegetation Communities, interspersion, microtopography. Metric 6. Plant communities, interspersion, microtopography. Socoe all present using 0 to 3 scale. Aquatic bed Aguatic bed Emergent Shrub Forest Mulflats Open water Other Other Other Other Gold Moderately high(4) Moderatel (3) Moderatel (3) Moderatel (3) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 GRAM long form for list. Add or deduct points for coverage Estables of ARM long form for list. Add or deduct points for coverage Estensive > 75% cover (-3) Sparse 525% cover (-1) Nane (0) Absent (1) Amphibian breeding pools Moderate Class Quality Amphibian breeding pools Moderately (3) Amphibian breeding pools Moderately (4) Amphibian breeding pools Moderately nigh, but generally w/o presence of rare threatened or endangered spp Mulfilat and Open Water Class Quality Appetitude of present using 0 to 3 scale. Vegetation and is of high quality In the present using of the vegetation, although nonnative and of seturbance tolerant native species Mulfilat and Open Water Class Quality Appetitude of present of rare, threatened, or endangered spp Mulfilat and Open Water Class Quality Amphibian breeding pools Mulfilat and Open Water Class Quality Amphibian breeding pools Mulfilat and Open Water Class Quality Present in moderate or greater amounts of infrared common of marginal quality Present and entire comprises significant part, or more, of wetland's vegetation and is of high quality Alternative part of the sequence o | 0 | 32 | Wetric 5. Special Wetlar | nas. | | |
| Score all present using 0 to 3 scale. Aquatic bed Apatic bed Ap | max 10 pts. | subtotal | Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland- Lake Erie coastal/tributary wetland- Lake Plain Sand Prairies (Oak Ope Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/wate | restricted hydronings) (10) eatened or ender fowl habitat or | angered species (10) | |
| Score all present using 0 to 3 scale. Aquatic bed I Emergent Shrub Forest Other Other Other High (5) Moderately high(4) Moderately low (2) X Low (1) None (0) Extensive >75% cover (-5) Sparse 5-25% cover (-1) Nearly absent 45% cover (0) X Absent (1) Regarded hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Apsent and so fine of word in the resent and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality 2 Present and 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 1 Now (10) None (10) Woderately high (4) Woderately high (4) Woderately high (5) Woderately high (6) Absent (7) Woderately high (7) Woderately high (8) Woderately high (9) Absent (10) Woderately high (9) Woderately | 3 | 35 | Metric 6. Plant commun | ities, int | erspersion, microto | opography. |
| Score all present using 0 to 3 scale. Aquatic bed I Emergent Shrub Forest Other Other Other High (5) Moderately high(4) Moderately low (2) X Low (1) None (0) Extensive >75% cover (-5) Sparse 5-25% cover (-1) Nearly absent 45% cover (0) X Absent (1) Regarded hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Apsent and so fine of word in the resent and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a significant part but is of low quality 2 Present and 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 1 Now (10) None (10) Woderately high (4) Woderately high (4) Woderately high (5) Woderately high (6) Absent (7) Woderately high (7) Woderately high (8) Woderately high (9) Absent (10) Woderately high (9) Woderately | max 20 pts. | subtotal | Metland Vegetation Communities | Vegetation | Community Cover Scale | |
| Aquatic bed Emergent | | | | | | 471 acres) contiguous area |
| Shrub Forest Mudflats Open water Other Other Other High (5) Moderately high(4) Moderately low (2) X Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Nearly absent <5% cover (-6) Nearly absent <5% cover (-6) Nearly absent <5% cover (-1) Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Shrub Shrub Significant part but is of low quality 2 Present and either comprises significant part, or more, of wetland's vegetation and is of high quality 7 Present and comprises significant part, or more, of wetland's vegetation and is of high quality 8 Narrative Description of Vegetation Quality 1 low Sp diversity and/or predominance of nonnative or disturbance tolerant native species 8 mod Native spa are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp 1 high A predominance of native species, with nonnative spp and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp 1 Apredominance of native species, with nonnative spp and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp 1 Apredominance of native species, with nonnative spp and/or disturbance tolerant native species and of nonnative and/or disturbance tolerant native species and or without and of the vegetation and is of high quality 2 Present in moderate or or endangered spp 1 Low 0.1 to <1ha (0.247 to 9.48 acres) 2 Moderate 1 to <4ha (2.47 to 9.88 acres) 3 High 4ha (9.88 acres) or more 4 Mudflata and Open Water Class Quality 2 Moderate 2 to | | | | | | |
| Forest Mudflats Open water Other Oth | | | 1 Emergent | | vegetation and is of moderate | quality, or comprises a |
| Mudflats | | | Shrub | | significant part but is of low qua | ality |
| Open water Other Other Other Sb. horizontal (plan view) Interspersion. Select only one. High (5) Moderately high(4) Moderately low (2) X Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-1) Nearly absent <5% cover (-1) Nearly absent <5% cover (0) X Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools part and is of high quality Present and comprises significant part, or more, of wetland's vegetation and is of high quality Present and comprises significant part, or more, of wetland's vegetation and is of high quality Present and comprises significant part, or more, of wetland's vegetation and is of high quality Present and comprises significant part, or more, of wetland's vegetation and is of high quality Present and comprises significant part, or more, of wetland's vegetation, and is of high quality Present and comprises significant part, or more, of wetland's vegetation, and is of high quality Present and comprises significant part, or more, of wetland's vegetation, and is of high quality Present and comprises significant part, or more, of wetland's vegetation, and is of high quality Present in moderate park paility Present in moderate amounts of highest quality Present in moderate or greater amounts and of highest quality | | | Forest | 2 | Present and either comprises sig | nificant part of wetland's |
| Select only one. High (5) Moderately high(4) Moderately low (2) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-1) Nearly absent <5% cover (-1) Nearly absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Absent 1 Present and comprises significant part, or more, of wetland's vegetation and is of high quality Narrative Description of Vegetation Quality Low spp diversity and/or predominance of nonnative or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp high A predominance of native species, with nonnative spp and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp high A predominance of native species, with nonnative spp and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp high A predominance of native species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp high A predominance of native species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp high A predominance of native species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp high A predominance of native species with nonnative spp and/or disturbance tolerant native spp and/or disturbance tolerant native spp and/or and/or disturbance tolerant native spp and/or disturbance | | | Mudflats | | vegetation and is of moderate | quality or comprises a small |
| Select only one. | | | Open water | - | , , , , | |
| Select only one. High (5) Moderately high(4) Moderatel (3) Moderately low (2) X Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-6) Moderate 25-75% cover (-1) Nearly absent (-5) Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Marrative Description of Vegetation Quality low Low spp diversity and/or predominance of nonnative or disturbance tolerant native species with nonnative spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp A predominance of nantive species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp A predominance of nantive species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp A predominance of nantive species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp A predominance of nantive species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp A predominance of native species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp A predominance of native species diversity moderate to moderately pide, but of instruction, although nonnative and/or disturbance tolerant native spp and/or disturbance tolerant native spp and/or disturbance tolerant native species with nonnative and/or disturbance tolerant native spp and/or disturbance tolerant native species with nonnative and/or | | | | 3 | - | |
| High (5) Moderately high(4) Moderately high(4) Moderately low (2) X Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-1) Nearly absent <5% cover (0) Absent (1) Standing dead >25cm (10in) dbh Amphibian breeding pools Marrative Description of Vegetation Quality low | | | | | vegetation and is of high quality | У |
| Moderately high(4) Moderate (3) Moderately low (2) X Low (1) None (0) None (0) | | | | | | |
| Moderate (3) Moderately low (2) X Low (1) None (0) Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-6) Moderate 25-75% cover (-1) Nearly absent <5% cover (-1) Nearly absent <5% cover (0) X Absent (1) Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale O Absent Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality Present in moderate amounts and fighest quality Present in moderate amounts and of highest quality Present in moderate amounts and of highest quality Present in moderate or greater amounts and of highest quality Present in moderate amounts and of highest quality Present in moderate or greater amounts and of highest quality Present in moderate or greater amounts and of highest quality Present in moderate or greater amounts and of highest quality Present in moderate or greater amounts and of highest quality Present in moderate or greater amounts and of highest quality Present in moderate or greater amounts and of highest quality Present in moderate or greater amounts and of highest quality Present in moderate or greater amounts and of highest quality Present in moderate or greater amounts Present in moderate or grea | | | · · · · | | | |
| Moderately low (2) X Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-1) Nearly absent <5% cover (0) X Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Moderate 2b or deduct points for coverage Extensive >75% cover (-1) Nearly absent <5% cover (0) X Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale Microtopography Cover Scale D Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality 3 Present in moderate or greater amounts and though nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderate to moderate by presence of rare threatened or endangered spp high A predominance of native species, with nonnative spp and/or disturbance tolerant native spp and/ | | | | IOW | | |
| X Low (1) None (0) Although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp | | | ` ' | mod | | |
| None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-5) Moderate 25-75% cover (-1) Nearly absent <5% cover (0) X Absent (1) Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale | | | | mod | | |
| 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) X Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale 0 Absent 1 Present 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 amounts and of highest quality Present in moderate or greater amounts and of highest quality | | | | | _ | |
| to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) X Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale Microtopography Cover Scale Microtopography Cover Scale Microtopography Cover Scale 0 Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality 3 Present in moderate or greater amounts and of highest quality | | | . , | | · · | • |
| or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) X Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale 0 Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality 3 Present in moderate or greater amounts and of highest quality 1 Present in moderate or greater amounts and of highest quality 2 Present in moderate quality 3 Present in moderate or greater amounts and of highest quality | | | | | | |
| Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) X Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale Microtopography Cover Scale Microtopography Cover Scale Description of marginal quality Present in moderate amounts, but not of highest quality 3 Present in moderate or greater amounts and of highest quality absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp Mudflat and Open Water Class Quality 0 Absent <0.1ha (0.247 acres) 2 Moderate 1 to <4ha (2.47 to 9.88 acres) 3 High 4ha (9.88 acres) or more Microtopography Cover Scale 0 Absent 1 Present 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 | | | or deduct points for coverage | high | A predominance of native specie | s, with nonnative spp |
| Sparse 5-25% cover (-1) Nearly absent <5% cover (0) X Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale Microtopography Cover Scale Present 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 3 Present in moderate or greater amounts and of highest quality | | | Extensive >75% cover (-5) | | and/or disturbance tolerant nat | ive spp absent or virtually |
| Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale Microtopography Cover Scale Microtopography Cover Scale Microtopography Cover Scale Description of marginal quality Present 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 | | | ` ' | | | |
| Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale Microtopography Cover Scale Microtopography Cover Scale Description of marginal quality Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality Present in moderate or greater amounts and of highest quality Present in moderate or greater amounts and of highest quality | | | · · · · · · · · · · · · · · · · | | the presence of rare, threatene | d, or endangered spp |
| 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale 0 Absent 1 Present 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 | | | | Mudflat and | d Open Water Class Quality | |
| Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale | | | ` ' | | <u>`</u> | |
| Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale 0 Absent 1 Present 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 | | | | 1 | Low 0.1 to <1ha (0.247 to 2.47 a | cres) |
| Standing dead >25cm (10in) dbh Amphibian breeding pools Microtopography Cover Scale O Absent 1 Present 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 | | | Vegetated hummucks/tussucks | 2 | Moderate 1 to <4ha (2.47 to 9.8) | 3 acres) |
| Amphibian breeding pools Microtopography Cover Scale | | | Coarse woody debris >15cm (6in) | 3 | High 4ha (9.88 acres) or more | |
| 0 Absent 1 Present 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 | | | | | | |
| 1 Present 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 | | | Amphibian breeding pools | | | |
| 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 | | | | | | |
| 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 | | | | 1 | 1 | more common |
| quality or in small amounts of highest quality 3 Present in moderate or greater amounts and of highest quality | | | | 2 | | It not of highest |
| 3 Present in moderate or greater amounts and of highest quality | | | | 2 | | _ |
| and of highest quality | | | | 3 | | |
| | | 1 | | 3 | _ | mounto |
| | 35 | | | | 1 2000 20 00000000000000000000000000000 | |

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|------------------------|--|--|--|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES (NO) | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | |
| Ü | Metric 2. Buffers and surrounding land use | 6 | |
| | Metric 3. Hydrology | 15 | |
| | Metric 4. Habitat | 11 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 3 | |
| | TOTAL SCORE | 35 | Category based on score breakpoints Mod. Cat. 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- |
| 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 | NO | categorized by the ORAM 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 |
| Did you answer "Yes" to Narrative Rating No. 5 | 3 status YES Wetland is categorized as a Category 1 wetland | NO | may also be used to determine the wetland's category. Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold <i>(including</i> 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? | Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands? | YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat, OR recreational functions AND the wetland was not categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, loca 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. |



End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| Background information | |
|---|-----------------------|
| Name: Matthew Ray, Mark Fedosick | |
| Date: | |
| 03/29/2018 | |
| Affiliation: | |
| ms consultants, inc Address: | |
| One Cascade Plaza Suite 140, Akron, Ohio, 44308-1116 | |
| Phone Number: 330-258-9920 | |
| e-mail address: | |
| mray@msconsultants.com | |
| Name of Wetland: WL-E | |
| Vegetation Communit(ies): Palustrine Emergent (PEM) | |
| HGM Class(es): | |
| Depression (I) Surface Water (A) | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. | |
| See Report | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| Lat/Long or UTM Coordinate | |
| USGS Quad Name | 40.065116, -82.907213 |
| | Northeast Columbus |
| County | Franklin |
| Township | - |
| Section and Subsection | 4, T 2 N, R 17 W |
| Hydrologic Unit Code | 050600011502 |
| Site Visit | 03/29/2018 |
| National Wetland Inventory Map | See Report |
| Ohio Wetland Inventory Map | See Report |
| Soil Survey | See Report |

See Report

Delineation report/map

| Name of Wetland: WL-E | | | |
|--|----|---------|--------|
| | | 0.00 | |
| | | 0.02 ac | |
| Wetland Size (acres, hectares): Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Report | | 0.02 ac | |
| | | | |
| Comments, Narrative Discussion, Justification of Category Changes: | | | |
| | | | |
| Final score: 36 Categor | y: | Mod. 0 | Cat. 2 |

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|--------|---|-------|----------------|
| Step 1 | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| Step 2 | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | Х | |
| 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. | Х | |
| 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. | Х | |
| Step 5 | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | | Х |
| 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. | Х | |

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| | - | | |
|----|--|---|-------------------------|
| # | Question | Circle one | |
| 1 | Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover | YES Wetland should be evaluated for possible Category 3 status Go to Question 2 | NO Go to Question 2 |
| | has had critical habitat proposed (65 FR 41812 July 6, 2000). | | |
| 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? | Wetland is a Category 3 wetland. | Go to Question 3 |
| 2 | Decumented High Quality Watland In the wetland on record in | Go to Question 3 YES | NO |
| 3 | Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland? | Wetland is a Category 3 wetland Go to Question 4 | Go to Question 4 |
| 4 | Significant Breeding or Concentration Area. Does the wetland | YES | (NO) |
| | contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | Wetland is a Category 3 wetland | Go to Question 5 |
| | | Go to Question 5 | |
| 5 | Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by Phalaris arundinacea, Lythrum salicaria, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES Wetland is a Category 1 wetland Go to Question 6 | 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 (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 | YES | NO |
|-------|---|---|--------------------------|
| | deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | Wetland should be evaluated for possible Category 3 status. | Go to Question 9a |
| | | Category 5 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 | YES | NO |
| - 01- | elevation, or along a tributary to Lake Erie that is accessible to fish? | Go to Question 9b | 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 | YES | NO |
| | partially hydrologically restricted from Lake Erie due to lakeward or | Wetland should be | Go to Question 9c |
| | landward dikes or other hydrological controls? | evaluated for possible Category 3 status | |
| | | Category 5 status | |
| | | Go to Question 10 | |
| 9с | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland | YES | NO |
| | border alterations), or the wetland can be characterized as an | Go to Question 9d | Go to Question 10 |
| | "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. | | _ |
| 9d | Does the wetland have a predominance of native species within its | YES | NO |
| | vegetation communities, although non-native or disturbance tolerant native species can also be present? | Wetland is a Category | Go to Question 9e |
| | Thanks openies can also be present. | 3 wetland | Co to Quodicii oo |
| | | Go to Question 10 | |
| 9e | Does the wetland have a predominance of non-native or disturbance | YES | NO |
| | tolerant native plant species within its vegetation communities? | Wetland should be | Go to Question 10 |
| | | 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 | YES | NO |
| | characterized by the following description: the wetland has a sandy | Wetland is a Category | Go to Question 11 |
| | substrate with interspersed organic matter, a water table often within | 3 wetland. | |
| | several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be | Go to Question 11 | |
| | 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. | | |
| 11 | Relict Wet Prairies. Is the wetland a relict wet prairie community | YES | NO |
| | dominated by some or all of the species in Table 1. Extensive prairies | Watland should be | \smile |
| | were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion | Wetland should be evaluated for possible | Complete Quantitative |
| | Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), | Category 3 status | Rating |
| | and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | Complete Quantitative | |
| | inonigomory, van vven etc./. | Rating | |

Table 1. Characteristic plant species.

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|-----------------------|--------------------------------|---------------------------------|--------------------------|---------------------------|
| Lythrum salicaria | Zygadenus elegans var. glaucus | Calla palustris | Carex cryptolepis | Calamagrostis canadensis |
| Myriophyllum spicatum | Cacalia plantaginea | Carex atlantica var. capillacea | Carex lasiocarpa | Calamogrostis stricta |
| Najas minor | Carex flava | Carex echinata | Carex stricta | Carex atherodes |
| Phalaris arundinacea | Carex sterilis | Carex oligosperma | Cladium mariscoides | Carex buxbaumii |
| Phragmites australis | Carex stricta | Carex trisperma | Calamagrostis stricta | Carex pellita |
| Potamogeton crispus | Deschampsia caespitosa | Chamaedaphne calyculata | Calamagrostis canadensis | Carex sartwellii |
| Ranunculus ficaria | Eleocharis rostellata | Decodon verticillatus | Quercus palustris | Gentiana andrewsii |
| Rhamnus frangula | Eriophorum viridicarinatum | Eriophorum virginicum | · | Helianthus grosseserratus |
| Typha angustifolia | Gentianopsis spp. | Larix laricina | | Liatris spicata |
| Typha xglauca | Lobelia kalmii | Nemopanthus mucronatus | | Lysimachia quadriflora |
| | Parnassia glauca | Schechzeria palustris | | Lythrum alatum |
| | Potentilla fruticosa | Sphagnum spp. | | Pycnanthemum virginianum |
| | Rhamnus alnifolia | Vaccinium macrocarpon | | Silphium terebinthinaceum |
| | Rhynchospora capillacea | Vaccinium corymbosum | | Sorghastrum nutans |
| | Salix candida | Vaccinium oxycoccos | | Spartina pectinata |
| | Salix myricoides | Woodwardia virginica | | Solidago riddellii |
| | Salix serissima | Xyris difformis | | · · |
| | Solidago ohioensis | | | |
| | Tofieldia glutinosa | | | |
| | Triglochin maritimum | | | |
| | Triglochin palustre | | | |

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

| Site: V | VL-E | Rater(s): Matthew Ray, Mark Fedosick Date: 03/29/2018 |
|--------------|-----------------------|---|
| 0 | 0 | Metric 1. Wetland Area (size). |
| max 6 pts. | subtotal | Select one size class and assign score. Solution |
| 6 | 6 | Metric 2. Upland buffers and surrounding land use. |
| max 14 pts. | subtotal | 2a. Calculate average buffer width. Select only one and assign score. Do not double check. WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) X MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) 2b. Intensity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrub land, young second growth forest. (5) MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) |
| 15 | 21 | Metric 3. Hydrology. |
| max 30 pts. | subtotal | 3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) Experipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3c. Maximum water depth. Select only one and assign score. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Recovering (3) 3b. Connectivity. Score all that apply. 100 year floodplain (1) Part of wetland/upland (e.g. forest), complex (1) Part of riparian or upland corridor (1) Semi- to permanently inundated/saturated (3) Seasonally inundated/saturated (3) Seasonally saturated in upper 30cm (12in) (1) The connectivity. Score all that apply. 100 year floodplain (1) Part of wetland/upland (e.g. forest), complex (1) Part of riparian or upland corridor (1) Semi- to permanently inundated/saturated (2) Seasonally inundated (2) Seasonally saturated in upper 30cm (12in) (1) The connectivity. Score all that apply. 100 year floodplain (1) 100 year floodplain (1) Part of wetland/upland (e.g. forest), complex (1) Part of riparian or upland corridor (1) Semi- to permanently inundated/saturated (3) Seasonally inundated (2) Seasonally saturated in upper 30cm (12in) (1) Seasonally saturated in upper 30cm (12in) (1) The connectivity. Check all disturbances observed of filling/grading point source (nonstormwater) Figure 100 year floodplain (1) Detween stream/lake and other human use (1) Part of wetland/upland (e.g. forest), complex (1) Seasonally inundated (2) Seasonally inundated (2) Seasonally inundated (2) Seasonally inundated (2) Figure 100 year floodplain (1) Part of vetland/upland (e.g. forest), complex (1) Part of riparian or upland corridor (1) Seasonally inundated (2) Figure 100 year floodplain (1) Part of riparian or upland corridor (1) Seasonally inundated (2) Figure 100 year floodplain (1) |
| 1 | - | Recent or no recovery (1) dike weir stormwater input road bed/RR track dredging other other |
| 12 | 33 | Metric 4. Habitat Alteration and Development. |
| max 20 pts. | subtotal | 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) |
| | | 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4) × Fair (3) Poor to fair (2) Poor (1) |
| | | 4c. Habitat alteration. Score one or double check and average. None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1) Check all disturbances observed mowing shrub/sapling removal herbaceous/aquatic bed removal sedimentation |
| s | 33 subtotal this p | selective cutting dredging woody debris removal toxic pollutants and nutrient enrichment |
| last revised | d 1 Februa | ry 2001 jjm |

| Site: W | L-E | Rater | (s): Matthew | Ray, Mark Fedosick | Date: 03/29/2018 |
|-------------|---------------------|---|--|---|------------------------------|
| SI | 33 ubtotal first pa | age | | | |
| 0 | 33 | Metric 5. Special Wetlar | nds. | | |
| max 10 pts. | subtotal | Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland- Lake Erie coastal/tributary wetland- Lake Plain Sand Prairies (Oak Oper Relict Wet Prairies (10) Known occurrence state/federal three Significant migratory songbird/water Category 1 Wetland. See Question | restricted hydronings) (10) eatened or ender | angered species (10) | |
| 3 | 36 | Metric 6. Plant commun | ities, int | erspersion, microt | opography. |
| max 20 pts. | subtotal |] 6a. Wetland Vegetation Communities. | Vegetation | Community Cover Scale | |
| | | Score all present using 0 to 3 scale. | 0 | Absent or comprises <0.1ha (0.2 | 2471 acres) contiguous area |
| | | Aquatic bed | 1 | Present and either comprises sr | |
| | | 1 Emergent | | vegetation and is of moderate | quality, or comprises a |
| | | Shrub | | significant part but is of low qu | • |
| | | Forest | 2 | Present and either comprises si | gnificant part of wetland's |
| | | Mudflats | | vegetation and is of moderate | quality or comprises a small |
| | | Open water | | part and is of high quality | |
| | | Other | 3 | Present and comprises significa | |
| | | 6b. horizontal (plan view) Interspersion. | | vegetation and is of high quali | ty |
| | | Select only one. | Narrativo D | escription of Vegetation Quality | |
| | | High (5) Moderately high(4) | low | Low spp diversity and/or predon | ninance of nonnative or |
| | | Moderate (3) | low | disturbance tolerant native spe | |
| | | Moderately low (2) | mod | Native spp are dominant compo | |
| | | X Low (1) | | although nonnative and/or dist | |
| | | None (0) | | can also be present, and spec | ies diversity moderate to |
| | | 6c. Coverage of invasive plants. Refer | | moderately high, but generally | |
| | | to Table 1 ORAM long form for list. Add | - | threatened or endangered spp | |
| | | or deduct points for coverage | high | A predominance of native specie | |
| | | Extensive >75% cover (-5) | | and/or disturbance tolerant na | • • |
| | | Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) | | absent, and high spp diversity the presence of rare, threaten | |
| | | Nearly absent <5% cover (0) | | the presence of fare, threaten | ed, or endangered spp |
| | | X Absent (1) | Mudflat and | d Open Water Class Quality | |
| | | 6d. Microtopography. | 0 | Absent <0.1ha (0.247 acres) | |
| | | Score all present using 0 to 3 scale. | 1 | Low 0.1 to <1ha (0.247 to 2.47 a | acres) |
| | | Vegetated hummucks/tussucks | 2 | Moderate 1 to <4ha (2.47 to 9.8 | 88 acres) |
| | | Coarse woody debris >15cm (6in) | 3 | High 4ha (9.88 acres) or more | |
| | | Standing dead >25cm (10in) dbh | | | |
| | | Amphibian breeding pools | | graphy Cover Scale | |
| | | | 0 | Absent Property amounts or in | f more commen |
| | | | 1 | Present very small amounts or i of marginal quality | i more common |
| | | | 2 | Present in moderate amounts, b | out not of highest |
| | | | 2 | quality or in small amounts of | |
| | | | 3 | Present in moderate or greater a | |
| | 1 | | - | and of highest quality | ·- |
| 36 | | | | · | |
| | 1 | | | | |

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|------------------------|--|--|--|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES (NO) | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES (NO) | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | |
| Ü | Metric 2. Buffers and surrounding land use | 6 | |
| | Metric 3. Hydrology | 15 | |
| | Metric 4. Habitat | 12 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 3 | |
| | TOTAL SCORE | 36 | Category based on score breakpoints Mod. Cat. 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- |
| 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 | NO | categorized by the ORAM 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 |
| Did you answer "Yes" to Narrative Rating No. 5 | 3 status YES Wetland is categorized as a Category 1 wetland | NO | may also be used to determine the wetland's category. Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold <i>(including</i> 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? | Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands? | YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat, OR recreational functions AND the wetland was not categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, loca 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. |



End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| Background information | |
|---|-----------------------|
| Name: Matthew Ray, Mark Fedosick | |
| Date: | |
| 03/29/2018 | |
| Affiliation: | |
| ms consultants, inc Address: | |
| One Cascade Plaza Suite 140, Akron, Ohio, 44308-1116 | |
| Phone Number: 330-258-9920 | |
| e-mail address: mray@msconsultants.com | |
| Name of Wetland: WL-F | |
| Vegetation Communit(ies): | |
| Palustrine Emergent (PEM) | |
| HGM Class(es): Depression (I) Surface Water (A) | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. | |
| See Report | |
| occ report | |
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| Lat/Long or UTM Coordinate | 40.064573, -82.907472 |
| USGS Quad Name | Northeast Columbus |
| County | Franklin |
| Township | - |
| Section and Subsection | 4, T 2 N, R 17 W |
| Hydrologic Unit Code | 050600011502 |
| Site Visit | 03/29/2018 |
| National Wetland Inventory Map | See Report |
| Ohio Wetland Inventory Map | See Report |
| Soil Survey | See Report |

See Report

Delineation report/map

| Name of Wetland: WL-F | | |
|--|-----------|-------------|
| Wetland Size (acres, hectares): | | 0.08 ac |
| Sketch: Include north arrow, relationship with other surface waters, vegetation zone | es, etc. | 0.00 40 |
| See Report | | |
| and the second s | | |
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| Comments, Narrative Discussion, Justification of Category Changes: | | |
| Commence, Narraure Discussion, Guesmounon of Guesger, Grianges. | | |
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| | | Γ |
| Final score: 37 | Category: | Mod. Cat. 2 |

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|--------|---|-------|----------------|
| Step 1 | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| Step 2 | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | Х | |
| 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. | Х | |
| 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. | Х | |
| Step 5 | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | | Х |
| 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. | Х | |

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| | - | | |
|----|--|---|-------------------------|
| # | Question | Circle one | |
| 1 | Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover | YES Wetland should be evaluated for possible Category 3 status Go to Question 2 | NO Go to Question 2 |
| | has had critical habitat proposed (65 FR 41812 July 6, 2000). | | |
| 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? | Wetland is a Category 3 wetland. | Go to Question 3 |
| 2 | Decumented High Quality Watland In the watland on record in | Go to Question 3 YES | NO |
| 3 | Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland? | Wetland is a Category 3 wetland Go to Question 4 | Go to Question 4 |
| 4 | Significant Breeding or Concentration Area. Does the wetland | YES | (NO) |
| | contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | Wetland is a Category 3 wetland | Go to Question 5 |
| | | Go to Question 5 | |
| 5 | Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by Phalaris arundinacea, Lythrum salicaria, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES Wetland is a Category 1 wetland Go to Question 6 | 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 (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 | YES | NO |
|-------|---|---|--------------------------|
| | deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | Wetland should be evaluated for possible Category 3 status. | Go to Question 9a |
| | | Category 5 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 | YES | NO |
| - 01- | elevation, or along a tributary to Lake Erie that is accessible to fish? | Go to Question 9b | 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 | YES | NO |
| | partially hydrologically restricted from Lake Erie due to lakeward or | Wetland should be | Go to Question 9c |
| | landward dikes or other hydrological controls? | evaluated for possible Category 3 status | |
| | | Category 5 status | |
| | | Go to Question 10 | |
| 9с | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland | YES | NO |
| | border alterations), or the wetland can be characterized as an | Go to Question 9d | Go to Question 10 |
| | "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. | | _ |
| 9d | Does the wetland have a predominance of native species within its | YES | NO |
| | vegetation communities, although non-native or disturbance tolerant native species can also be present? | Wetland is a Category | Go to Question 9e |
| | Thanks openies can also be present. | 3 wetland | Co to Quodicii oo |
| | | Go to Question 10 | |
| 9e | Does the wetland have a predominance of non-native or disturbance | YES | NO |
| | tolerant native plant species within its vegetation communities? | Wetland should be | Go to Question 10 |
| | | 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 | YES | NO |
| | characterized by the following description: the wetland has a sandy | Wetland is a Category | Go to Question 11 |
| | substrate with interspersed organic matter, a water table often within | 3 wetland. | |
| | several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be | Go to Question 11 | |
| | 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. | | |
| 11 | Relict Wet Prairies. Is the wetland a relict wet prairie community | YES | NO |
| | dominated by some or all of the species in Table 1. Extensive prairies | Watland should be | \smile |
| | were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion | Wetland should be evaluated for possible | Complete Quantitative |
| | Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), | Category 3 status | Rating |
| | and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | Complete Quantitative | |
| | inonigoniory, van vven etc./. | Rating | |

Table 1. Characteristic plant species.

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|-----------------------|--------------------------------|---------------------------------|--------------------------|---------------------------|
| Lythrum salicaria | Zygadenus elegans var. glaucus | Calla palustris | Carex cryptolepis | Calamagrostis canadensis |
| Myriophyllum spicatum | Cacalia plantaginea | Carex atlantica var. capillacea | Carex lasiocarpa | Calamogrostis stricta |
| Najas minor | Carex flava | Carex echinata | Carex stricta | Carex atherodes |
| Phalaris arundinacea | Carex sterilis | Carex oligosperma | Cladium mariscoides | Carex buxbaumii |
| Phragmites australis | Carex stricta | Carex trisperma | Calamagrostis stricta | Carex pellita |
| Potamogeton crispus | Deschampsia caespitosa | Chamaedaphne calyculata | Calamagrostis canadensis | Carex sartwellii |
| Ranunculus ficaria | Eleocharis rostellata | Decodon verticillatus | Quercus palustris | Gentiana andrewsii |
| Rhamnus frangula | Eriophorum viridicarinatum | Eriophorum virginicum | - | Helianthus grosseserratus |
| Typha angustifolia | Gentianopsis spp. | Larix laricina | | Liatris spicata |
| Typha xglauca | Lobelia kalmii | Nemopanthus mucronatus | | Lysimachia quadriflora |
| | Parnassia glauca | Schechzeria palustris | | Lythrum alatum |
| | Potentilla fruticosa | Sphagnum spp. | | Pycnanthemum virginianum |
| | Rhamnus alnifolia | Vaccinium macrocarpon | | Silphium terebinthinaceum |
| | Rhynchospora capillacea | Vaccinium corymbosum | | Sorghastrum nutans |
| | Salix candida | Vaccinium oxycoccos | | Spartina pectinata |
| | Salix myricoides | Woodwardia virginica | | Solidago riddellii |
| | Salix serissima | Xyris difformis | | · · |
| | Solidago ohioensis | | | |
| | Tofieldia glutinosa | | | |
| | Triglochin maritimum | | | |
| | Triglochin palustre | | | |

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

| Site: V | VL-F | Rater(s): Matthew Ray, Mark Fedosick | Date: 03/29/2018 |
|--------------|-----------------|--|--|
| 0 | 0 | Metric 1. Wetland Area (size). | |
| max 6 pts. | subtotal | 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 <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) × <0.1 acres (0.04ha) (0 pts) | |
| 6 | 6 | Metric 2. Upland buffers and surrounding land use | |
| max 14 pts. | subtotal | 2a. Calculate average buffer width. Select only one and assign score. Do not double check. WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7) X MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1) VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0) 2b. Intensity of surrounding land use. Select one or double check and average. VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7) LOW. Old field (>10 years), shrub land, young second growth forest. (5) X MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fall HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1) | |
| 15 | 21 | Metric 3. Hydrology. | |
| max 30 pts. | subtotal | x Precipitation (1) x Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3c. Maximum water depth. Select only one and assign score. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) x <0.4m (<15.7in) (1) Part of wetland/u | ain (1) //lake and other human use (1) upland (e.g. forest), complex (1) or upland corridor (1) turation. Score one or dbl check nently inundated/saturated (4) ated/saturated (3) |
| | | 3e. Modifications to natural hydrologic regime. Score one or double check and average. None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1) Recovering (3) Recovering (4) | |
| 12 | 33 | Metric 4. Habitat Alteration and Development. | |
| max 20 pts. | subtotal | 4a. Substrate disturbance. Score one or double check and average. None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. | |
| | | Excellent (7) Very good (6) Good (5) X Moderately good (4) Fair (3) Poor to fair (2) Poor (1) | |
| | 33 | Recent or no recovery (1) Clearcutting Sedimentation | atic bed removal |
| | subtotal this p | | en |
| iast revised | u i Februa | ary 2001 jjm | |

7

| Site: W | L-F | Rater | (s): Matthew | Ray, Mark Fedosick | Date: 03/29/2018 |
|-------------|---------------------|--|---|---|------------------------------|
| SI | 33 ubtotal first pa | iqe | | | |
| 0 | 33 | Metric 5. Special Wetlan | ds. | | |
| max 10 pts. | subtotal | Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-ru Lake Erie coastal/tributary wetland-ru Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/water Category 1 Wetland. See Question | estricted hydro ings) (10) atened or enda fowl habitat or 1 Qualitative R | angered species (10) usage (10) ating (-10) | |
| 4 | 37 | Metric 6. Plant communi | ities, int | erspersion, microto | ppography. |
| max 20 pts. | subtotal | 6a. Wetland Vegetation Communities. | <u>Vegetation</u> | Community Cover Scale | |
| | | Score all present using 0 to 3 scale. | 0 | Absent or comprises <0.1ha (0.24 | |
| | | Aquatic bed | 1 | Present and either comprises sm | |
| | | 1 Emergent | | vegetation and is of moderate of | |
| | | Shrub | | significant part but is of low qua | - |
| | | Forest Mudflats | 2 | Present and either comprises sign | |
| | | Open water | | vegetation and is of moderate of part and is of high quality | quality of comprises a small |
| | | Other | 3 | Present and comprises significan | t part or more of wetland's |
| | | 6b. horizontal (plan view) Interspersion. | 3 | vegetation and is of high quality | |
| | | Select only one. | | Togotation and to or mgm quanty | · |
| | | High (5) | Narrative D | escription of Vegetation Quality | |
| | | Moderately high(4) | low | Low spp diversity and/or predomi | nance of nonnative or |
| | | X Moderate (3) | | disturbance tolerant native spec | |
| | | Moderately low (2) | mod | Native spp are dominant compon | ent of the vegetation, |
| | | Low (1) | | although nonnative and/or distu | rbance tolerant native spp |
| | | None (0) | | can also be present, and specie | es diversity moderate to |
| | | 6c. Coverage of invasive plants. Refer | | moderately high, but generally | w/o presence of rare |
| | | to Table 1 ORAM long form for list. Add | | threatened or endangered spp | |
| | | or deduct points for coverage | high | A predominance of native species | • • |
| | | Extensive >75% cover (-5) | | and/or disturbance tolerant nati | |
| | | Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) | | absent, and high spp diversity a the presence of rare, threatener | |
| | | × Nearly absent <5% cover (0) | - | the presence of fare, threatener | u, or endangered spp |
| | | Absent (1) | Mudflat and | d Open Water Class Quality | |
| | | 6d. Microtopography. | 0 | Absent <0.1ha (0.247 acres) | |
| | | Score all present using 0 to 3 scale. | 1 | Low 0.1 to <1ha (0.247 to 2.47 ac | cres) |
| | | Vegetated hummucks/tussucks | 2 | Moderate 1 to <4ha (2.47 to 9.88 | 3 acres) |
| | | Coarse woody debris >15cm (6in) | 3 | High 4ha (9.88 acres) or more | |
| | | Standing dead >25cm (10in) dbh | | | |
| | | Amphibian breeding pools | | raphy Cover Scale | |
| | | | 0 | Absent | |
| | | | 1 | Present very small amounts or if | more common |
| | | | 2 | of marginal quality Present in moderate amounts, bu | at not of highest |
| | | | 2 | quality or in small amounts of h | |
| | | | 3 | Present in moderate or greater ar | |
| | 1 | | - | and of highest quality | ·- |
| 37 | | | | , , , , , | |

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|------------------------|--|--|--|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES NO | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES (NO) | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 0 | |
| Ü | Metric 2. Buffers and surrounding land use | 6 | |
| | Metric 3. Hydrology | 15 | |
| | Metric 4. Habitat | 12 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 4 | |
| | TOTAL SCORE | 37 | Category based on score breakpoints Mod. Cat. 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- |
| 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 | NO | categorized by the ORAM 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 |
| Did you answer "Yes" to Narrative Rating No. 5 | 3 status YES Wetland is categorized as a Category 1 wetland | NO | may also be used to determine the wetland's category. Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold <i>(including</i> 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? | Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands? | YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat, OR recreational functions AND the wetland was not categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, loca 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. |



End of Ohio Rapid Assessment Method for Wetlands.

Background Information

| Buokground information | |
|---|-----------------------|
| Name: Matthew Ray, Mark Fedosick | |
| Date: | |
| 03/29/2018 | |
| Affiliation: | |
| ms consultants, inc | |
| Address: One Cascade Plaza Suite 140, Akron, Ohio, 44308-1116 | |
| Phone Number: | |
| 330-258-9920 | |
| e-mail address: | |
| mray@msconsultants.com | |
| Name of Wetland: WL-G | |
| Vegetation Communit(ies): | |
| Palustrine Forested (PFO) | |
| HGM Class(es): | |
| Depression (I) Surface Water (A) | |
| Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc. | |
| See Report | |
| ' | |
| | |
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| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| Lat/Long or UTM Coordinate | |
| | 40.064746, -82.906954 |
| USGS Quad Name | Northeast Columbus |
| County | Franklin |
| Township | - |
| Section and Subsection | 4, T 2 N, R 17 W |
| Hydrologic Unit Code | |
| Site Visit | 050600011502 |
| | 03/29/2018 |
| National Wetland Inventory Map | See Report |
| Ohio Wetland Inventory Map | See Report |
| Soil Survey | See Report |

See Report

Delineation report/map

| Name of Wetland: WL-G | | |
|--|-----|----------|
| | | . 4.00 |
| | | >1.08 ac |
| Wetland Size (acres, hectares): Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. See Report | | >1.08 ac |
| Comments, Narrative Discussion, Justification of Category Changes: | | |
| | | |
| Final score : 50 Categor | ry: | Cat. 2 |

Scoring Boundary Worksheet

INSTRUCTIONS. The initial step in completing the ORAM is to identify the "scoring boundaries" of the wetland being rated. In many instances this determination will be relatively easy and the scoring boundaries will coincide with the "jurisdictional boundaries." For example, the scoring boundary of an isolated cattail marsh located in the middle of a farm field will likely be the same as that wetland's jurisdictional boundaries. In other instances, however, the scoring boundary will not be as easily determined. Wetlands that are small or isolated from other surface waters often form large contiguous areas or heterogeneous complexes of wetland and upland. In separating wetlands for scoring purposes, the hydrologic regime of the wetland is the main criterion that should be used. Boundaries between contiguous or connected wetlands should be established where the volume, flow, or velocity of water moving through the wetland changes significantly. Areas with a high degree of hydrologic interaction should be scored as a single wetland. In determining a wetland's scoring boundaries, use the guidelines in the ORAM Manual Section 5.0. In certain instances, it may be difficult to establish the scoring boundary for the wetland being rated. These problem situations include wetlands that form a patchwork on the landscape, wetlands divided by artificial boundaries like property fences, roads, or railroad embankments, wetlands that are contiguous with streams, lakes, or rivers, and estuarine or coastal wetlands. These situations are discussed below, however, it is recommended that Rater contact Ohio EPA, Division of Surface Water, 401/Wetlands Section if there are additional questions or a need for further clarification of the appropriate scoring boundaries of a particular wetland.

| # | Steps in properly establishing scoring boundaries | done? | not applicable |
|--------|---|-------|----------------|
| Step 1 | Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc. | X | |
| Step 2 | Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human-induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland. | Х | |
| 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. | Х | |
| 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. | Х | |
| Step 5 | In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately. | | Х |
| 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. | Х | |

End of Scoring Boundary Determination. Begin Narrative Rating on next page.

Narrative Rating

INSTRUCTIONS. Answer each of the following questions. Questions 1, 2, 3 and 4 should be answered based on information obtained from the site visit or the literature *and* by submitting a Data Services Request to the Ohio Department of Natural Resources, Division of Natural Areas and Preserves, Natural Heritage Data Services, 1889 Fountain Square Court, Building F-1, Columbus, Ohio 43224, 614-265-6453 (phone), 614-265-3096 (fax), http://www.dnr.state.oh.us/dnap. The remaining questions are designed to be answered primarily by the results of the site visit. Refer to the User's Manual for descriptions of these wetland types. Note: "Critical habitat" is legally defined in the Endangered Species Act and is the geographic area containing physical or biological features essential to the conservation of a listed species or as an area that may require special management considerations or protection. The Rater should contact the Region 3 Headquarters or the Columbus Ecological Services Office for updates as to whether critical habitat has been designated for other federally listed threatened or endangered species. "Documented" means the wetland is listed in the appropriate State of Ohio database.

| | - | | |
|----|--|---|-------------------------|
| # | Question | Circle one | |
| 1 | Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover | YES Wetland should be evaluated for possible Category 3 status Go to Question 2 | NO Go to Question 2 |
| | has had critical habitat proposed (65 FR 41812 July 6, 2000). | | |
| 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? | Wetland is a Category 3 wetland. | Go to Question 3 |
| 2 | Decumented High Quality Watland In the watland on record in | Go to Question 3 YES | NO |
| 3 | Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland? | Wetland is a Category 3 wetland Go to Question 4 | Go to Question 4 |
| 4 | Significant Breeding or Concentration Area. Does the wetland | YES | (NO) |
| | contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas? | Wetland is a Category 3 wetland | Go to Question 5 |
| | | Go to Question 5 | |
| 5 | Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by Phalaris arundinacea, Lythrum salicaria, or Phragmites australis, or 2) an acidic pond created or excavated on mined lands that has little or no vegetation? | YES Wetland is a Category 1 wetland Go to Question 6 | 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 (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 | YES | NO |
|-------|---|---|--------------------------|
| | deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh? | Wetland should be evaluated for possible Category 3 status. | Go to Question 9a |
| | | Category 5 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 | YES | NO |
| - 01- | elevation, or along a tributary to Lake Erie that is accessible to fish? | Go to Question 9b | 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 | YES | NO |
| | partially hydrologically restricted from Lake Erie due to lakeward or | Wetland should be | Go to Question 9c |
| | landward dikes or other hydrological controls? | evaluated for possible Category 3 status | |
| | | Category 5 status | |
| | | Go to Question 10 | |
| 9с | Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland | YES | NO |
| | border alterations), or the wetland can be characterized as an | Go to Question 9d | Go to Question 10 |
| | "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. | | _ |
| 9d | Does the wetland have a predominance of native species within its | YES | NO |
| | vegetation communities, although non-native or disturbance tolerant native species can also be present? | Wetland is a Category | Go to Question 9e |
| | Thanks openies can also be present. | 3 wetland | Co to Quodicii oo |
| | | Go to Question 10 | |
| 9e | Does the wetland have a predominance of non-native or disturbance | YES | NO |
| | tolerant native plant species within its vegetation communities? | Wetland should be | Go to Question 10 |
| | | 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 | YES | NO |
| | characterized by the following description: the wetland has a sandy | Wetland is a Category | Go to Question 11 |
| | substrate with interspersed organic matter, a water table often within | 3 wetland. | |
| | several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be | Go to Question 11 | |
| | 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. | | |
| 11 | Relict Wet Prairies. Is the wetland a relict wet prairie community | YES | NO |
| | dominated by some or all of the species in Table 1. Extensive prairies | Watland should be | \smile |
| | were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion | Wetland should be evaluated for possible | Complete Quantitative |
| | Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), | Category 3 status | Rating |
| | and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.). | Complete Quantitative | |
| | inonigomory, van vven etc./. | Rating | |

Table 1. Characteristic plant species.

| invasive/exotic spp | fen species | bog species | 0ak Opening species | wet prairie species |
|-----------------------|--------------------------------|---------------------------------|--------------------------|---------------------------|
| Lythrum salicaria | Zygadenus elegans var. glaucus | Calla palustris | Carex cryptolepis | Calamagrostis canadensis |
| Myriophyllum spicatum | Cacalia plantaginea | Carex atlantica var. capillacea | Carex lasiocarpa | Calamogrostis stricta |
| Najas minor | Carex flava | Carex echinata | Carex stricta | Carex atherodes |
| Phalaris arundinacea | Carex sterilis | Carex oligosperma | Cladium mariscoides | Carex buxbaumii |
| Phragmites australis | Carex stricta | Carex trisperma | Calamagrostis stricta | Carex pellita |
| Potamogeton crispus | Deschampsia caespitosa | Chamaedaphne calyculata | Calamagrostis canadensis | Carex sartwellii |
| Ranunculus ficaria | Eleocharis rostellata | Decodon verticillatus | Quercus palustris | Gentiana andrewsii |
| Rhamnus frangula | Eriophorum viridicarinatum | Eriophorum virginicum | - | Helianthus grosseserratus |
| Typha angustifolia | Gentianopsis spp. | Larix laricina | | Liatris spicata |
| Typha xglauca | Lobelia kalmii | Nemopanthus mucronatus | | Lysimachia quadriflora |
| | Parnassia glauca | Schechzeria palustris | | Lythrum alatum |
| | Potentilla fruticosa | Sphagnum spp. | | Pycnanthemum virginianum |
| | Rhamnus alnifolia | Vaccinium macrocarpon | | Silphium terebinthinaceum |
| | Rhynchospora capillacea | Vaccinium corymbosum | | Sorghastrum nutans |
| | Salix candida | Vaccinium oxycoccos | | Spartina pectinata |
| | Salix myricoides | Woodwardia virginica | | Solidago riddellii |
| | Salix serissima | Xyris difformis | | · · |
| | Solidago ohioensis | | | |
| | Tofieldia glutinosa | | | |
| | Triglochin maritimum | | | |
| | Triglochin palustre | | | |

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

| Site: WL-G | Rater(s): Matthew | Ray, Mark Fedosick | Date: 03/29/2018 |
|---------------------------------------|---|--|--|
| 2 2 | Metric 1. Wetland Area (size). | | |
| max 6 pts. subtota | 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 <10.1ha) (4 pts) 3 to <10 acres (1.2 to <4ha) (3 pts) X 0.3 to <3 acres (0.12 to <1.2ha) (2pts) 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts) | | |
| 6 8 | Metric 2. Upland buffers and sur | rounding land use | |
| max 14 pts. subtota | 2a. Calculate average buffer width. Select only one and ass WIDE. Buffers average 50m (164ft) or more aroun X MEDIUM. Buffers average 25m to <50m (82 to <1) NARROW. Buffers average 10m to <25m (32ft to VERY NARROW. Buffers average <10m (<32ft) at VERY NARROW. Buffers average <10m (<32ft) at VERY LOW. 2nd growth or older forest, prairie, sa LOW. Old field (>10 years), shrub land, young sec X MODERATELY HIGH. Residential, fenced pasture X HIGH. Urban, industrial, open pasture, row cropping | d wetland perimeter (7) 64ft) around wetland perimeter (4) <82ft) around wetland perimeter (1 round wetland perimeter (0) check and average. vannah, wildlife area, etc. (7) ond growth forest. (5) e, park, conservation tillage, new fal | |
| 17 25 | Metric 3. Hydrology. | | |
| max 30 pts. subtota | 3a. Sources of Water. Score all that apply. High pH groundwater (5) Other groundwater (3) X Precipitation (1) X Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3c. Maximum water depth. Select only one and assign score >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2) X <0.4m (<15.7in) (1) 3e. Modifications to natural hydrologic regime. Score one or None or none apparent (12) X Recovered (7) Recovering (3) Recent or no recovery (1) Check all disturbance dike | X Part of wetland/Part of riparian of ripa | lain (1) //lake and other human use (1) upland (e.g. forest), complex (1) or upland corridor (1) uturation. Score one or dbl check nently inundated/saturated (4) ated/saturated (3) dated (2) rated in upper 30cm (12in) (1) onstormwater) |
| 15 40 | Metric 4. Habitat Alteration and | | |
| max 20 pts. subtota | al 4a. Substrate disturbance. Score one or double check and a X None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1) 4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) X Good (5) Moderately good (4) Fair (3) Poor to fair (2) | - | |
| | Poor (1) 4c. Habitat alteration. Score one or double check and avera | | |
| 40 subtotal this last revised 1 Febru | | shrub/sapling re herbaceous/aqu sedimentation dredging | latic bed removal |

| Site: W | L-G | Rater | (s): Matthew | Ray, Mark Fedosick | Date: 03/29/2018 |
|-------------|----------|--|--|--|--------------------------------|
| si | 40 | nge | | | |
| 0 | 40 | Metric 5. Special Wetlan | ds. | | |
| max 10 pts. | subtotal | Check all that apply and score as indicated. Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-ru Lake Erie coastal/tributary wetland-ru Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/water Category 1 Wetland. See Question | estricted hydro ings) (10) atened or enda fowl habitat or | angered species (10) | |
| 10 | 50 | Metric 6. Plant communi | ities, int | erspersion, microt | opography. |
| max 20 pts. | subtotal | 6a. Wetland Vegetation Communities. | Vegetation | Community Cover Scale | |
| | | Score all present using 0 to 3 scale. | 0 | Absent or comprises <0.1ha (0.2 | 471 acres) contiguous area |
| | | Aquatic bed | 1 | Present and either comprises sm | |
| | | 1 Emergent | | vegetation and is of moderate | |
| | | Shrub | | significant part but is of low qua | - |
| | | 2 Forest Mudflats | 2 | Present and either comprises significant vegetation and is of moderate | |
| | | Open water | | part and is of high quality | quality of complices a small |
| | | Other | 3 | Present and comprises significar | nt part, or more, of wetland's |
| | | 6b. horizontal (plan view) Interspersion. | | vegetation and is of high qualit | у |
| | | Select only one. | | | |
| | | High (5) X Moderately high(4) | low | Low spp diversity and/or predom | inance of nonnative or |
| | | Moderate (3) | IOW | disturbance tolerant native spe | |
| | | Moderately low (2) | mod | Native spp are dominant compor | |
| | | Low (1) | | although nonnative and/or dist | |
| | | None (0) | | can also be present, and speci | • |
| | | 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add | | moderately high, but generally threatened or endangered spp | |
| | | or deduct points for coverage | high | A predominance of native specie | |
| | | Extensive >75% cover (-5) | J | and/or disturbance tolerant nat | |
| | | Moderate 25-75% cover (-3) | | absent, and high spp diversity | • |
| | | Sparse 5-25% cover (-1) | | the presence of rare, threatene | ed, or endangered spp |
| | | X Nearly absent <5% cover (0) Absent (1) | Mudflat and | d Open Water Class Quality | |
| | | 6d. Microtopography. | 0 | Absent <0.1ha (0.247 acres) | |
| | | Score all present using 0 to 3 scale. | 1 | Low 0.1 to <1ha (0.247 to 2.47 a | cres) |
| | | Vegetated hummucks/tussucks | 2 | Moderate 1 to <4ha (2.47 to 9.8 | 8 acres) |
| | | 1 Coarse woody debris >15cm (6in) 1 Standing dead >25cm (10in) dbh | 3 | High 4ha (9.88 acres) or more | |
| | | Amphibian breeding pools | Microtopoo | graphy Cover Scale | |
| | | | 0 | Absent | |
| | | | 1 | Present very small amounts or if | more common |
| | | | 2 | of marginal quality Present in moderate amounts, but | ut not of highest |
| | | | ۷ | quality or in small amounts of h | |
| | _ | | 3 | Present in moderate or greater a | |
| F 0 | | | | and of highest quality | |
| 50 | | | | | |

End of Quantitative Rating. Complete Categorization Worksheets.

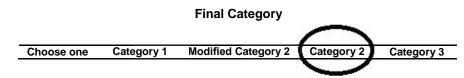
ORAM Summary Worksheet

| | | circle answer or insert score | Result |
|------------------------|--|--|--|
| Narrative Rating | Question 1 Critical Habitat | YES NO | If yes, Category 3. |
| | Question 2. Threatened or Endangered Species | YES NO | If yes, Category 3. |
| | Question 3. High Quality Natural Wetland | YES NO | If yes, Category 3. |
| | Question 4. Significant bird habitat | YES NO | If yes, Category 3. |
| | Question 5. Category 1 Wetlands | YES NO | If yes, Category 1. |
| | Question 6. Bogs | YES NO | If yes, Category 3. |
| | Question 7. Fens | YES NO | If yes, Category 3. |
| | Question 8a. Old Growth Forest | YES NO | If yes, Category 3. |
| | Question 8b. Mature Forested Wetland | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9b. Lake Erie Wetlands - Restricted | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 9d. Lake Erie Wetlands – Unrestricted with native plants | YES (NO) | If yes, Category 3 |
| | Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants | YES (NO) | If yes, evaluate for Category 3; may also be 1 or 2. |
| | Question 10. Oak Openings | YES NO | If yes, Category 3 |
| | Question 11. Relict Wet Prairies | YES NO | If yes, evaluate for Category 3; may also be 1 or 2. |
| Quantitative Rating | Metric 1. Size | 2 | |
| ŭ | Metric 2. Buffers and surrounding land use | 6 | |
| | Metric 3. Hydrology | 17 | |
| | Metric 4. Habitat | 15 | |
| | Metric 5. Special Wetland Communities | 0 | |
| | Metric 6. Plant communities, interspersion, microtopography | 10 | |
| | TOTAL SCORE | 50 | Category based on score breakpoints Cat. 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 <i>less</i> than the Category 2 scoring threshold (<i>excluding</i> 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 overgate acterized 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 | NO | categorized by the ORAM 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 |
| Did you answer "Yes" to Narrative Rating No. 5 | 3 status YES Wetland is categorized as a Category 1 wetland | NO | may also be used to determine the wetland's category. Is quantitative rating score <i>greater</i> than the Category 2 scoring threshold <i>(including</i> 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? | Wetland is assigned to the appropriate category based on the scoring range | NO | If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score. |
| Does the quantitative score fall with the "gray zone" for Category 1 or 2 or Category 2 or 3 wetlands? | YES Wetland is assigned to the higher of the two categories or assigned to a category based on detailed assessments and the narrative criteria | NO NO | Rater has the option of assigning the wetland to the higher of the two categories or to assign a category based on the results of a nonrapid wetland assessment method, e.g. functional assessment, biological assessment, etc, and a consideration of the narrative criteria in OAC rule 3745-1-54(C). |
| Does the wetland otherwise exhibit moderate OR superior hydrologic OR habitat, OR recreational functions AND the wetland was not categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method? | YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form | Wetland is assigned to category as determined by the ORAM. | A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, loca 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. |



End of Ohio Rapid Assessment Method for Wetlands.

| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|---|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: WL-A |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| Landform (hillside, terrace, etc.): Flat Local | relief (concave, convex,etc): Concave Slope %: 0 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.062522 | Long: -82.906426 Datum: 1983 |
| Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes (BeB) | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No , Soil No , or Hydrology No significantly distur | |
| Are Vegetation No , Soil No , or Hydrology No naturally problema | · — — |
| SUMMARY OF FINDINGS – Attach site map showing sam | |
| Hydrophytic Vegetation Present? Yes X No | Is the Sampled Area |
| Hydric Soil Present? Yes X No | within a Wetland? Yes X No |
| Wetland Hydrology Present? Yes X No | If yes, optional Wetland Site ID: |
| Remarks: (Explain alternative procedures here or in a separate report.) | |
| 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) |
| X Surface Water (A1) Water-Stained Leaves (| |
| - High Water Table (A2) - Aquatic Fauna (B13) | Moss Trim Lines (B16) |
| X Saturation (A3) - Marl Deposits (B15) | Dry-Season Water Table (C2) |
| Water Marks (B1) Hydrogen Sulfide Odor (| |
| Sediment Deposits (B2) Oxidized Rhizospheres | <u> </u> |
| - Drift Deposits (B3) - Presence of Reduced Ir | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction in | |
| - Iron Deposits (B5) - Thin Muck Surface (C7) | |
| Inundation Visible on Aerial Imagery (B7) Other (Explain in Remar | |
| Sparsely Vegetated Concave Surface (B8) | X FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes X No Depth (inches): | |
| Water Table Present? Yes No _X Depth (inches): | |
| Saturation Present? Yes X No Depth (inches): | : 8 Wetland Hydrology Present? Yes X No |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| Remarks: | |
| | |
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VEGETATION – Use scientific names of plants. Sampling Point: WL-A Absolute Dominant Indicator <u>Tree Stratum</u> (Plot size: 30ft²) Species? % Cover Status **Dominance Test worksheet:** Number of Dominant Species That 2. Are OBL, FACW, or FAC: 4 (A) 3. **Total Number of Dominant** (B) 4. Species Across All Strata: 5. Percent of Dominant Species That 6. Are OBL, FACW, or FAC: 100.0% (A/B) Prevalence Index worksheet: Multiply by: =Total Cover Total % Cover of: Sapling/Shrub Stratum (Plot size: 15ft² OBL species x 1 = **FACW** species 20 x 2 = FAC species 5 x 3 = 15 0 3. **FACU** species x 4 = 4. UPL species 0 x 5 = 5. Column Totals 60 (A) Prevalence Index = B/A =1.50 6. **Hydrophytic Vegetation Indicators:** 1 - Rapid Test for Hydrophytic Vegetation =Total Cover Herb Stratum (Plot size: 5ft²) X 2 - Dominance Test is >50% Juncus effusus 20 Yes OBL X 3 - Prevalence Index is ≤3.0¹ 5 4 - Morphological Adaptations¹ (Provide 2. OBL Scirpus cyperinus No data in Remarks or on a separate sheet) 3. Apocynum cannabinum 5 No FAC 4. Carex Iurdia 10 Yes **FACW** Problematic Hydrophytic Vegetation¹ (Explain) 5. Carex vulpinoidea 10 Yes **FACW** ¹Indicators of hydric soil and wetland hydrology must 10 Eleocharis obtusa OBL 6. Yes be present, unless disturbed or problematic. 7. **Definitions of Vegetation Strata:** 8. Tree - Woody plants 3 in. (7.6 cm) or more in diameter 9. at breast height (DBH), regardless of height. 10. Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless 60 =Total Cover of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15ft² Woody vines - All woody vines greater than 3.28 ft in 1. height. Hydrophytic 3. Vegetation Present? Yes X No ____ =Total Cover Remarks: (Include photo numbers here or on a separate sheet.)

Page 2

SOIL Sampling Point WL-A

| Profile Desc | cription: (Describe t | o the de | pth needed to docu | ıment tl | ne indica | tor or co | onfirm the absence o | f indicators.) |
|---|-----------------------|-----------|--|---|--|--------------------------------|--|---|
| Depth | Matrix | | Redox | x Featur | es | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 3/2 | 95 | 10YR 5/8 | 5 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 8-16 | 10YR 4/2 | 95 | 10YR 5/8 | 5 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 95 | 10YR 5/6 | 5 | <u>C</u> | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | | | | | | · | |
| | | | | | | | | |
| ¹ Type: C=C | oncentration, D=Deple | etion, RI | M=Reduced Matrix, M | /IS=Mas | ked Sand | d Grains. | ² Location: P | L=Pore Lining, M=Matrix. |
| - Black H - Hydroge - Stratified X Depleted - Thick Do - Sandy N - Sandy F - Stripped - Dark Su | | | - Polyvalue Belo MLRA 149B; - Thin Dark Surfa - High Chroma S - Loamy Mucky I - Loamy Gleyed X Depleted Matrix - Redox Dark Surfa - Depleted Dark - Redox Depress - Marl (F10) (LR |) ace (S9) Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F6 R K, L) | (LRR R 611) (LRI (F1) (LRI F2) 66) (F7) | , MLRA 1 R K, L) R K, L) | - 2 cm Mu - Coast Pi - 5 cm Mu - Polyvalu - Thin Dar - Iron-Mar - Piedmor - Mesic Si - Red Par - Very Sha - Other (E | or Problematic Hydric Soils ³ : ack (A10) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R) acky Peat or Peat (S3) (LRR K, L, R) be Below Surface (S8) (LRR K, L) ck Surface (S9) (LRR K, L) aganese Masses (F12) (LRR K, L, R) at Floodplain Soils (F19) (MLRA 149B) podic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) allow Dark Surface (F22) (xplain in Remarks) |
| Type: Depth (i | | | | | | | Hydric Soil Presei | nt? Yes <u>X</u> No |
| Remarks: | | | | | | | L | |
| | | | | | | | | |

| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|--|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-A |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| • • • • | relief (concave, convex,etc): Convex Slope %: 2 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.062404 | Long: -82.906644 Datum: 1983 |
| | |
| Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes (BeB) | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No, Soil No, or Hydrology No significantly distur | |
| Are Vegetation No, Soil No, or Hydrology No naturally problems | atic? (If needed, explain any answers in Remarks.) |
| SUMMARY OF FINDINGS – Attach site map showing same | pling point locations, transects, important features, etc. |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area |
| Hydric Soil Present? Yes X No | within a Wetland? Yes No _X_ |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: |
| Remarks: (Explain alternative procedures here or in a separate report.) | |
| Tromand. (Explain alternative procedures here of in a separate reports) | |
| | |
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| | |
| | |
| | |
| HYDROLOGY | |
| | Secondary Indicators (minimum of two required) |
| Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) | Secondary Indicators (minimum of two required) |
| | Surface Soil Cracks (B6) (B9) - Drainage Patterns (B10) |
| | |
| - High Water Table (A2) - Aquatic Fauna (B13) - Mark Deposits (B15) | - Moss Trim Lines (B16) |
| - Saturation (A3) - Marl Deposits (B15) | - Dry-Season Water Table (C2) |
| - Water Marks (B1) - Hydrogen Sulfide Odor | |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | |
| - Drift Deposits (B3) - Presence of Reduced Ir | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction i | |
| Iron Deposits (B5) Thin Muck Surface (C7) | |
| Inundation Visible on Aerial Imagery (B7) Other (Explain in Remai | |
| Sparsely Vegetated Concave Surface (B8) | FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes No X Depth (inches) | 4 |
| Water Table Present? Yes No _X Depth (inches) | d |
| Saturation Present? Yes No X Depth (inches) | : Wetland Hydrology Present? Yes No _X |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| | |
| Remarks: | |
| | |
| | |
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| | |

| Free Stratum (Plot size: 30ft ²) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: | | |
|---|---------------------|----------------------|---------------------|---|------------|--|
| (1.00.0126) | 70 00001 | Орсоюз: | Otatas | Bollinance rest worksheet. | | |
| 2. | | | | Number of Dominant Species That Are OBL, FACW, or FAC: 0 | (A) | |
| 3. I. | _ | | | Total Number of Dominant Species Across All Strata: 2 | (B) | |
| 5. 6. | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% | (A/B | |
| 7. | | | | Prevalence Index worksheet: | | |
| | | =Total Cover | - | Total % Cover of: Multiply I | by: | |
| Sapling/Shrub Stratum (Plot size: 15ft ² |) | | | | 0 | |
| . Prunus americana | | Yes | UPL | FACW species 0 x 2 = | 0 | |
| | | | | | 0 | |
| | | | | | 40 | |
| | | | | | 00 | |
| - | | | | | 40 (E | |
| | | | | Prevalence Index = $B/A = 4.3$ | | |
| - | | | | Hydrophytic Vegetation Indicators: | | |
| | 20 | =Total Cover | | 1 - Rapid Test for Hydrophytic Vegetation | | |
| erb Stratum (Plot size: 5ft ²) | | | | 2 - Dominance Test is >50% | | |
| . Andropogon virginicus | 20 | Yes | FACU | - <i>-</i> - | | |
| Daucus carota | | No | FACU | 4 - Morphological Adaptations ¹ (Provide | | |
| Dipsacus fullonum | | No | FACU | data in Remarks or on a separate sheet) | | |
| Solidago canadensis | | No | FACU | Problematic Hydrophytic Vegetation¹ (Explain) | | |
| | | | | 1. | | |
| · | | | | ¹ Indicators of hydric soil and wetland hydrolog be present, unless disturbed or problematic. | y must | |
| | | | | Definitions of Vegetation Strata: | | |
| | | | | _ | | |
| | | | | Tree – Woody plants 3 in. (7.6 cm) or more in at breast height (DBH), regardless of height. | diamete | |
| 0 | | | | Sapling/shrub – Woody plants less than 3 in. | . DBH | |
| 1 | | | | and greater than or equal to 3.28 ft (1 m) tall. | | |
| 2 | | | | Herb – All herbaceous (non-woody) plants, re | ardles | |
| | 35 | =Total Cover | | of size, and woody plants less than 3.28 ft tall | | |
| /oody Vine Stratum (Plot size: 15ft ² | _) | | | Woody vines – All woody vines greater than height. | 3.28 ft ir | |
| | | | | noight. | | |
| | | | | Hydrophytic | | |
| | | | | Vegetation | | |
| | _ | =Total Cover | | Present? Yes No X | | |
| | | - I Olai Covei | | | | |

SOIL Sampling Point UP-A

| Profile Des | cription: (Describe t | o the de | pth needed to docu | ment th | ne indica | ator or co | onfirm the absence o | f indicators.) |
|--|-----------------------|-----------|--|---|--|--------------------------------|---|--|
| Depth | Matrix | | Redox | c Featur | es | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 3/2 | 98 | 10YR 5/6 | 2 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 8-22 | 10YR 4/1 | 98 | 10YR 5/6 | 2 | | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | | | <u> </u> | <u> </u> | <u> </u> | | |
| | | | | _ | | <u> </u> | | |
| ¹ Type: C=C | oncentration, D=Depl | etion. RM | | IS=Mas | ked San | d Grains | ² l ocation: P | PL=Pore Lining, M=Matrix. |
| - Black H - Hydroge - Stratifie X Deplete - Thick D - Sandy N - Sandy F - Stripped - Dark Su | | | - Polyvalue Belomur MLRA 149B) - Thin Dark Surfa - High Chroma S - Loamy Mucky I - Loamy Gleyed X Depleted Matrix - Redox Dark Surfa - Depleted Dark - Redox Depress - Marl (F10) (LRI | ace (S9) Fands (S Mineral Matrix (K (F3) Inface (F Surface Sions (F6 R K, L) | (LRR R 611) (LRI (F1) (LRI F2) 66) (F7) | , MLRA 1 R K, L) R K, L) | Indicators for 2 cm Mu - 2 cm Mu - Coast Pr - 5 cm Mu - Polyvalu - Thin Dar - Iron-Mar - Piedmor - Mesic Sp - Red Par - Very Sha - Other (E | or Problematic Hydric Soils ³ : uck (A10) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R) ucky Peat or Peat (S3) (LRR K, L, R) ue Below Surface (S8) (LRR K, L) rk Surface (S9) (LRR K, L) nganese Masses (F12) (LRR K, L, R) nt Floodplain Soils (F19) (MLRA 149B) podic (TA6) (MLRA 144A, 145, 149B) tent Material (F21) allow Dark Surface (F22) explain in Remarks) |
| Type: Depth (i | | | | | | | Hydric Soil Presei | nt? Yes_X No |
| Remarks: | | | | | | | | |

| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|---|---|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: WL-B |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| - ' - | relief (concave, convex,etc): Concave Slope %: 0 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.061839 | Long: -82.906412 Datum: 1983 |
| | |
| Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes (BeB) | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No, Soil No, or Hydrology No significantly distur | |
| Are Vegetation No, Soil No, or Hydrology No naturally problems | atic? (If needed, explain any answers in Remarks.) |
| SUMMARY OF FINDINGS – Attach site map showing sam | npling point locations, transects, important features, etc. |
| Lhudranhudia Variation Presenta | In the Complet Area |
| Hydrophytic Vegetation Present? Yes X No Yes X No Yes X No | Is the Sampled Area within a Wetland? Yes X No |
| Wetland Hydrology Present? Yes X No | If yes, optional Wetland Site ID: |
| Remarks: (Explain alternative procedures here or in a separate report.) | ii yoo, optional wotalia ette ib. |
| Remarks. (Explain alternative procedures here of in a separate report.) | |
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| 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) |
| X Surface Water (A1) - Water-Stained Leaves (| . , |
| - High Water Table (A2) - Aquatic Fauna (B13) | - Moss Trim Lines (B16) |
| X Saturation (A3) - Marl Deposits (B15) | - Dry-Season Water Table (C2) |
| - Water Marks (B1) - Hydrogen Sulfide Odor | |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | <u> </u> |
| - Drift Deposits (B3) - Presence of Reduced Ir | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction is | |
| - Iron Deposits (B5) - Iron Deposits (B5) - Thin Muck Surface (C7) | |
| - Inundation Visible on Aerial Imagery (B7) - Other (Explain in Remai | |
| Sparsely Vegetated Concave Surface (B8) | rks) X Microtopographic Relief (D4) X FAC-Neutral Test (D5) |
| | A FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes X No Depth (inches) | |
| Water Table Present? Yes No X Depth (inches) | |
| Saturation Present? Yes X No Depth (inches) | : 8 Wetland Hydrology Present? Yes X No |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
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| Remarks: | |
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VEGETATION – Use scientific names of plants. Sampling Point: WL-B Absolute Dominant Indicator <u>Tree Stratum</u> (Plot size: ____30ft²) Species? % Cover Status **Dominance Test worksheet:** Number of Dominant Species That 2. Are OBL, FACW, or FAC: 4 (A) 3. **Total Number of Dominant** (B) 4. Species Across All Strata: 5. Percent of Dominant Species That 6. Are OBL, FACW, or FAC: 100.0% (A/B) Prevalence Index worksheet: Multiply by: =Total Cover Total % Cover of: Sapling/Shrub Stratum (Plot size: 15ft² OBL species x 1 = Quercus palustris 10 **FACW FACW** species 20 x 2 = 0 2. FAC species x 3 = 0 0 x 4 = 3. FACU species 4. UPL species 0 x 5 = 5. Column Totals 55 (A) 75 Prevalence Index = B/A =1.36 6. **Hydrophytic Vegetation Indicators:** 7. 10 =Total Cover 1 - Rapid Test for Hydrophytic Vegetation Herb Stratum (Plot size: 5ft² X 2 - Dominance Test is >50% Juncus effusus 20 Yes OBL X 3 - Prevalence Index is ≤3.0¹ 5 4 - Morphological Adaptations¹ (Provide 2. Scirpus cyperinus OBL No data in Remarks or on a separate sheet) 3. Carex Iurida 10 Yes OBL Carex vulpinoidea 10 Yes **FACW** Problematic Hydrophytic Vegetation¹ (Explain) 5. ¹Indicators of hydric soil and wetland hydrology must 6. be present, unless disturbed or problematic. **Definitions of Vegetation Strata:** 7. 8. Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless 45 =Total Cover of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15ft² Woody vines - All woody vines greater than 3.28 ft in 1. height. 2. Hydrophytic 3. Vegetation Present? No _ Yes X =Total Cover Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point WL-B

| Profile Desc | cription: (Describe t | o the de | pth needed to docu | ıment tl | ne indica | tor or co | onfirm the absence o | f indicators.) |
|---|-----------------------|-----------|--|---|--|--------------------------------|--|--|
| Depth | Matrix | | Redox | x Featur | es | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 3/2 | 95 | 10YR 5/8 | 5 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 8-16 | 10YR 4/2 | 95 | 10YR 5/8 | 5 | С | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 95 | 10YR 5/6 | 5 | <u>C</u> | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | <u> </u> | | <u> </u> | <u>_</u> | | | |
| i | | | | | | | | |
| ¹Type: C=C | oncentration, D=Depl | etion, RI | M=Reduced Matrix, M | /IS=Mas | ked Sand | d Grains. | ² Location: P | L=Pore Lining, M=Matrix. |
| - Black H - Hydroge - Stratified X Depleted - Thick Do - Sandy N - Sandy F - Stripped - Dark Su | | | - Polyvalue Belo MLRA 149B; - Thin Dark Surfa - High Chroma S - Loamy Mucky I - Loamy Gleyed X Depleted Matrix - Redox Dark Su - Depleted Dark Redox Depress - Marl (F10) (LRI |) ace (S9) Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F6 R K, L) | (LRR R 611) (LRI (F1) (LRI F2) 66) (F7) | , MLRA 1 R K, L) R K, L) | - 2 cm Mu - Coast Pi - 5 cm Mu - Polyvalu - Thin Dar - Iron-Mar - Piedmor - Mesic Si - Red Par - Very Sha - Other (E | or Problematic Hydric Soils ³ : ack (A10) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R) acky Peat or Peat (S3) (LRR K, L, R) be Below Surface (S8) (LRR K, L) ck Surface (S9) (LRR K, L) aganese Masses (F12) (LRR K, L, R) at Floodplain Soils (F19) (MLRA 149B) podic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) allow Dark Surface (F22) xplain in Remarks) |
| Type: Depth (i | | | | | | | Hydric Soil Presei | nt? Yes <u>X</u> No |
| Remarks: | | | | | | | | |
| | | | | | | | | |

| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|---|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-B |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| • • • • | relief (concave, convex,etc): Convex Slope %: 2 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.06186 | Long: -82.906766 Datum: 1983 |
| | |
| Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes (BeB) | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No, Soil No, or Hydrology No significantly distur | |
| Are Vegetation No, Soil No, or Hydrology No naturally problems | atic? (If needed, explain any answers in Remarks.) |
| SUMMARY OF FINDINGS – Attach site map showing same | pling point locations, transects, important features, etc. |
| Lhydrophytic Vegetation Procest? | le the Compled Area |
| Hydrophytic Vegetation Present? Hydric Soil Present? Yes No X Yes No X | Is the Sampled Area within a Wetland? Yes No_X_ |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: |
| Remarks: (Explain alternative procedures here or in a separate report.) | ii yoo, optional worlding one ib. |
| Remarks. (Explain alternative procedures here of in a separate report.) | |
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| 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) |
| - Surface Water (A1) - Water-Stained Leaves (| |
| - High Water Table (A2) - Aquatic Fauna (B13) | - Moss Trim Lines (B16) |
| - Saturation (A3) - Saturation (A3) - Marl Deposits (B15) | - Moss Hill Ellies (B10) - Dry-Season Water Table (C2) |
| - Water Marks (B1) - Hydrogen Sulfide Odor | |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | |
| - Drift Deposits (B3) - Presence of Reduced Ir | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction is | |
| - Iron Deposits (B5) - Iron Deposits (B5) - Thin Muck Surface (C7) | |
| - Inundation Visible on Aerial Imagery (B7) - Other (Explain in Remai | |
| - Sparsely Vegetated Concave Surface (B8) | - FAC-Neutral Test (D5) |
| | - 1 AC-Neutral Test (D3) |
| Field Observations: | |
| Surface Water Present? Yes No X Depth (inches) | |
| Water Table Present? Yes No X Depth (inches) | |
| Saturation Present? Yes No X Depth (inches) | : Wetland Hydrology Present? Yes No_X |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
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| Remarks: | |
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| /EGETATION - | Use scientific names of plants. | |
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| LOLIAIIOI | OSC SCICITING HAIRCS OF Plants. | |

| 2042 | | | | Sampling Point: | |
|---|---------------------|----------------------|---------------------|---|-----------------------------|
| Tree Stratum (Plot size: 30ft ²) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: | |
| Pyrus calleryana | 10 | Yes | UPL | Number of Dominant Species That | |
| 2. | | | | Are OBL, FACW, or FAC: | 0 (A) |
| 3. | | | | Total Number of Dominant | |
| 4. | · · | | | Species Across All Strata: | 9 (B) |
| 5. | | | | · - · | |
| 6. | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: | 0.0% (A/E |
| 7. | | | | Prevalence Index worksheet: | () |
| | 10 | =Total Cover | | • | Multiply by: |
| Sapling/Shrub Stratum (Plot size: 15ft ²) | | , -1010. 00.0. | | | 1 = 0 |
| 1. Prunus americana | 20 | Yes | UPL | FACW species 0 x 2 | |
| | 20 | | UPL | · ' | B = 0 |
| 7 | | Yes | UFL | · | |
| 3 | | | | FACU species 75 x 4 | |
| 4 | | | | UPL species 50 x 5 | |
| 5 | | | | Column Totals 125 (A) | |
| 6 | | | | Prevalence Index = B/A = | 4.40 |
| 7 | | | | Hydrophytic Vegetation Indicators | S: |
| | 40 | =Total Cover | | 1 - Rapid Test for Hydrophytic Ve | egetation |
| Herb Stratum (Plot size: 5ft ²) | | | | 2 - Dominance Test is >50% | |
| 1. Andropogon virginicus | 20 | Yes | FACU | 3 - Prevalence Index is ≤3.0 ¹ | |
| 2. Daucus carota | 10 | Yes | FACU | 4 - Morphological Adaptations ¹ (F | |
| 3. Dipsacus fullonum | 10 | Yes | FACU | data in Remarks or on a sepa | rate sheet) |
| 4. Solidago canadensis | 5 | No | FACU | Problematic Hydrophytic Vegeta | tion ¹ (Explain) |
| 5. Securigera varia | 10 | Yes | FACU | 1. | |
| 6. Festuca rubra | 10 | Yes | FACU | Indicators of hydric soil and wetland be present, unless disturbed or prob | |
| 7. Trifolium repens | 10 | Yes | FACU | Definitions of Vegetation Strata: | lomano. |
| 8. | | | 17.00 | | |
| · | | | | Tree – Woody plants 3 in. (7.6 cm) o | |
| 9 | | | | at breast height (DBH), regardless o | f height. |
| 10 | | | | Sapling/shrub – Woody plants less | |
| 11 | | | | and greater than or equal to 3.28 ft (| 1 m) tall. |
| 12 | | | | Herb – All herbaceous (non-woody) | |
| _ | 75 | =Total Cover | | of size, and woody plants less than 3 | 3.28 ft tall. |
| Woody Vine Stratum (Plot size: 15ft ²) | | | | Woody vines – All woody vines grea | ater than 3.28 ft i |
| 1 | | | | height. | |
| 2 | | | | | |
| 3 | | | | Hydrophytic Vegetation | |
| | | _ | | • | No X |
| 4 | | | | | |
| 4 | | =Total Cover | | | |

SOIL Sampling Point UP-B

| Profile Desc | ription: (Describe to | o the de | epth needed to docu | ıment t | he indica | tor or co | confirm the absence of indicators.) | |
|-------------------------|-------------------------------|--------------|---|----------|-------------------|------------------|---|----|
| Depth | Matrix | | Redox | x Featur | es | | · | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture Remarks | |
| 0-8 | 10YR 4/4 | 100 | | | | | Loamy/Clayey | |
| 8-22 | 10YR 4/3 | 100 | | | | | Loamy/Clayey | |
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| ¹ Type: C=Co | oncentration, D=Deple | etion, RI | M=Reduced Matrix, N | /IS=Mas | ked Sand | d Grains. | s. ² Location: PL=Pore Lining, M=Matrix. | |
| Hydric Soil I | ndicators: | | | | | | Indicators for Problematic Hydric Soils ³ : | |
| - Histosol | ` ' | | - Polyvalue Belo | | ce (S8) (I | LRR R, | 2 cm Muck (A10) (LRR K, L, MLRA 149B |) |
| | ipedon (A2) | | MLRA 149B | | | | - Coast Prairie Redox (A16) (LRR K, L, R) | |
| - Black His | | | - Thin Dark Surfa | | | | | R) |
| | n Sulfide (A4) Layers (A5) | | High Chroma SLoamy Mucky I | | | - | Polyvalue Below Surface (S8) (LRR K, L) | |
| | Below Dark Surface | (Δ11) | - Loamy Gleyed | | | X K, L) | Thin Dark Surface (S9) (LRR K, L) - Iron-Manganese Masses (F12) (LRR K, L | R) |
| | rk Surface (A12) | (\(\alpha\)) | - Depleted Matri: | | 1 2) | | - Piedmont Floodplain Soils (F19) (MLRA 1 | |
| | ucky Mineral (S1) | | - Redox Dark Su | | - 6) | | - Mesic Spodic (TA6) (MLRA 144A, 145, 14 | |
| | leyed Matrix (S4) | | - Depleted Dark | | | | - Red Parent Material (F21) | , |
| - Sandy R | edox (S5) | | - Redox Depress | sions (F | 8) | | Very Shallow Dark Surface (F22) | |
| Stripped | Matrix (S6) | | Marl (F10) (LR | R K, L) | | | Other (Explain in Remarks) | |
| - Dark Sur | face (S7) | | | | | | | |
| 31 | Character de la communicación | | | | | | ation and an appellance of a | |
| | nydropnytic vegetation | on and v | vetiana nyarology mi | ıst be p | resent, ur | niess aist | sturbed or problematic. | |
| Type: | , | | | | | | | |
| Depth (in | nches): | | | | | | Hydric Soil Present? Yes No X | |
| Remarks: | | | | | | | | _ |
| | had small shale/grav | el intern | nized with matrix. | | | | | |
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| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|---|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: WL-C |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| • • • • | relief (concave, convex,etc): Concave Slope %: 0 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.062155 | Long: -82.906866 Datum: 1983 |
| · · · · · · · · · · · · · · · · · · · | |
| Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes (BeB) | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No, Soil No, or Hydrology No significantly distur | |
| Are Vegetation No, Soil No, or Hydrology No naturally problems | atic? (If needed, explain any answers in Remarks.) |
| SUMMARY OF FINDINGS – Attach site map showing same | pling point locations, transects, important features, etc. |
| Lhudranhudia Varatetian Presenta | In the Complet Avec |
| Hydrophytic Vegetation Present? Yes X No Yes X No Yes X No | Is the Sampled Area within a Wetland? Yes X No |
| Wetland Hydrology Present? Yes X No | If yes, optional Wetland Site ID: |
| Remarks: (Explain alternative procedures here or in a separate report.) | ii yoo, optional vooland olio ib. |
| Tremains. (Explain alternative procedures here of in a separate report.) | |
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| 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) |
| X Surface Water (A1) Water-Stained Leaves (| B9) X Drainage Patterns (B10) |
| - High Water Table (A2) - Aquatic Fauna (B13) | Moss Trim Lines (B16) |
| X Saturation (A3) — Marl Deposits (B15) | Dry-Season Water Table (C2) |
| Water Marks (B1) Hydrogen Sulfide Odor | |
| Sediment Deposits (B2) Oxidized Rhizospheres | |
| Drift Deposits (B3) Presence of Reduced In | |
| Algal Mat or Crust (B4) Recent Iron Reduction in | n Tilled Soils (C6) X Geomorphic Position (D2) |
| Iron Deposits (B5) Thin Muck Surface (C7) | |
| Inundation Visible on Aerial Imagery (B7) Other (Explain in Remai | |
| Sparsely Vegetated Concave Surface (B8) | X FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes X No Depth (inches) | |
| Water Table Present? Yes No X Depth (inches) | |
| Saturation Present? Yes X No Depth (inches) | : 8 Wetland Hydrology Present? Yes X No |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| Remarks: | |
| Remarks: | |
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VEGETATION – Use scientific names of plants. Sampling Point: WL-C Absolute Dominant Indicator <u>Tree Stratum</u> (Plot size: 30ft²) Species? % Cover Status **Dominance Test worksheet:** Number of Dominant Species That 2. Are OBL, FACW, or FAC: 3 (A) 3. **Total Number of Dominant** (B) 4. Species Across All Strata: 5. Percent of Dominant Species That 6. Are OBL, FACW, or FAC: 100.0% (A/B) Prevalence Index worksheet: Multiply by: =Total Cover Total % Cover of: Sapling/Shrub Stratum (Plot size: 15ft² OBL species x 1 = **FACW** species 10 x 2 = 0 FAC species x 3 = 0 0 x 4 = 3. FACU species 4. UPL species 0 x 5 = 5. Column Totals 45 (A) 55 1.22 Prevalence Index = B/A =6. **Hydrophytic Vegetation Indicators:** 1 - Rapid Test for Hydrophytic Vegetation =Total Cover Herb Stratum (Plot size: 5ft²) X 2 - Dominance Test is >50% Juncus effusus 20 Yes OBL X 3 - Prevalence Index is ≤3.0¹ 5 4 - Morphological Adaptations¹ (Provide 2. Scirpus cyperinus OBL No data in Remarks or on a separate sheet) 3. Carex Iurida 10 Yes OBL Carex vulpinoidea 10 Yes **FACW** Problematic Hydrophytic Vegetation¹ (Explain) 5. ¹Indicators of hydric soil and wetland hydrology must 6. be present, unless disturbed or problematic. **Definitions of Vegetation Strata:** 7. 8. Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless 45 =Total Cover of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15ft² Woody vines - All woody vines greater than 3.28 ft in 1. height. Hydrophytic 3. Vegetation No ___ Present? Yes X =Total Cover Remarks: (Include photo numbers here or on a separate sheet.)

Page 2

SOIL Sampling Point WL-C

| Profile Desc | cription: (Describe | to the de | pth needed to docu | ment tl | ne indica | ator or co | onfirm the absence of indicators.) |
|---------------------------|-----------------------|-----------|-------------------------------|----------|-------------------|------------------|---|
| Depth | Matrix | | Redox | Featur | es | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture Remarks |
| 0-8 | 10YR 3/2 | 95 | 10YR 5/8 | 5 | С | M | Loamy/Clayey Prominent redox concentrations |
| 8-16 | 10YR 4/2 | 95 | 10YR 5/8 | 5 | <u>C</u> | <u>M</u> | Loamy/Clayey Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 95 | 10YR 5/6 | 5 | С | M | Loamy/Clayey Prominent redox concentrations |
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| | oncentration, D=Depl | etion, RN | M=Reduced Matrix, M | S=Mas | ked Sand | d Grains. | |
| Hydric Soil | | | | | | | Indicators for Problematic Hydric Soils ³ : |
| - Histosol | | | - Polyvalue Belov | v Surfa | ce (S8) (I | LRR R, | - 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| - HISTIC E | pipedon (A2) | | MLRA 149B) - Thin Dark Surfa | re (S0) | (I DD D | MIDA | - Coast Prairie Redox (A16) (LRR K, L, R) - 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| | en Sulfide (A4) | | - High Chroma S | | | | - Polyvalue Below Surface (S8) (LRR K, L) |
| | d Layers (A5) | | - Loamy Mucky N | | | - | - Thin Dark Surface (S9) (LRR K, L) |
| | d Below Dark Surface | e (A11) | - Loamy Gleyed I | | | , | - Iron-Manganese Masses (F12) (LRR K, L, R) |
| - Thick Da | ark Surface (A12) | | X Depleted Matrix | (F3) | | | - Piedmont Floodplain Soils (F19) (MLRA 149B) |
| | Mucky Mineral (S1) | | - Redox Dark Su | | | | Mesic Spodic (TA6) (MLRA 144A, 145, 149B) |
| | Gleyed Matrix (S4) | | Depleted Dark S | | | | - Red Parent Material (F21) |
| | Redox (S5) | | - Redox Depress | , | 8) | | - Very Shallow Dark Surface (F22) |
| - Simpped | Matrix (S6) | | Marl (F10) (LRF | K N, L) | | | Other (Explain in Remarks) |
| Bark ou | mace (Gr) | | | | | | |
| ³ Indicators o | f hydrophytic vegetat | ion and v | vetland hydrology mu | st be pi | resent, ur | nless dist | turbed or problematic. |
| Restrictive | Layer (if observed): | | | | | | |
| Type: | | | | | | | |
| Depth (i | nches): | | | | | | Hydric Soil Present? Yes X No |
| Remarks: | | | | | | | |
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| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|---|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-C |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| • • • • | relief (concave, convex,etc): Convex Slope %: 2 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.062086 | Long: -82.907012 Datum: 1983 |
| | |
| Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes (BeB) | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No, Soil No, or Hydrology No significantly distur | |
| Are Vegetation No, Soil No, or Hydrology No naturally problems | atic? (If needed, explain any answers in Remarks.) |
| SUMMARY OF FINDINGS – Attach site map showing sam | pling point locations, transects, important features, etc. |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area |
| Hydric Soil Present? Yes No X | within a Wetland? Yes No _X_ |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: |
| Remarks: (Explain alternative procedures here or in a separate report.) | |
| (27.61.11) | |
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| 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) |
| Surface Water (A1) Water-Stained Leaves (| |
| - High Water Table (A2) - Aquatic Fauna (B13) | Moss Trim Lines (B16) |
| Saturation (A3) Marl Deposits (B15) | Dry-Season Water Table (C2) |
| Water Marks (B1) Hydrogen Sulfide Odor | |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | |
| - Drift Deposits (B3) - Presence of Reduced Ir | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction i | |
| - Iron Deposits (B5) - Thin Muck Surface (C7) | |
| Inundation Visible on Aerial Imagery (B7) Other (Explain in Remai | |
| Sparsely Vegetated Concave Surface (B8) | FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes No X Depth (inches) | |
| Water Table Present? Yes No X Depth (inches) | |
| Saturation Present? Yes No X Depth (inches) | : Wetland Hydrology Present? Yes No _X |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| Demodus | |
| Remarks: | |
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| | | Dominant | Indicator | | | |
|---|---------------|--------------|-----------|--|-----------------------------|-----------|
| ree Stratum (Plot size:30ft ²) | % Cover | Species? | Status | Dominance Test worksheet: | | |
| | | | | Number of Dominant Species That Are OBL, FACW, or FAC: | 0 | (A) |
| | | | | Total Number of Dominant Species Across All Strata: | 7 | _(B) |
| | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: | 0.0% | _(A/E |
| | | | | Prevalence Index worksheet: | | |
| | | =Total Cover | | Total % Cover of: | Multiply by: | |
| apling/Shrub Stratum (Plot size:15ft ²) | | | | OBL species 0 x | 1 = 0 | |
| Prunus americana | 20 | Yes | UPL | FACW species 0 x | 2 = 0 | |
| | | | | FAC species 0 x | 3 = 0 | |
| | | | | FACU species 75 x | 4 = 300 | |
| | | | | - | 5 = 100 | _ |
| | | | | Column Totals 95 (/ | A) 400 | — (E |
| | | | | Prevalence Index = B/A = | 4.21 | ` |
| | | | | Hydrophytic Vegetation Indicato | rs: | |
| | 20 | =Total Cover | | 1 - Rapid Test for Hydrophytic | Vegetation | |
| erb Stratum (Plot size: 5ft ²) | | - | | 2 - Dominance Test is >50% | | |
| Andropogon virginicus | 20 | Yes | FACU | 3 - Prevalence Index is ≤3.0 ¹ | | |
| Daucus carota | 10 | Yes | FACU | 4 - Morphological Adaptations ¹ | (Provide | |
| Dipsacus fullonum | 10 | Yes | FACU | data in Remarks or on a sep | arate sheet) | |
| Solidago canadensis | 5 | No | FACU | Problematic Hydrophytic Veget | ation ¹ (Explain | n) |
| Securigera varia | 10 | Yes | FACU | 1 In directors of broduin cell and wester | | |
| Festuca rubra | 10 | Yes | FACU | ¹ Indicators of hydric soil and wetlar be present, unless disturbed or pro | | nust |
| Trifolium repens | 10 | Yes | FACU | Definitions of Vegetation Strata: | | |
| | | | | Tree Meady plants 2 in (7.6 am) | or more in di | - m o t o |
| | | | | Tree – Woody plants 3 in. (7.6 cm) at breast height (DBH), regardless | | imete |
|). 1 | | | | Sapling/shrub – Woody plants les and greater than or equal to 3.28 ft | | ВН |
| 2 | | <u> </u> | | Herb – All herbaceous (non-woody | | rdless |
| | 75 | =Total Cover | | of size, and woody plants less than | 13.28 ft tall. | |
| oody Vine Stratum (Plot size: 15ft ²) | | | | Woody vines – All woody vines graheight. | eater than 3.2 | 8 ft in |
| | | | | | | |
| | | | | Hydrophytic Vegetation | | |
| | | | | Present? Yes | No_X | |
| | | =Total Cover | | | | |
| emarks: (Include photo numbers here or on a sepa | arate sheet.) | | | | | |

Page 2

SOIL Sampling Point UP-C

| Profile Des | cription: (Describe to | the de | pth needed to docu | ıment th | ne indica | tor or co | onfirm the absence of indica | tors.) |
|---------------------------|-------------------------------|-----------|---|-----------------|--------------------|------------------|--------------------------------|--|
| Depth | Matrix | | Redo | x Featur | | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 4/4 | 100 | | | | | Loamy/Clayey | |
| 8-22 | 10YR 4/3 | 100 | | | | | Loamy/Clayey | |
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| ¹ Type: C=C | oncentration, D=Deple | etion, RM | I=Reduced Matrix, N | /IS=Mas | ked Sand | d Grains. | ² Location: PL=Pore | Lining, M=Matrix. |
| Hydric Soil | | | | | | | | lematic Hydric Soils ³ : |
| - Histosol | | | - Polyvalue Belo | | ce (S8) (I | _RR R, | |) (LRR K, L, MLRA 149B) |
| | pipedon (A2) | | MLRA 149B | | /LDD D | MLDA | | edox (A16) (LRR K, L, R) |
| | istic (A3) en Sulfide (A4) | | Thin Dark SurfaceHigh Chroma S | | | | | at or Peat (S3) (LRR K, L, R) Surface (S8) (LRR K, L) |
| | d Layers (A5) | | - Loamy Mucky | | | - | | ce (S9) (LRR K, L) |
| | d Below Dark Surface | (A11) | - Loamy Gleyed | | | · · · · · · · | | Masses (F12) (LRR K, L, R) |
| | ark Surface (A12) | ` ' | - Depleted Matri | | , | | | plain Soils (F19) (MLRA 149B) |
| | Mucky Mineral (S1) | | - Redox Dark Su | | 6) | | | A6) (MLRA 144A, 145, 149B) |
| - Sandy C | Sleyed Matrix (S4) | | - Depleted Dark | Surface | (F7) | | - Red Parent Mate | erial (F21) |
| | Redox (S5) | | - Redox Depress | | 3) | | - Very Shallow Da | |
| | Matrix (S6) | | Marl (F10) (LR | R K, L) | | | Other (Explain in | n Remarks) |
| Dark Su | rface (S7) | | | | | | | |
| ³ Indicators o | f hydrophytic vegetation | on and w | etland hydrology mu | ist be or | esent ur | nless dist | rurbed or problematic | |
| | Layer (if observed): | on and w | chana nyarology me | aot be pi | coorn, ar | 11000 0101 | Problematic. | |
| Type: | , , , | | | | | | | |
| Depth (i | nches): | | , | | | | Hydric Soil Present? | Yes No X |
| Remarks: | | | | | | | | |
| | s had small shale/grav | el interm | ized with matrix. | | | | | |
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| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 | |
|---|--|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: WL-D | |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W | |
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| Are Vegetation No, Soil No, or Hydrology No naturally problems | atic? (If needed, explain any answers in Remarks.) | |
| SUMMARY OF FINDINGS – Attach site map showing sam | pling point locations, transects, important features, etc. | |
| Lhudranhudia Varatetian Presenta | In the Complet Area | |
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| <u> </u> | | |
| | ii yoo, optional vooland olio ib. | |
| Tremains. (Explain alternative procedures here of in a separate report.) | | |
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| 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) | |
| X Surface Water (A1) — Water-Stained Leaves (| B9) X Drainage Patterns (B10) | |
| - High Water Table (A2) - Aquatic Fauna (B13) | Moss Trim Lines (B16) | |
| X Saturation (A3) — Marl Deposits (B15) | Dry-Season Water Table (C2) | |
| | | |
| | | |
| Drift Deposits (B3) Presence of Reduced In | | |
| Algal Mat or Crust (B4) Recent Iron Reduction in | n Tilled Soils (C6) X Geomorphic Position (D2) | |
| | | |
| Inundation Visible on Aerial Imagery (B7) Other (Explain in Remai | rks) X Microtopographic Relief (D4) | |
| Sparsely Vegetated Concave Surface (B8) | X FAC-Neutral Test (D5) | |
| Field Observations: | | |
| | | |
| | | |
| Saturation Present? Yes X No Depth (inches) | : 8 Wetland Hydrology Present? Yes X No | |
| (includes capillary fringe) | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: | |
| | | |
| Demorto | Int/Owner: ms consultants, inc Section, Township, Range: 4, T2 N, R17 W morth plates of the property of the pr | |
| Remarks: | | |
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VEGETATION – Use scientific names of plants. Sampling Point: WL-D Absolute Dominant Indicator <u>Tree Stratum</u> (Plot size: 30ft²) Species? % Cover Status **Dominance Test worksheet:** Number of Dominant Species That 2. Are OBL, FACW, or FAC: 3 (A) 3. **Total Number of Dominant** (B) 4. Species Across All Strata: 5. Percent of Dominant Species That 6. Are OBL, FACW, or FAC: 100.0% (A/B) Prevalence Index worksheet: Multiply by: =Total Cover Total % Cover of: Sapling/Shrub Stratum (Plot size: 15ft² OBL species x 1 = **FACW** species 10 x 2 = 0 FAC species x 3 = 0 0 x 4 = 3. FACU species 4. UPL species 0 x 5 = 5. Column Totals 45 (A) 55 1.22 Prevalence Index = B/A =6. **Hydrophytic Vegetation Indicators:** 1 - Rapid Test for Hydrophytic Vegetation =Total Cover Herb Stratum (Plot size: 5ft²) X 2 - Dominance Test is >50% Juncus effusus 20 Yes OBL X 3 - Prevalence Index is ≤3.0¹ 5 4 - Morphological Adaptations¹ (Provide 2. Scirpus cyperinus OBL No data in Remarks or on a separate sheet) 3. Carex Iurida 10 Yes OBL Carex vulpinoidea 10 Yes **FACW** Problematic Hydrophytic Vegetation¹ (Explain) 5. ¹Indicators of hydric soil and wetland hydrology must 6. be present, unless disturbed or problematic. **Definitions of Vegetation Strata:** 7. 8. Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless 45 =Total Cover of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15ft² Woody vines - All woody vines greater than 3.28 ft in 1. height. Hydrophytic 3. Vegetation No ___ Present? Yes X =Total Cover Remarks: (Include photo numbers here or on a separate sheet.)

Page 2

SOIL Sampling Point WL-D

| Profile Desc | cription: (Describe t | o the de | pth needed to docu | ıment tl | ne indica | tor or co | onfirm the absence o | f indicators.) |
|---|-----------------------|-----------|---|---|--|--------------------------------|--|---|
| Depth | Matrix | | Redox | x Featur | es | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 3/2 | 95 | 10YR 5/8 | 5 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 8-16 | 10YR 4/2 | 95 | 10YR 5/8 | 5 | С | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 95 | 10YR 5/6 | 5 | <u>C</u> | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | | | <u> </u> | | <u> </u> | | |
| l | | | | | | | | |
| ¹Type: C=C | oncentration, D=Deple | etion, RN | M=Reduced Matrix, M | MS=Mas | ked Sand | d Grains. | ² Location: P | L=Pore Lining, M=Matrix. |
| - Black H - Hydroge - Stratified X Depleted - Thick Do - Sandy N - Sandy F - Stripped - Dark Su | | | - Polyvalue Belo MLRA 149B; - Thin Dark Surfa - High Chroma S - Loamy Mucky I - Loamy Gleyed X Depleted Matrix - Redox Dark Su - Depleted Dark - Redox Depress - Marl (F10) (LR |) ace (S9) Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F6 R K, L) | (LRR R 611) (LRI (F1) (LRI F2) 66) (F7) | , MLRA 1 R K, L) R K, L) | - 2 cm Mu - Coast Pr - 5 cm Mu - Polyvalu - Thin Dar - Iron-Mar - Piedmor - Mesic Sp - Red Par - Very Sha - Other (E | or Problematic Hydric Soils ³ : ck (A10) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R) cky Peat or Peat (S3) (LRR K, L, R) de Below Surface (S8) (LRR K, L) rk Surface (S9) (LRR K, L) nganese Masses (F12) (LRR K, L, R) nt Floodplain Soils (F19) (MLRA 149B) podic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) allow Dark Surface (F22) explain in Remarks) |
| Type: Depth (i | nches): | | | | | | Hydric Soil Presei | nt? Yes <u>X</u> No |
| Remarks: | | | | | | | | |
| | | | | | | | | |

| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|---|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-D |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| • • • • | relief (concave, convex,etc): Convex Slope %: 2 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.062449 | Long: -82.907225 Datum: 1983 |
| | |
| Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes (BeB) | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No, Soil No, or Hydrology No significantly distur | |
| Are Vegetation No, Soil No, or Hydrology No naturally problems | atic? (If needed, explain any answers in Remarks.) |
| SUMMARY OF FINDINGS – Attach site map showing sam | pling point locations, transects, important features, etc. |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area |
| Hydric Soil Present? Yes No X | within a Wetland? Yes No _X_ |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: |
| Remarks: (Explain alternative procedures here or in a separate report.) | |
| Tromaine: (Explain anomalive procedures here of in a coparate report.) | |
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| 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) |
| Surface Water (A1) Water-Stained Leaves (| |
| - High Water Table (A2) - Aquatic Fauna (B13) | Moss Trim Lines (B16) |
| Saturation (A3) Marl Deposits (B15) | Dry-Season Water Table (C2) |
| Water Marks (B1) Hydrogen Sulfide Odor | |
| Sediment Deposits (B2) Oxidized Rhizospheres | |
| Drift Deposits (B3) Presence of Reduced Ir | |
| Algal Mat or Crust (B4) Recent Iron Reduction is | |
| Iron Deposits (B5) Thin Muck Surface (C7) | |
| Inundation Visible on Aerial Imagery (B7) Other (Explain in Remai | |
| Sparsely Vegetated Concave Surface (B8) | FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes No X Depth (inches) | |
| Water Table Present? Yes No X Depth (inches) | |
| Saturation Present? Yes No X Depth (inches) | : Wetland Hydrology Present? Yes No _X |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| | |
| Remarks: | |
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| /EGETATION – Use scientific names of plants. |
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|---|

| te Dominant Species? Yes Yes | Indicator Status UPL UPL | Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: 0 | | | | |
|------------------------------|---|--|---|--|--|--|
| | | | | | | |
| Yes | UPL | | | | | |
| | | 7110 OBE, 1710W, 011710. | (A) | | | |
| | | - Total Number of Dominant | | | | |
| | | Species Across All Strata: 9 | (B) | | | |
| | | Percent of Dominant Species That | | | | |
| | | Are OBL, FACW, or FAC: 0.0% | (A/B) | | | |
| | | Prevalence Index worksheet: | | | | |
| =Total Cover | _ | Total % Cover of: Multiply by | y: | | | |
| | | OBL species 0 x 1 = 0 | | | | |
| Yes | UPL | FACW species 0 x 2 = 0 | | | | |
| | | FAC species 0 x 3 = 0 | | | | |
| <u> </u> | | FACU species 65 x 4 = 260 | 0 | | | |
| | | UPL species 50 x 5 = 250 | 0 | | | |
| | | Column Totals 115 (A) 510 | 0 (B) | | | |
| | | Prevalence Index = B/A = 4.43 | | | | |
| | | Hydrophytic Vegetation Indicators: | | | | |
| =Total Cover | | 1 - Rapid Test for Hydrophytic Vegetation | | | | |
| _ | | 2 - Dominance Test is >50% | | | | |
| Yes | FACU | 3 - Prevalence Index is ≤3.0 ¹ | | | | |
| Yes | FACU | 4 - Morphological Adaptations ¹ (Provide | | | | |
| Yes | FACU | data in Remarks or on a separate sheet) | | | | |
| No | FACU | Problematic Hydrophytic Vegetation ¹ (Explain) | | | | |
| Yes | FACU | 1 Indicators of hydric soil and wetland hydrology | muet | | | |
| Yes | FACU | be present, unless disturbed or problematic. | | | | |
| Yes | FACU | Definitions of Vegetation Strata: | | | | |
| | | Troe - Woody plants 3 in (7.6 cm) or more in (| diameter | | | |
| | | at breast height (DBH), regardless of height. | Латносо. | | | |
| | | Sanling/shrub - Woody plants less than 3 in | DRH | | | |
| | | and greater than or equal to 3.28 ft (1 m) tall. | ווטט | | | |
| | | Lack All horbaceous (non-woody) plants rec | ordlage | | | |
| =Total Cover | | of size, and woody plants less than 3.28 ft tall. | ,arui c ss | | | |
| | | Woody vines . All woody vines greater than 3 | າດ ft in | | | |
| | | height. | .20 11 111 | | | |
| | | | | | | |
| | | Hydrophytic | | | | |
| | | Present? Yes No X | | | | |
| | | · — — | | | | |
| | Yes =Total Cover Yes Yes Yes Yes Yes Yes Yes Y | Yes UPL =Total Cover Yes FACU Yes FACU No FACU Yes FACU Yes FACU Yes FACU Yes FACU Yes FACU Yes FACU | Are OBL, FACW, or FAC: 0.0% Prevalence Index worksheet: Total % Cover of: Multiply by OBL species 0 x 1 = 0 FACW species 0 x 2 = 0 FAC species 0 x 3 = 0 FACU species 65 x 4 = 266 UPL species 50 x 5 = 256 Column Totals 115 (A) 510 Prevalence Index = B/A = 4.43 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation Yes FACU Yes F | | | |

SOIL Sampling Point UP-D

| Profile Desc | ription: (Describe to | the de | pth needed to docu | ıment th | ne indica | tor or co | confirm the absence of indicators.) | |
|----------------------------|------------------------|-----------|------------------------|-----------|--------------------|------------------|--|----|
| Depth | Matrix | | | k Featur | | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture Remarks | _ |
| 0-8 | 10YR 4/4 | 100 | | | | | Loamy/Clayey | |
| 8-22 | 10YR 4/3 | 100 | | | | | Loamy/Clayey | |
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| | | | | | | | | |
| ¹Type: C=Co | ncentration, D=Deple | etion, RM | 1=Reduced Matrix, N | 1S=Mas | ked Sand | Grains. | s. ² Location: PL=Pore Lining, M=Matrix. | |
| Hydric Soil I | ndicators: | | | | | | Indicators for Problematic Hydric Soils ³ : | |
| - Histosol (| (A1) | | - Polyvalue Belo | | ce (S8) (I | _RR R, | | |
| | ipedon (A2) | | MLRA 149B | | | | Coast Prairie Redox (A16) (LRR K, L, R) | |
| - Black His | | | - Thin Dark Surfa | | | | | |
| | n Sulfide (A4) | | - High Chroma S | | | - | Polyvalue Below Surface (S8) (LRR K, L) | |
| | Layers (A5) | (* 4 4) | Loamy Mucky | | | R K, L) | - Thin Dark Surface (S9) (LRR K, L) | |
| | Below Dark Surface | (A11) | - Loamy Gleyed | | F2) | | - Iron-Manganese Masses (F12) (LRR K, L, R | |
| | rk Surface (A12) | | Depleted Matri | | (0) | | Piedmont Floodplain Soils (F19) (MLRA 149 | |
| | ucky Mineral (S1) | | - Redox Dark Su | | | | - Mesic Spodic (TA6) (MLRA 144A, 145, 149E | 5) |
| | eyed Matrix (S4) | | - Depleted Dark | | ` ' | | - Red Parent Material (F21) | |
| | edox (S5) | | - Redox Depress | | o) | | - Very Shallow Dark Surface (F22) | |
| | Matrix (S6) | | Marl (F10) (LR | R K, L) | | | Other (Explain in Remarks) | |
| Dark Sur | race (57) | | | | | | | |
| ³ Indicators of | hydrophytic vegetation | on and w | vetland hydrology mu | ıst be pr | esent, ur | nless dist | sturbed or problematic. | |
| | ayer (if observed): | | | • | | | | |
| Type: | | | | | | | | |
| Depth (in | ches): | | | | | | Hydric Soil Present? Yes No X | |
| Remarks: | | | | | | | | |
| Soil samples | had small shale/grav | el interm | ized with matrix. | | | | | |
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| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|---|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: WL-E |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| | relief (concave, convex,etc): Concave Slope %: 0 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.064116 | Long: -82.907213 Datum: 1983 |
| Soil Map Unit Name: Bennington silt loam, 0 to 2 percent slopes (BeA) | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No , Soil No , or Hydrology No significantly distur | |
| Are Vegetation No , Soil No , or Hydrology No naturally problema | · — |
| SUMMARY OF FINDINGS – Attach site map showing sam | |
| Hydrophytic Vegetation Present? Yes X No | Is the Sampled Area |
| Hydric Soil Present? Yes X No | within a Wetland? Yes X No |
| Wetland Hydrology Present? Yes X No | If yes, optional Wetland Site ID: |
| | |
| HYDROLOGY | |
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required) |
| Primary Indicators (minimum of one is required; check all that apply) | |
| X Surface Water (A1) — Water-Stained Leaves (I | |
| - High Water Table (A2) - Aquatic Fauna (B13) | - Moss Trim Lines (B16) |
| X Saturation (A3) — Marl Deposits (B15) | Dry-Season Water Table (C2) |
| - Water Marks (B1) - Hydrogen Sulfide Odor (| |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | <u> </u> |
| - Drift Deposits (B3) - Presence of Reduced In | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction in | |
| - Iron Deposits (B5) - Thin Muck Surface (C7) | |
| - Inundation Visible on Aerial Imagery (B7) - Other (Explain in Remar | |
| - Sparsely Vegetated Concave Surface (B8) | X FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes X No Depth (inches): | |
| Water Table Present? Yes No X Depth (inches): | |
| Saturation Present? Yes X No Depth (inches): | :8 Wetland Hydrology Present? Yes X No |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| Remarks: | |
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| ree Stratum (Plot size: 30ft ²) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: | | |
|---|---------------------|----------------------|---------------------|--|---------|--|
| | 70 COVE | оресіез: | Status | Dominance rest worksneet. | | |
| · | | | | Number of Dominant Species That Are OBL, FACW, or FAC: 1 | (A) | |
| · | | | | Total Number of Dominant Species Across All Strata: 1 | (B) | |
| | _ | | | Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% | (A/E | |
| · | | | | Prevalence Index worksheet: | (, , , | |
| - | | =Total Cover | | Total % Cover of: Multiply by: | | |
| Sapling/Shrub Stratum (Plot size: 15ft ² |) | ! | | OBL species 35 x 1 = 35 | | |
| | , | | | FACW species 0 x 2 = 0 | _ | |
| | | | | FAC species 0 x 3 = 0 | | |
| | _ | | | FACU species 0 x 4 = 0 | | |
| | | | | UPL species 0 x 5 = 0 | _ | |
| | - | | | Column Totals 35 (A) 35 | — (E | |
| · | - | | | Prevalence Index = B/A = 1.00 | —` | |
| | | | | Hydrophytic Vegetation Indicators: | | |
| | - | =Total Cover | | 1 - Rapid Test for Hydrophytic Vegetation | | |
| lerb Stratum (Plot size: 5ft ²) | | • | | X 2 - Dominance Test is >50% | | |
| Juncus effusus | 30 | Yes | OBL | X 3 - Prevalence Index is ≤3.0 ¹ | | |
| . Scirpus cyperinus | 5 | No | OBL | 4 - Morphological Adaptations ¹ (Provide data in Remarks or on a separate sheet) | | |
| · - | _ | | | Problematic Hydrophytic Vegetation ¹ (Explain |) | |
| | _ | | | | | |
| | | | | ¹ Indicators of hydric soil and wetland hydrology m be present, unless disturbed or problematic. | ust | |
| | | | | Definitions of Vegetation Strata: | | |
| | _ | | | Tree – Woody plants 3 in. (7.6 cm) or more in dia at breast height (DBH), regardless of height. | mete | |
| - | | | | | | |
| 0. 1. | | | | Sapling/shrub – Woody plants less than 3 in. DE and greater than or equal to 3.28 ft (1 m) tall. | iΗ | |
| 2 | 35 | =Total Cover | | Herb – All herbaceous (non-woody) plants, regard of size, and woody plants less than 3.28 ft tall. | dless | |
| Voody Vine Stratum (Plot size: 15ft ² |) | | | Woody vines – All woody vines greater than 3.28 | 3 ft ir | |
| | | | | height. | | |
| · | | | | Hydrophytic | | |
| · | _ | | | Vegetation | | |
| · | | | | Present? Yes X No | | |
| | | =Total Cover | | | | |
| Remarks: (Include photo numbers here or on a sep | parate sheet.) | | | | | |

SOIL Sampling Point WL-E

| Profile Desc | cription: (Describe t | o the de | pth needed to docu | ıment tl | ne indica | tor or co | onfirm the absence o | f indicators.) |
|---|-----------------------|-----------|--|---|--|--------------------------------|--|---|
| Depth | Matrix | | Redox | x Featur | es | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 3/2 | 95 | 10YR 5/8 | 5 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 8-16 | 10YR 4/2 | 95 | 10YR 5/8 | 5 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 95 | 10YR 5/6 | 5 | <u>C</u> | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | | | | | | · | |
| | | | | | | | | |
| ¹ Type: C=C | oncentration, D=Deple | etion, RI | M=Reduced Matrix, M | /IS=Mas | ked Sand | d Grains. | ² Location: P | L=Pore Lining, M=Matrix. |
| - Black H - Hydroge - Stratified X Depleted - Thick Do - Sandy N - Sandy F - Stripped - Dark Su | | | - Polyvalue Belo MLRA 149B; - Thin Dark Surfa - High Chroma S - Loamy Mucky I - Loamy Gleyed X Depleted Matrix - Redox Dark Surfa - Depleted Dark - Redox Depress - Marl (F10) (LR |) ace (S9) Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F6 R K, L) | (LRR R 611) (LRI (F1) (LRI F2) 66) (F7) | , MLRA 1 R K, L) R K, L) | - 2 cm Mu - Coast Pi - 5 cm Mu - Polyvalu - Thin Dar - Iron-Mar - Piedmor - Mesic Si - Red Par - Very Sha - Other (E | or Problematic Hydric Soils ³ : ack (A10) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R) acky Peat or Peat (S3) (LRR K, L, R) be Below Surface (S8) (LRR K, L) ck Surface (S9) (LRR K, L) aganese Masses (F12) (LRR K, L, R) at Floodplain Soils (F19) (MLRA 149B) podic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) allow Dark Surface (F22) (xplain in Remarks) |
| Type: Depth (i | | | | | | | Hydric Soil Presei | nt? Yes <u>X</u> No |
| Remarks: | | | | | | | L | |
| | | | | | | | | |

| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|--|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-E |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
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| Are Vegetation No, Soil No, or Hydrology No naturally problems | atic? (If needed, explain any answers in Remarks.) |
| SUMMARY OF FINDINGS – Attach site map showing sam | pling point locations, transects, important features, etc. |
| Hydrophytic Vagetation Present? Vas No. Y | is the Sampled Area |
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| Tromano. (Explain alternative procedures here of in a separate report.) | |
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| 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) |
| | |
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| - | |
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| | FAC-Neutral Test (D5) |
| Field Observations: | |
| | |
| | |
| | : Wetland Hydrology Present? Yes No _X |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| antiOwner: ms consultants, inc gatoris): Mark Fedosick, Matthew Ray Section, Township, Range: 4, T 2 N, R 17 W Town (hillside, terrace, etc.): Slope Local relief (concave, convex,etc): Convex Slope %: 2 Join (LRR or MLRA): LRR M, MLRA 111E Lat: 40.064045 Long: 82.907371 Datum: 1983 ap Unit Name: Pewamo silty clay loam, low carbonate till, 0 to 2 percent slopes (Pm) NWI classification: Upland matic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.) spetiation No Soil No or Hydrology No naturally problematic? (If needed, explain any answers in Remarks.) MARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc. Pophytic Vegetation Present? Yes No X Is the Sampled Area within a Wetland? Yes No X If yes, optional Wetland Site ID: **ROLOGY** and Hydrology Indicators: Inv Indicators (minimum of one is required: check all that apply) Arks: (Explain alternative procedures here or in a separate report.) **ROLOGY** and Hydrology Indicators: Inv Indicators (minimum of one is required: check all that apply) Application (A3) Amail Deposits (B15) Application (A4) Are Reduced (A1) Are Secondary Indicators (minimum of two required) Application (A3) Amail Deposits (B15) Application (A4) Are Reduced (A1) Are Secondary Indicators (minimum of two required) Application (A4) Are Secondary Indicators (minimum of two required) Application (A4) Are Secondary Indicators (minimum of two required) Application (A4) Are Secondary Indicators (minimum of two required) Application (A4) Are Secondary Indicators (minimum of two required) Application (A4) Are Se | |
| Remarks: | |
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| ee Stratum (Plot size: 30ft ²) | % Cover | Species? | . . | | | | |
|--|---------------|--------------|------------|---|------------------------------|----------|--|
| | | Opecies: | Status | Dominance Test worksheet: | | | |
| | | | | Number of Dominant Species That Are OBL, FACW, or FAC: | t 0 | _(A) | |
| | | | | Total Number of Dominant Species Across All Strata: | 3 | _(B) | |
| | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: | 0.0% | _(A/E | |
| | | | | Prevalence Index worksheet: | - | | |
| | | =Total Cover | | Total % Cover of: | Multiply by: | | |
| apling/Shrub Stratum (Plot size: 15ft ² |) | | | OBL species 0 x | x 1 =0 | | |
| | | | | FACW species 0 x | (2 = 0 | | |
| | | | | | 3 = 0 | | |
| | | | | - | 4 = 300 | _ | |
| | | - | | - | × 5 = 0 | _ | |
| | • | - —— | | | (A) 300 | — (E | |
| | | - —— | | Prevalence Index = B/A = | · · | —` | |
| | | | | Hydrophytic Vegetation Indicato | | | |
| | | =Total Cover | | 1 - Rapid Test for Hydrophytic | | | |
| erb Stratum (Plot size: 5ft ²) | | - | | 2 - Dominance Test is >50% | 3 | | |
| Andropogon virginicus | 20 | Yes | FACU | 3 - Prevalence Index is ≤3.0 ¹ | | | |
| Trifolium repens | 10 | No | FACU | - - | | | |
| Trifolium pratense | 10 | No | FACU | data in Remarks or on a separate sheet) | | | |
| Festuca rubra | 20 | Yes | FACU | Problematic Hydrophytic Vege | tation ¹ (Explain | n) | |
| Rubus allegheniensis | 15 | Yes | FACU | | | | |
| - table anogramments | | | | ¹ Indicators of hydric soil and wetland be present, unless disturbed or pro | | nust | |
| | | | | Definitions of Vegetation Strata: | | | |
| | | | | Tree – Woody plants 3 in. (7.6 cm) or more in dia at breast height (DBH), regardless of height. | | | |
| | | | | | | | |
| · | | | | Sapling/shrub – Woody plants les and greater than or equal to 3.28 f | | ЗH | |
| 2 | 75 | =Total Cover | | Herb – All herbaceous (non-woody of size, and woody plants less than | | rdless | |
| oody Vine Stratum (Plot size: 15ft ² |) | | | Woody vines – All woody vines gr height. | reater than 3.2 | :8 ft ir | |
| | | | | | | | |
| | | - —— | | Hydrophytic | | | |
| | | - —— | | Vegetation Present? Yes | No_X_ | | |
| | | =Total Cover | | | | | |
| emarks: (Include photo numbers here or on a sep | arate cheet \ | _ | | 1 | | | |

Page 2

SOIL Sampling Point UP-E

| Profile Des | cription: (Describe to | the de | oth needed to docu | ıment th | ne indica | tor or co | onfirm the absence of indicators.) | |
|--------------|--|------------|---|-------------|--------------------|------------------|---|-----------------|
| Depth | Matrix | | Redo | x Featur | | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture Re | emarks |
| 0-8 | 10YR 4/4 | 100 | | | | | Loamy/Clayey | |
| 8-22 | 10YR 4/3 | 100 | | | | | Loamy/Clayey | |
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| ¹Type: C=C | oncentration, D=Deple | etion, RM | =Reduced Matrix, N | MS=Mas | ked Sand | Grains. | ² Location: PL=Pore Lining, M | =Matrix. |
| Hydric Soil | | · | · | | | | Indicators for Problematic H | |
| - Histosol | (A1) | | Polyvalue Belo | w Surfac | ce (S8) (I | _RR R, | 2 cm Muck (A10) (LRR K | , L, MLRA 149B) |
| | pipedon (A2) | | MLRA 149B | | | | Coast Prairie Redox (A16 | |
| | istic (A3) | | Thin Dark Surf | | | | | |
| | en Sulfide (A4) | | - High Chroma S | | | - | - Polyvalue Below Surface | |
| | d Layers (A5) | (| Loamy Mucky | | | R K, L) | Thin Dark Surface (S9) (L | |
| | d Below Dark Surface ark Surface (A12) | (A11) | - Loamy Gleyed | | F2) | | - Iron-Manganese Masses | |
| | Mucky Mineral (S1) | | Depleted Matri Redox Dark St | | 6) | | Piedmont Floodplain SoilsMesic Spodic (TA6) (MLR | |
| | Gleyed Matrix (S4) | | - Depleted Dark | | | | - Red Parent Material (F21) | |
| | Redox (S5) | | - Redox Depress | | ` ' | | Very Shallow Dark Surface | • |
| | d Matrix (S6) | | - Marl (F10) (LR | | 2) | | - Other (Explain in Remarks | ` ' |
| | ırface (S7) | | | , –, | | | | -, |
| | | | | | | | | |
| | of hydrophytic vegetation | on and w | etland hydrology mu | ıst be pr | esent, ur | nless dist | turbed or problematic. | |
| | Layer (if observed): | | | | | | | |
| Type: | | | | | | | | |
| | nches): | | | | | | Hydric Soil Present? Yes_ | No_X_ |
| Remarks: | a had amall abala/aray | ما اسام سم | inad with matrix. Are | . a b a a b | | مط امیر مط | liacent storm water detention construction | |
| Soil samples | s nad small snale/grav | ei interm | ized with matrix. Are | ea nas b | een grad | ed by ad | ljacent storm water detention construction | n |
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| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|--|---|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: WL-F |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| Landform (hillside, terrace, etc.): Dip Loca | al relief (concave, convex,etc): Concave Slope %: 0 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.064573 | Long: -82.907472 Datum: 1983 |
| Soil Map Unit Name: Pewamo silty clay loam, low carbonate till, 0 to 2 pe | ercent slopes (Pm) NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | |
| Are Vegetation No , Soil No , or Hydrology No significantly distu | |
| Are Vegetation No , Soil No , or Hydrology No naturally problem | · — — — |
| | mpling point locations, transects, important features, etc. |
| Hydrophytic Vegetation Present? Yes X No | Is the Sampled Area |
| Hydric Soil Present? Yes X No | within a Wetland? Yes X No |
| Wetland Hydrology Present? Yes X No | If yes, optional Wetland Site ID: |
| Remarks: (Explain alternative procedures here or in a separate report.) | |
| 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) |
| X Surface Water (A1) Water-Stained Leaves | |
| - High Water Table (A2) - Aquatic Fauna (B13) | - Moss Trim Lines (B16) |
| X Saturation (A3) - Marl Deposits (B15) | - Dry-Season Water Table (C2) |
| - Water Marks (B1) - Hydrogen Sulfide Odor | |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | |
| - Drift Deposits (B3) - Presence of Reduced I | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction - Iron Deposits (B5) - Thin Muck Surface (C7 | · · · · · · · · · · · · · · · · · · · |
| - Inundation Visible on Aerial Imagery (B7) - Other (Explain in Rema | |
| - Sparsely Vegetated Concave Surface (B8) | X FAC-Neutral Test (D5) |
| Field Observations: | <u> </u> |
| Surface Water Present? Yes X No Depth (inches | 3)- 2 |
| Water Table Present? Yes No X Depth (inches | |
| Water Table Present? Yes No X Depth (inches Saturation Present? Yes X No Depth (inches | |
| (includes capillary fringe) | / |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, processes of the proc | revious inspections), if available: |
| | |
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VEGETATION – Use scientific names of plants. Sampling Point: WL-F Absolute Dominant Indicator <u>Tree Stratum</u> (Plot size: ____30ft²) Species? % Cover Status **Dominance Test worksheet:** Number of Dominant Species That 2. Are OBL, FACW, or FAC: 3 (A) 3. **Total Number of Dominant** (B) 4. Species Across All Strata: 5. Percent of Dominant Species That 6. Are OBL, FACW, or FAC: 100.0% (A/B) Prevalence Index worksheet: =Total Cover Total % Cover of: Multiply by: Sapling/Shrub Stratum (Plot size: 15ft² OBL species x 1 = 10 Quercus palustris **FACW FACW** species 10 x 2 = 0 2. FAC species x 3 = 0 0 3. FACU species x 4 = 4. UPL species 0 x 5 = 5. Column Totals 50 (A) 1.20 Prevalence Index = B/A =6. **Hydrophytic Vegetation Indicators:** 7. 10 =Total Cover 1 - Rapid Test for Hydrophytic Vegetation Herb Stratum (Plot size: __ 5ft² X 2 - Dominance Test is >50% Juncus effusus 30 Yes OBL X 3 - Prevalence Index is ≤3.01 4 - Morphological Adaptations¹ (Provide 2. Scirpus cyperinus 10 OBL Yes data in Remarks or on a separate sheet) 3. 4. Problematic Hydrophytic Vegetation¹ (Explain) 5. ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 6. **Definitions of Vegetation Strata:** 7. 8. Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless 40 =Total Cover of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15ft² Woody vines - All woody vines greater than 3.28 ft in 1. height. 2. Hydrophytic 3. Vegetation Present? Yes X No ____ =Total Cover Remarks: (Include photo numbers here or on a separate sheet.)

SOIL Sampling Point WL-F

| Profile Desc | cription: (Describe t | o the de | pth needed to docu | ıment tl | ne indica | tor or co | onfirm the absence o | f indicators.) |
|---|--|-----------|--|---|--|---|--|---|
| Depth | Matrix | | Redox | x Featur | es | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 2/1 | 95 | 10YR 5/8 | 5 | С | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| 8-16 | 10YR 3/2 | 95 | 10YR 5/8 | 5 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 95 | 10YR 5/6 | 5 | <u>C</u> | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| 1 | | | | | | | 2 | |
| | oncentration, D=Depl | etion, RN | /I=Reduced Matrix, M | /IS=Mas | ked Sand | d Grains. | | L=Pore Lining, M=Matrix. |
| - Black H - Hydroge - Stratified X Depleted - Thick Do - Sandy N - Sandy F - Stripped - Dark Su | (A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1) Gleyed Matrix (S4) Redox (S5) d Matrix (S6) urface (S7) | ion and v | - Polyvalue Belo MLRA 149B) - Thin Dark Surfa - High Chroma S - Loamy Mucky I - Loamy Gleyed - Depleted Matrix - Redox Dark Su - Depleted Dark - Redox Depress - Marl (F10) (LRI |) ace (S9) Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F6 R K, L) | (LRR R 611) (LRR (F1) (LRI F2) 66) (F7) 8) | , MLRA [,] R K, L) R K, L) | - 2 cm Mu - Coast Pi - 5 cm Mu - Polyvalu - Thin Dai - Iron-Mar - Piedmor - Mesic Si - Red Par - Very Sh: - Other (E | or Problematic Hydric Soils ³ : ck (A10) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R) cky Peat or Peat (S3) (LRR K, L, R) de Below Surface (S8) (LRR K, L) rk Surface (S9) (LRR K, L) rganese Masses (F12) (LRR K, L, R) nt Floodplain Soils (F19) (MLRA 149B) podic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) allow Dark Surface (F22) explain in Remarks) |
| Type: Depth (i | Layer (if observed): | | | | | | Hydric Soil Prese | nt? Yes_X_No |
| Remarks: | | | | | | | 1 | |
| ive marke. | | | | | | | | |

| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|---|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-F |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| • | relief (concave, convex,etc): Convex Slope %: 2 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.064438 | Long: -82.907566 Datum: 1983 |
| Soil Map Unit Name: Pewamo silty clay loam, low carbonate till, 0 to 2 per | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| | |
| Are Vegetation No , Soil No , or Hydrology No significantly distur | |
| Are Vegetation No, Soil No, or Hydrology No naturally problems | |
| SUMMARY OF FINDINGS – Attach site map showing sam | pling point locations, transects, important features, etc. |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area |
| Hydric Soil Present? Yes No X | within a Wetland? Yes No _X_ |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: |
| Remarks: (Explain alternative procedures here or in a separate report.) | , |
| Tremarks. (Explain alternative procedures here of in a separate report.) | |
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| 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) |
| - Surface Water (A1) - Water-Stained Leaves (I | |
| - High Water Table (A2) - Aquatic Fauna (B13) | - Moss Trim Lines (B16) |
| - Saturation (A3) - Marl Deposits (B15) | - Dry-Season Water Table (C2) |
| - Water Marks (B1) - Hydrogen Sulfide Odor (| |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | |
| - Drift Deposits (B3) - Presence of Reduced In | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction in | |
| - Iron Deposits (B5) - Thin Muck Surface (C7) | |
| - Inundation Visible on Aerial Imagery (B7) - Other (Explain in Remark | |
| - Sparsely Vegetated Concave Surface (B8) | - FAC-Neutral Test (D5) |
| | |
| Field Observations: | |
| Surface Water Present? Yes No X Depth (inches): | |
| Water Table Present? Yes No X Depth (inches): | |
| Saturation Present? Yes No X Depth (inches): | : Wetland Hydrology Present? Yes No _X |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| Domorko | |
| Remarks: | |
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| Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A) | Tree Stratum (Plot size: 30ft ²) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: | | | |
|---|---|---------------------|-------------------|---------------------|---|------------|--|--|
| Total Number of Dominant Species Across All Strata: 5 (B Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species 0 x 2 = 0 FACW species 0 x 2 = 0 FACW species 0 x 4 = 240 UPL species 0 x 4 = 240 UPL species 0 x 4 = 240 UPL species 0 x 5 = 0 Column Totals 60 (A) 240 u Prevalence Index = B/A = 4.00 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Trifolium repens 10 Yes FACU 4 - Festuce nubra 10 Yes FACU 5 - FACU 7 - FACU 8 - FACU 9 - FACU 9 - FACU 9 - FACU 9 - FACU 1 - Rapid Test for Hydrophytic Vegetation 1 - Separate sheet) 10 Yes FACU 10 - FACU 11 - FACU 12 - FACU 13 - Prevalence Index is 33.0 1 - Prevalence Index is | 1 | | | | | (A) | | |
| Percent of Lorinnant Species Inst Are OBL, FACU, OBL, FACU, OBL, FACU, Septing/Shrub Stratum (Plot size: 15ft²) | 3. | | | | | (B) | | |
| Sapling/Shrub Stratum (Plot size: 15ft²) | | | | | • | (A/E | | |
| Column C | 7 | | | | Prevalence Index worksheet: | | | |
| FACW species | | | =Total Cover | | Total % Cover of: Multiply | by: | | |
| FAC species | Sapling/Shrub Stratum (Plot size: 15ft ²) | | - | | OBL species 0 x 1 = | 0 | | |
| FAC species 0 x 3 = 0 FACU species 60 x 4 = 240 UPL species 0 x 5 = 0 Column Totals 60 (A) 240 Prevalence Index = B/A = 4.00 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0 data in Remarks or on a separate sheet) FACU 4 - Morphological Adaptations (Provide data in Remarks or on a separate sheet) FACU 5 - FACU 7 - Problematic Hydrophytic Vegetation data in Remarks or on a separate sheet) FACU 8 - FACU 9 - Problematic Hydrophytic Vegetation data in Remarks or on a separate sheet) FACU 9 - Problematic Hydrophytic Vegetation (Explain) FACU 1 - Festuca rubra 10 Yes FACU 1 - Morphological Adaptations (Provide data in Remarks or on a separate sheet) FACU 9 - Problematic Hydrophytic Vegetation (Explain) FACU 1 - Morphological Adaptations (Provide data in Remarks or on a separate sheet) FACU 1 - Morphological Adaptations (Provide data in Remarks or on a separate sheet) FACU 2 - Problematic Hydrophytic Vegetation (Explain) FACU 2 - Problematic Hydrophytic Vegetation (Explain) FACU 3 - Prevalence Index = 5.0 m. FACU 3 - Prevalence Index = 5.0 m. FACU 4 - Morphological Adaptations (Provide data in Remarks or on a separate sheet) FACU 3 - Prevalence Index = 5.0 m. FACU 4 - Morphological Adaptations (Provide data in Remarks or on a separate sheet) FACU 4 - Morphological Adaptations (Provide data in Remarks or on a separate sheet) FACU 5 - FACU 5 - FACU 6 - Morphological Adaptations (Provide data in Remarks or on a separate sheet) FACU 6 - FACU 7 - Morphological Adaptations (Provide data in Remarks or on a separate sheet) FACU 7 - FACU 7 - Morphological Adaptations (Provide data in Remarks or on a separate sheet) FACU 7 - FACU 7 - Morphological Adaptations (Provide data in Remarks or on a separate sheet) FACU 8 - FACU 9 - FACU 7 - Morphological Adaptations (Provide data in Remarks or on a separate sheet) FACU 9 - FA | | | | | · · · · · · · · · · · · · · · · · · · | 0 | | |
| FACU species 60 x 4 = 240 | | | | | | | | |
| UPL species | | | | | | 40 | | |
| Column Totals 60 (A) 240 Prevalence Index = B/A = 4.00 Prevalence Index = B/A = 4.00 | | | | | | 0 | | |
| Prevalence Index = B/A = 4.00 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide data in Remarks or on a separate sheet) Festuca rubra 10 Yes FACU Problematic Hydrophytic Vegetation¹ (Explain) Rubus allegheniensis 10 Yes FACU Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree - Woody plants 3 in. (7.6 cm) or more in diame at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Woody Vine Stratum (Plot size: 15ft²) Woody Vine Stratum (Plot size: 15ft²) Fresultal Cover Prevalence Index = B/A = 4.00 Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 - Deminance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree - Woody plants 3 in. (7.6 cm) or more in diame at breast height (DBH), regardless of height. Herb - All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall. Woody vines - All woody vines greater than 3.28 ft height. Hydrophytic Vegetation Present? Yes No X | | | · | | <u> </u> | 40 (E | | |
| Hydrophytic Vegetation Indicators: | | | | | ` , | | | |
| a | | | | | | <u> </u> | | |
| Lerb Stratum (Plot size: 5ft²) | | | =Total Cover | | | | | |
| . Andropogon virginicus 20 Yes FACU 21 - Prevalence Index is ≤3.0¹ 22 4 - Morphological Adaptations¹ (Provide data in Remarks or on a separate sheet) 23 - Festuca rubra 24 - Morphological Adaptations¹ (Provide data in Remarks or on a separate sheet) 25 - Festuca rubra 26 | Herb Stratum (Plot size: 5ft ²) | | | | | | | |
| 2. Trifolium repens 10 Yes FACU data in Remarks or on a separate sheet) 3. Trifolium pratense 10 Yes FACU Problematic Hydrophytic Vegetation¹ (Explain) 4. Festuca rubra 10 Yes FACU Problematic Hydrophytic Vegetation¹ (Explain) 5. Rubus allegheniensis 10 Yes FACU 5. Rubus allegheniensis 10 Yes FACU Problematic Hydrophytic Vegetation¹ (Explain) 6. Rubus allegheniensis 10 Yes FACU Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 7. Definitions of Vegetation Strata: 8. Tree — Woody plants 3 in. (7.6 cm) or more in diame at breast height (DBH), regardless of height. 9. Sapling/shrub — Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. 9. Herb — All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft height. 9. Woody Vine Stratum (Plot size: 15ft²) 1. Woody Vines — All woody vines greater than 3.28 ft height. 9. Hydrophytic Vegetation Present? Yes No X | | 20 | Yes | FACU | | | | |
| Trifolium pratense 10 Yes FACU Problematic Hydrophytic Vegetation (Explain) Present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diame at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft height. Woody Vine Stratum (Plot size:15ft^2) Moody Vine Stratum (Plot size:15ft^2) End at 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. Tree – Woody plants 3 in. (7.6 cm) or more in diame at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft height. Woody vines – All woody vines greater than 3.28 ft height. Hydrophytic Vegetation Present? Yes No X | | | | | 4 - Morphological Adaptations ¹ (Provide data in Remarks or on a separate sheet) | | | |
| 10 Yes FACU Problematic Hydrophytic Vegetation (Explain) 5. Rubus allegheniensis 10 Yes FACU 1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diame at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft height. Woody Vine Stratum (Plot size: 15ft²) Woody vines – All woody vines greater than 3.28 ft height. Hydrophytic Vegetation Present? Yes No X | - | 10 | | | | | | |
| 10 Yes FACU Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diame at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15ft²) Woody vines – All woody vines greater than 3.28 ft height. Hydrophytic Vegetation Present? Yes No X | | | | | | | | |
| Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | | | -1 | | | |
| Definitions of Vegetation Strata: Tree – Woody plants 3 in. (7.6 cm) or more in diame at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15ft²) Noody Vines – All woody vines greater than 3.28 ft height. Hydrophytic Vegetation Vegetation Present? Yes No X | | - | | | | gy must | | |
| Tree – Woody plants 3 in. (7.6 cm) or more in diame at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15ft²) Woody vines – All woody vines greater than 3.28 ft height. Hydrophytic Vegetation Present? Yes No X | | | | | | | | |
| Tree – Woody plants 3 in. (7.6 cm) or more in diame at breast height (DBH), regardless of height. Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: | 3. | | | | | | | |
| and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15ft²) Woody vines – All woody vines greater than 3.28 ft height. Hydrophytic Vegetation Present? Yes No X | | | | | | ı dıamete | | |
| Herb – All herbaceous (non-woody) plants, regardles of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15ft²) Woody vines – All woody vines greater than 3.28 ft height. Hydrophytic Vegetation Present? Yes No X | | | | | | | | |
| Woody Vine Stratum (Plot size: 15ft ²) Woody vines – All woody vines greater than 3.28 ft height. Hydrophytic Vegetation Present? Yes No X | | | | | Herb – All herbaceous (non-woody) plants, re | egardless | | |
| Noddy viries All woody viries greater trial 3.28 ft | | 60 | =Total Cover | | of size, and woody plants less than 3.28 ft tal | l. | | |
| 2 | | | | | | 3.28 ft ir | | |
| Hydrophytic Vegetation Present? Yes No X =Total Cover | | | | | | | | |
| 1 | | | | | | | | |
| =Total Cover | | | · | | | | | |
| | | | =Total Cover | | _ · · · · · · · · · · · · · · · · · · · | | | |
| Remarks: (Include photo numbers here or on a separate sheet.) | Remarks: (Include photo numbers here or on a sens | rate sheet \ | • | | 1 | | | |

SOIL Sampling Point UP-F

| Profile Desc | ription: (Describe to | the de | pth needed to docu | ıment th | ne indica | tor or co | confirm the absence of indicators.) | |
|----------------------------|--------------------------|-----------|---|-----------|--------------------|------------------|--|-------|
| Depth | Matrix | | | x Featur | | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture Remarks | |
| 0-8 | 10YR 4/4 | 100 | | | | | Loamy/Clayey | |
| 8-22 | 10YR 4/3 | 100 | | | | | Loamy/Clayey | |
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| 1 | | | | | | | 2. | |
| | ncentration, D=Deple | etion, RN | 1=Reduced Matrix, M | /IS=Mas | ked Sand | d Grains. | | |
| - Histosol (| | | - Polyvalue Belo | w Surfa | n (82) (1 | DD D | Indicators for Problematic Hydric Soils ³ : - 2 cm Muck (A10) (LRR K, L, MLRA 149 | R) |
| | ipedon (A2) | | MLRA 149B | | Je (30) (1 | -IXIX IX, | - Coast Prairie Redox (A16) (LRR K, L, R | • |
| - Black His | | | - Thin Dark Surfa | | (LRR R, | MLRA 1 | | |
| | n Sulfide (A4) | | - High Chroma S | | | | - Polyvalue Below Surface (S8) (LRR K, I | |
| - Stratified | Layers (A5) | | - Loamy Mucky I | Mineral (| (F1) (LRF | R K, L) | Thin Dark Surface (S9) (LRR K, L) | |
| - Depleted | Below Dark Surface | (A11) | - Loamy Gleyed | Matrix (| F2) | | - Iron-Manganese Masses (F12) (LRR K, | L, R) |
| - Thick Da | rk Surface (A12) | | Depleted Matrix | x (F3) | | | Piedmont Floodplain Soils (F19) (MLRA | 149B) |
| | ucky Mineral (S1) | | - Redox Dark Su | | | | Mesic Spodic (TA6) (MLRA 144A, 145, | 149B) |
| | eyed Matrix (S4) | | Depleted Dark | | | | - Red Parent Material (F21) | |
| | edox (S5) Matrix (S6) | | Redox DepressMarl (F10) (LR) | | 3) | | Very Shallow Dark Surface (F22) - Other (Explain in Remarks) | |
| - Dark Sur | | | - Wall (F10) (LK) | K K, L) | | | - Other (Explain in Nemarks) | |
| Bank Gan | 1400 (01) | | | | | | | |
| ³ Indicators of | hydrophytic vegetation | on and w | vetland hydrology mu | ust be pr | esent, ur | nless dist | sturbed or problematic. | |
| Restrictive L | ayer (if observed): | | | | | | | |
| Type: | | | | | | | | |
| Depth (in | ches): | | | | | | Hydric Soil Present? Yes No | X |
| Remarks: | | | | | | | | |
| Soil samples | had small shale/grav | el interm | ized with matrix. Are | ea has b | een grad | ed by ad | djacent storm water detention construction | |
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| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|--|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: WL-G |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| Landform (hillside, terrace, etc.): Dip Local | relief (concave, convex,etc): Concave Slope %: 0 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.064746 | Long: -82.906954 Datum: 1983 |
| Soil Map Unit Name: Pewamo silty clay loam, low carbonate till, 0 to 2 perc | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No , Soil No , or Hydrology No significantly disturt | |
| Are Vegetation No , Soil No , or Hydrology No naturally problema | · — — — |
| SUMMARY OF FINDINGS – Attach site map showing sam | |
| Hydrophytic Vegetation Present? Yes X No | Is the Sampled Area |
| Hydric Soil Present? Yes X No | within a Wetland? Yes X No |
| Wetland Hydrology Present? Yes X No | If yes, optional Wetland Site ID: |
| | |
| 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) |
| X Surface Water (A1) Water-Stained Leaves (E | |
| - High Water Table (A2) - Aquatic Fauna (B13) | Moss Trim Lines (B16) |
| X Saturation (A3) - Marl Deposits (B15) | - Dry-Season Water Table (C2) |
| - Water Marks (B1) - Hydrogen Sulfide Odor (| · · · · · · · · · · · · · · · · · · · |
| - Sediment Deposits (B2) - Oxidized Rhizospheres of Control of Con | <u> </u> |
| - Drift Deposits (B3) - Presence of Reduced Iro | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction in | |
| - Iron Deposits (B5) - Thin Muck Surface (C7) | |
| - Inundation Visible on Aerial Imagery (B7) - Other (Explain in Remark | |
| Sparsely Vegetated Concave Surface (B8) | X FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes X No Depth (inches): | |
| Water Table Present? Yes No _X Depth (inches): | |
| Saturation Present? Yes X No Depth (inches): | 8 Wetland Hydrology Present? Yes X No |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | vious inspections), if available: |
| Remarks: | |
| Tomano. | |
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| | |
| 1 | |

| Tree Stratum (Plot size: 30ft ²) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test workshee | M | | |
|---|---------------------|-------------------|---------------------|---|--------------|-------------|----------|
| 1. Quercus bicolor | 20 | Yes | FACW | Dominance rest workshee | | | |
| 2. | - | 163 | TACW | Number of Dominant Specie Are OBL, FACW, or FAC: | s That | 4 | (A) |
| 3.4. | | | | Total Number of Dominant Species Across All Strata: | | 4 | _(B) |
| 5 | | - | | Percent of Dominant Specie Are OBL, FACW, or FAC: | | 00.0% | (A/B) |
| 7 | | | | Prevalence Index workshe | | | |
| | 20 | =Total Cover | | Total % Cover of: | Mu | ıltiply by: | |
| Sapling/Shrub Stratum (Plot size: 15ft ² |) | - | | OBL species 40 | | 40 | |
| Quercus palustris | 30 | Yes | FACW | FACW species 50 | | | |
| 0 | | | | FAC species 0 | | | _ |
| | | | | FACU species 0 | | 0 | |
| 4 | | | | UPL species 0 | | | _ |
| 5. | _ | | | Column Totals 90 | | | — (B) |
| _ | | | | Prevalence Index = E | (A) | 1.56 | (D) |
| 7. | | | | Hydrophytic Vegetation In | | 1.30 | |
| | 30 | =Total Cover | | 1 - Rapid Test for Hydro | | tation | |
| Herb Stratum (Plot size: 5ft ²) | | _ Total Cover | | X 2 - Dominance Test is > | - | tation | |
| 1. Juncus effusus | 30 | Yes | OBL | X 3 - Prevalence Index is | | | |
| Carex lurida | 10 | Yes | OBL | I — | | /ido | |
| | | 162 | OBL | 4 - Morphological Adaptations¹ (Provide data in Remarks or on a separate sheet) | | | |
| 3. | | | | | · | | \ |
| 4 | | | | Problematic Hydrophytic | vegetation | (Explai | n) |
| 5 | | | | ¹ Indicators of hydric soil and be present, unless disturbed | | • • • | must |
| 7 | | | | Definitions of Vegetation S | Strata: | | |
| 8 | | | | Tree – Woody plants 3 in. (7 at breast height (DBH), rega | | | ameter |
| 10. | | | | | | _ | DII |
| 11. | | | | Sapling/shrub – Woody pla and greater than or equal to | | | DΠ |
| 12. | | | | Herb – All herbaceous (non- | woody) plo | nto rogo | rdloog |
| | 40 | =Total Cover | | of size, and woody plants le | | | luless |
| Woody Vine Stratum (Plot size: 15ft ² |) | _ | | Washing Allinophin | | . 41 0 0 | 00 ft ! |
| 1. | | | | Woody vines – All woody v height. | ines greater | than 3.2 | α π in |
| 2. | | | | Ü | | | |
| 3. | | | | Hydrophytic | | | |
| 4. | | | | Vegetation Present? Yes | X No | | |
| ·· - | | =Total Cover | | 100 | | | |
| Remarks: (Include photo numbers here or on a seg | arata abaat \ | | | | | | |
| Remarks. (include prioto numbers here or on a sep | Jaiale Sileel.) | | | | | | |

Page 2

SOIL Sampling Point WL-G

| Profile Desc | cription: (Describe t | o the de | pth needed to docu | ıment tl | ne indica | tor or co | onfirm the absence o | f indicators.) |
|---|--|-----------|--|---|--|--------------------------------|--|---|
| Depth | Matrix | | Redox | x Featur | es | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 2/1 | 95 | 10YR 5/8 | 5 | С | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| 8-16 | 10YR 3/2 | 95 | 10YR 5/8 | 5 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 95 | 10YR 5/6 | 5 | <u>C</u> | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | _ | | | _ | | | |
| | | | | | | | | |
| | oncentration, D=Deple | etion, RN | M=Reduced Matrix, M | /IS=Mas | ked Sand | d Grains. | | L=Pore Lining, M=Matrix. |
| - Black H - Hydroge - Stratified X Depleted - Thick Do - Sandy N - Sandy F - Stripped - Dark Su | (A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1) Gleyed Matrix (S4) Redox (S5) d Matrix (S6) urface (S7) | | - Polyvalue Belo MLRA 149B; - Thin Dark Surfa - High Chroma S - Loamy Mucky I - Loamy Gleyed - Depleted Matrix - Redox Dark Surfa - Depleted Dark - Redox Depress - Marl (F10) (LRI |) ace (S9) Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F6 R K, L) | (LRR R 611) (LRI (F1) (LRI F2) 66) (F7) | , MLRA 1 R K, L) R K, L) | - 2 cm Mu - Coast Pr - 5 cm Mu - Polyvalu - Thin Dar - Iron-Mar - Piedmor - Mesic Sp - Red Par - Very Sha - Other (E | or Problematic Hydric Soils ³ : ack (A10) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R) acky Peat or Peat (S3) (LRR K, L, R) be Below Surface (S8) (LRR K, L) ck Surface (S9) (LRR K, L) aganese Masses (F12) (LRR K, L, R) at Floodplain Soils (F19) (MLRA 149B) podic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) allow Dark Surface (F22) explain in Remarks) |
| Type: Depth (i | Layer (if observed):nches): | | | | | | Hydric Soil Presei | nt? Yes_X_No |
| Remarks: | | | | | | | l | |
| | | | | | | | | |

| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|---|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-G |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| • | relief (concave, convex,etc): Convex Slope %: 2 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.064531 | Long: -82.906723 Datum: 1983 |
| | |
| Soil Map Unit Name: Pewamo silty clay loam, low carbonate till, 0 to 2 per | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No, Soil No, or Hydrology No significantly distur | |
| Are Vegetation No, Soil No, or Hydrology No naturally problems | atic? (If needed, explain any answers in Remarks.) |
| SUMMARY OF FINDINGS – Attach site map showing sam | pling point locations, transects, important features, etc. |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area |
| Hydric Soil Present? Yes No X | within a Wetland? Yes No _X_ |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: |
| Remarks: (Explain alternative procedures here or in a separate report.) | |
| Tromano: (Explain anomalive procedures note of in a coparate report.) | |
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| 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) |
| Surface Water (A1) Water-Stained Leaves (| B9) Drainage Patterns (B10) |
| High Water Table (A2) Aquatic Fauna (B13) | - Moss Trim Lines (B16) |
| Saturation (A3) Marl Deposits (B15) | Dry-Season Water Table (C2) |
| Water Marks (B1) Hydrogen Sulfide Odor (| (C1) Crayfish Burrows (C8) |
| Sediment Deposits (B2) Oxidized Rhizospheres | on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) |
| Drift Deposits (B3) Presence of Reduced Iron | on (C4) Stunted or Stressed Plants (D1) |
| Algal Mat or Crust (B4) Recent Iron Reduction in | n Tilled Soils (C6) Geomorphic Position (D2) |
| Iron Deposits (B5) Thin Muck Surface (C7) | Shallow Aquitard (D3) |
| Inundation Visible on Aerial Imagery (B7) Other (Explain in Remar | |
| Sparsely Vegetated Concave Surface (B8) | FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes No _X Depth (inches): | : <u></u> |
| Water Table Present? Yes No _X Depth (inches): | |
| Saturation Present? Yes No X Depth (inches): | : Wetland Hydrology Present? Yes No _X |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| | |
| Remarks: | |
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 VEGETATION – Use scientific names of plants.
 Sampling Point:
 UP-G

| Tree Stratum (Plot size: 30ft ²) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: |
|---|---------------------|-------------------|---------------------|---|
| Carya ovata 2. | 20 | Yes | FACU | Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A) |
| 3. | | · | | Total Number of Dominant |
| 4. | | | | Species Across All Strata: 8 (B) |
| 5 | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B) |
| 7 | | | | Prevalence Index worksheet: |
| | 20 | =Total Cover | | Total % Cover of: Multiply by: |
| Sapling/Shrub Stratum (Plot size: 15ft ²) | | | | OBL species 0 x 1 = 0 |
| 1. Lonicera japonica | 15 | Yes | FACU | FACW species 0 x 2 = 0 |
| 2. Prunus americana | 25 | Yes | UPL | FAC species 0 x 3 = 0 |
| 3. | | | | FACU species 95 x 4 = 380 |
| 4 | | | | UPL species 25 x 5 = 125 |
| 5 | | | | Column Totals 120 (A) 505 (B) |
| 6. | | | | Prevalence Index = B/A = 4.21 |
| 7 | | | | Hydrophytic Vegetation Indicators: |
| | 40 | =Total Cover | | 1 - Rapid Test for Hydrophytic Vegetation |
| Herb Stratum (Plot size: 5ft ²) | | - | | 2 - Dominance Test is >50% |
| 1. Andropogon virginicus | 10 | Yes | FACU | 3 - Prevalence Index is ≤3.0 ¹ |
| 2. Trifolium repens | 10 | Yes | FACU | 4 - Morphological Adaptations ¹ (Provide |
| 3. Trifolium pratense | 10 | Yes | FACU | data in Remarks or on a separate sheet) |
| 4. Festuca rubra | 10 | Yes | FACU | Problematic Hydrophytic Vegetation ¹ (Explain) |
| 5. Rubus allegheniensis | 20 | Yes | FACU | |
| 6. | | 165 | PACU | ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. |
| 7 | | | | Definitions of Vegetation Strata: |
| 8. | | | | |
| 9. | | | | Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. |
| 10 | | | | Sapling/shrub – Woody plants less than 3 in. DBH |
| 11 | | | | and greater than or equal to 3.28 ft (1 m) tall. |
| 12 | | | | Herb – All herbaceous (non-woody) plants, regardless |
| | 60 | =Total Cover | | of size, and woody plants less than 3.28 ft tall. |
| Woody Vine Stratum (Plot size: 15ft ²) 1. | | | | Woody vines – All woody vines greater than 3.28 ft in height. |
| 2. | | · | | ŭ |
| | | | | Hydrophytic |
| 1 | | · —— | | Vegetation Present? Yes No X |
| 4. | | =Total Cover | | Tesent: TesNO_X |
| | | - | | L |
| Remarks: (Include photo numbers here or on a separate or | rate sneet.) | | | |
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SOIL Sampling Point UP-G

| Profile Desci | ription: (Describe to | the de | pth needed to docu | ment th | ne indica | tor or c | onfirm the absence of | indicators.) |
|----------------------------|------------------------|-----------|---|--------------------|-------------------|------------------|------------------------|--|
| Depth | Matrix | | | (Feature | | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 3/1 | 100 | | | | | Loamy/Clayey | |
| 8-22 | 10YR 3/4 | 98 | 7.5YR 5/6 | 2 | <u>C</u> | <u>M</u> | Loamy/Clayey | Distinct redox concentrations |
| | | | | | | | | |
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| | | | | | | | | |
| | ncentration, D=Deple | etion, RN | M=Reduced Matrix, M | 1S=Masl | ked Sand | d Grains. | | =Pore Lining, M=Matrix. |
| Hydric Soil II | | | Polyvalue Belo | w Surfac | ce (S8) (I | LRR R, | | r Problematic Hydric Soils ³ : k (A10) (LRR K, L, MLRA 149B) |
| - Histic Epi | pedon (A2) | | MLRA 149B) | | | | | irie Redox (A16) (LRR K, L, R) |
| - Black His | | | - Thin Dark Surfa | | | | | ky Peat or Peat (S3) (LRR K, L, R) |
| | Sulfide (A4) | | - High Chroma S | | | _ | | Below Surface (S8) (LRR K, L) |
| | Layers (A5) | | Loamy Mucky I | | | R K, L) | | Surface (S9) (LRR K, L) |
| | Below Dark Surface | (A11) | Loamy Gleyed | | F2) | | | ganese Masses (F12) (LRR K, L, R) |
| | rk Surface (A12) | | Depleted Matrix | | ·0) | | | Floodplain Soils (F19) (MLRA 149B) |
| | ucky Mineral (S1) | | - Redox Dark Su | | | | | odic (TA6) (MLRA 144A, 145, 149B) |
| | eyed Matrix (S4) | | Depleted DarkRedox Depress | | , , | | | nt Material (F21) low Dark Surface (F22) |
| - Sandy Re | Matrix (S6) | | - Marl (F10) (LR | • |) | | | plain in Remarks) |
| - Dark Surf | | | - Wall (1 10) (ER | ι λ (λ, ∟) | | | Other (EX | plant in Remarks) |
| Bank Gan | (07) | | | | | | | |
| ³ Indicators of | hydrophytic vegetation | on and w | vetland hydrology mu | ıst be pr | esent, ur | nless dis | turbed or problematic. | |
| | ayer (if observed): | | | | | | | |
| Type: | | | | | | | | |
| Depth (in | ches): | | | | | | Hydric Soil Present | ? Yes <u>No X</u> |
| Remarks: | | | | | | | | |
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| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 | | | | | | |
|---|--|--|--|--|--|--|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-G2 | | | | | | |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W | | | | | | |
| • | relief (concave, convex,etc): Convex Slope %: 2 | | | | | | |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.065173 | Long: -82.907142 Datum: 1983 | | | | | | |
| Soil Map Unit Name: Pewamo silty clay loam, low carbonate till, 0 to 2 per | | | | | | | |
| | | | | | | | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) | | | | | | |
| Are Vegetation No, Soil No, or Hydrology No significantly distur | | | | | | | |
| Are Vegetation No, Soil No, or Hydrology No naturally problems | atic? (If needed, explain any answers in Remarks.) | | | | | | |
| SUMMARY OF FINDINGS – Attach site map showing sam | pling point locations, transects, important features, etc. | | | | | | |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area | | | | | | |
| Hydric Soil Present? Yes No X | within a Wetland? Yes No X | | | | | | |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: | | | | | | |
| Remarks: (Explain alternative procedures here or in a separate report.) | | | | | | | |
| (27,611) | | | | | | | |
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| 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) | | | | | | |
| Surface Water (A1) Water-Stained Leaves (| B9) Drainage Patterns (B10) | | | | | | |
| - High Water Table (A2) - Aquatic Fauna (B13) | Moss Trim Lines (B16) | | | | | | |
| Saturation (A3) Marl Deposits (B15) | Dry-Season Water Table (C2) | | | | | | |
| Water Marks (B1) Hydrogen Sulfide Odor (| | | | | | | |
| Sediment Deposits (B2) Oxidized Rhizospheres | | | | | | | |
| Drift Deposits (B3) Presence of Reduced In | | | | | | | |
| Algal Mat or Crust (B4) Recent Iron Reduction in | n Tilled Soils (C6) Geomorphic Position (D2) | | | | | | |
| Iron Deposits (B5) Thin Muck Surface (C7) | | | | | | | |
| Inundation Visible on Aerial Imagery (B7) Other (Explain in Remar | | | | | | | |
| Sparsely Vegetated Concave Surface (B8) | FAC-Neutral Test (D5) | | | | | | |
| Field Observations: | | | | | | | |
| Surface Water Present? Yes No X Depth (inches): | | | | | | | |
| Water Table Present? Yes No _X Depth (inches): | | | | | | | |
| Saturation Present? Yes No X Depth (inches): | : Wetland Hydrology Present? Yes No X | | | | | | |
| (includes capillary fringe) | | | | | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: | | | | | | |
| | | | | | | | |
| Demodus | | | | | | | |
| Remarks: | | | | | | | |
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| VEGETATION – Use scientific names of plants. |
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|---|

| | ants. | | | Sampling Point: UP-G2 | |
|--|---------------------|---------------|---------------------|--|---------|
| Free Stratum (Plot size: 30ft ²) | Absolute % Cover | | Indicator Status | Dominance Test worksheet: | |
| I. Pyrus calleryana | 25 | Yes | UPL | Number of Dominant Species That | |
| 2. Quercus palustris | 10 | Yes | FACW | | (A) |
| 3 | | | | - Total Number of Dominant | |
| i | | | | Species Across All Strata: 6 | (B) |
| 5. | | | | Percent of Dominant Species That | |
| 3. | | | | The state of the s | (A/B) |
| 7. | | | | Prevalence Index worksheet: | |
| | 35 | =Total Cover | | Total % Cover of: Multiply by: | _ |
| Sapling/Shrub Stratum (Plot size:15ft ²) | | • | | OBL species 0 x 1 = 0 | _ |
| . Lonicera japonica | 25 | Yes | FACU | FACW species 10 x 2 = 20 | _ |
| . Prunus americana | 25 | Yes | UPL | FAC species 0 x 3 = 0 | _ |
| | | • | | FACU species 55 x 4 = 220 | _ |
| | | - — | | UPL species 50 x 5 = 250 | _ |
| | | | | Column Totals 115 (A) 490 | — (B |
| | | - — | | Prevalence Index = B/A = 4.26 | _ '- |
| - | | - —— | | · | |
| · - | | T 151 Cover | | Hydrophytic Vegetation Indicators: | |
| | 50 | _=Total Cover | | 1 - Rapid Test for Hydrophytic Vegetation | |
| Herb Stratum (Plot size: 5ft ²) | | | | 2 - Dominance Test is >50% | |
| . Andropogon virginicus | 10 | Yes | FACU | 3 - Prevalence Index is ≤3.0 ¹ | |
| 2. Rubus allegheniensis 3. | 20 | Yes | FACU | 4 - Morphological Adaptations ¹ (Provide data in Remarks or on a separate sheet) | |
| 1. | | | | Problematic Hydrophytic Vegetation ¹ (Explain) | .) |
| 5. | | | | · | |
| 5. | | | | ¹ Indicators of hydric soil and wetland hydrology mube present, unless disturbed or problematic. | JSt |
| 7 | | | | Definitions of Vegetation Strata: | |
| 3 | | | | Tree – Woody plants 3 in. (7.6 cm) or more in diar | mete |
|). | | | | at breast height (DBH), regardless of height. | 110 |
| 10. | | · | | - Sapling/shrub – Woody plants less than 3 in. DB | ,Ц |
| 11. | | | | and greater than or equal to 3.28 ft (1 m) tall. | Л |
| 12. | | • | | | "-0 |
| | 30 | =Total Cover | | Herb – All herbaceous (non-woody) plants, regard of size, and woody plants less than 3.28 ft tall. | iles |
| Noody Vine Stratum (Plot size: 15ft ²) | | | | | |
| I. | | | | Woody vines – All woody vines greater than 3.28 height. | ft ır |
| | | | | height. | |
| | | - —— | | Hydrophytic | |
| 3. | | - —— | | - Vegetation | |
| 1 | | | | Present? Yes No _X | |
| 1 | | =Total Cover | | | |

SOIL Sampling Point UP-G2

| Profile Desc | ription: (Describe t | o the de | pth needed to docu | ıment tl | ne indica | tor or co | onfirm the absence of ind | licators.) | |
|---|---|-----------|--|--|--|--------------------------------|--|---|---|
| Depth | Matrix | | Redo | x Featur | es | | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks | <u> </u> |
| 0-8 | 10YR 3/1 | 100 | | | | | Loamy/Clayey | | |
| 8-22 | 10YR 4/3 | 98 | 10YR 5/6 | 2 | | <u>M</u> | Loamy/Clayey | Distinct redox cond | centrations |
| | | | | _ _ _ | | | | | |
| | | | | <u> </u> | <u> </u> | | | | |
| | | | | | | | | | |
| 1Typo: C-C | oncentration, D=Deple | otion PM | A-Poducod Matrix N | | kod San | | ² Location: DL-D | oro Lining M-Matri | <u> </u> |
| Hydric Soil I | | etion, Ri | /i=Reduced Matrix, N | /IS=IVIAS | ked Sand | d Grains. | | ore Lining, M=Matri | |
| - Histosol - Histic Ep - Black His - Hydroge - Stratified - Depleted - Thick Da - Sandy M - Sandy G - Sandy R - Stripped - Dark Sur | (A1) ipedon (A2) stic (A3) n Sulfide (A4) Layers (A5) I Below Dark Surface rk Surface (A12) lucky Mineral (S1) leyed Matrix (S4) edox (S5) Matrix (S6) fface (S7) | | - Polyvalue Belo MLRA 149B - Thin Dark Surfa - High Chroma S - Loamy Mucky I - Loamy Gleyed - Depleted Matri - Redox Dark Su - Depleted Dark - Redox Depress - Marl (F10) (LR |) ace (S9) Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F R K, L) | (LRR R 611) (LRI (F1) (LRI F2) 66) (F7) 8) | , MLRA 1 R K, L) R K, L) | - 2 cm Muck (/ - Coast Prairie 49B) - 5 cm Mucky - Polyvalue Be - Thin Dark Su - Iron-Mangan - Piedmont Flo - Mesic Spodie - Red Parent N | A10) (LRR K, L, ML Redox (A16) (LRR Peat or Peat (S3) (I Flow Surface (S8) (L Inface (S9) (LRR K, ese Masses (F12) (Dodplain Soils (F19) C (TA6) (MLRA 144 Material (F21) DOARK Surface (F22) | LRA 149B) LR K, L, R) LRR K, L, R) LRR K, L) L) (LRR K, L, R) (MLRA 149B) A, 145, 149B) |
| | ayer (if observed): | | | · · | , | | ' | | |
| Type: _ Depth (ir | nches): | | | | | | Hydric Soil Present? | Yes | No X |
| Remarks: | <u> </u> | | | | | | | | |
| | | | | | | | | | |

| Project/Site: AEP Morse Road | City/County: Franklin County | Sampling Date: 07/29/18 |
|---|--|--------------------------|
| Applicant/Owner: ms consultants, inc | State: OH | Sampling Point: UP-1 |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, | R 17 W |
| Landform (hillside, terrace, etc.): Flat Local | relief (concave, convex,etc): Concave | |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.060619 | Long: -82.906718 | Datum: 1983 |
| Soil Map Unit Name: Bennington silt loam, 0 to 2 percent slopes (BeA) | NWI classification: | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | · | explain in Remarks.) |
| Are Vegetation No , Soil No , or Hydrology No significantly distur | | |
| | | |
| Are Vegetation No , Soil No , or Hydrology No naturally problems | | |
| SUMMARY OF FINDINGS – Attach site map showing sam | ipling point locations, transects, im | portant reatures, etc. |
| Hydrophytic Vegetation Present? Yes NoX | Is the Sampled Area | |
| Hydric Soil Present? Yes X No | within a Wetland? Yes | No X |
| Wetland Hydrology Present? Yes X No | If yes, optional Wetland Site ID: | |
| Remarks: (Explain alternative procedures here or in a separate report.) Due to the small percentage of wetland plant species present at the sample | e location ms consultants, inc does not conside | r this area a wetland. |
| HYDROLOGY | | |
| Wetland Hydrology Indicators: | Socondary Indicators (n | ninimum of two required) |
| Primary Indicators (minimum of one is required; check all that apply) | <u>secondary indicators (ii</u> - Surface Soil Cracks | |
| - Surface Water (A1) - Water-Stained Leaves (I | | |
| - High Water Table (A2) - Aquatic Fauna (B13) | - Moss Trim Lines (B | |
| X Saturation (A3) - Marl Deposits (B15) | - Dry-Season Water | |
| - Water Marks (B1) - Hydrogen Sulfide Odor (| (C1) - Crayfish Burrows (C | 28) |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | on Living Roots (C3) X Saturation Visible of | n Aerial Imagery (C9) |
| - Drift Deposits (B3) - Presence of Reduced Iron | on (C4) Stunted or Stressed | d Plants (D1) |
| Algal Mat or Crust (B4) Recent Iron Reduction in | | ` ' |
| Iron Deposits (B5) Thin Muck Surface (C7) | | • |
| - Inundation Visible on Aerial Imagery (B7) - Other (Explain in Remar | | |
| - Sparsely Vegetated Concave Surface (B8) | - FAC-Neutral Test (I | D5) |
| Field Observations: | | |
| Surface Water Present? Yes X No Depth (inches): | | |
| Water Table Present? Yes No X Depth (inches): Saturation Present? Yes X No Depth (inches): | | Vac. V. Na |
| (includes capillary fringe) | :4 Wetland Hydrology Present? | Yes X No |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: | |
| | | |
| Remarks: | | |
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| VEGETATION – Use scientific names of pla | | | | Sampling Point: | UP-1 |
|---|------------------|-------------------|---------------------|--|------------------------|
| <u>Tree Stratum</u> (Plot size:30ft ²) | Absolute % Cover | Dominant Species? | Indicator Status | Dominance Test worksheet: | |
| 1 2 | | | | Number of Dominant Species That Are OBL, FACW, or FAC: | 0 (A) |
| 3.4. | | | | Total Number of Dominant Species Across All Strata: | 2 (B) |
| 5.6. | | · | | Percent of Dominant Species That Are OBL, FACW, or FAC: | 0.0% (A/B) |
| 7 | | | | Prevalence Index worksheet: | |
| | | =Total Cover | | Total % Cover of: Mu | Iltiply by: |
| Sapling/Shrub Stratum (Plot size: 15ft ²) | | | | OBL species 0 x 1 = | 0 |
| 1. | | | | FACW species 20 x 2 = | 40 |
| 2. | | <u> </u> | | FAC species 5 x 3 = | 15 |
| 3. | | <u> </u> | | FACU species 75 x 4 = | 300 |
| 4. | | | | UPL species 0 x 5 = | 0 |
| 5. | · | | | Column Totals 100 (A) | 355 (B) |
| 6. | | | | Prevalence Index = B/A = | 3.55 |
| 7. | | | | Hydrophytic Vegetation Indicators: | |
| | | =Total Cover | | 1 - Rapid Test for Hydrophytic Vege | tation |
| Herb Stratum (Plot size: 5ft ²) | | | | 2 - Dominance Test is >50% | |
| 1. Festuca rubra | 50 | Yes | FACU | 3 - Prevalence Index is ≤3.0 ¹ | |
| 2. Lolium perenne | 25 | Yes | FACU | 4 - Morphological Adaptations ¹ (Prov | vide |
| 3. Juncus tenuis | 5 | No | FAC | data in Remarks or on a separate | sheet) |
| 4. Echinochloa crus-galli | 10 | No | FACW | Problematic Hydrophytic Vegetation | ¹ (Explain) |
| 5. Cyperus esculentus | 10 | No | FACW | 1 adjusted of budgings it and westered by | -lu-l |
| 6. | | | | ¹ Indicators of hydric soil and wetland hy be present, unless disturbed or problem | |
| 7. | | | | Definitions of Vegetation Strata: | |
| 8 9 | | - | | Tree – Woody plants 3 in. (7.6 cm) or m at breast height (DBH), regardless of he | |
| 10. | | <u> </u> | | | |
| 11. | | | | Sapling/shrub – Woody plants less that and greater than or equal to 3.28 ft (1 m | |
| 12. | | | | | |
| | 100 | =Total Cover | | Herb – All herbaceous (non-woody) plan of size, and woody plants less than 3.28 | |
| Woody Vine Stratum (Plot size:15ft^2) 1 | | | | Woody vines – All woody vines greater height. | than 3.28 ft in |
| 2. | | | | | |
| 3. | | | | Hydrophytic | |
| 4. | | | | Vegetation Present? Yes No | Χ |
| | - | =Total Cover | | | |

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

Although FACW and FAC species were observed during the July 2018 site visit. There was not enough wetland plant species present to pass the dominance test located above. Therefore, the site was still considered to NOT have hydrophytic vegetation present and therefore not considered a wetland.

SOIL Sampling Point UP-1

| Profile Desc | cription: (Describe to | the de | - | | | tor or co | confirm the absence of indicators.) |
|---------------------------|--------------------------|-----------|-------------------------|-----------|-------------------|------------------|--|
| Depth | Matrix | | | r Featur | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture Remarks |
| 0-8 | 10YR 3/2 | 95 | 10YR 5/8 | 5 | <u>C</u> | <u>M</u> | Loamy/Clayey Prominent redox concentrations |
| 8-16 | 10YR 4/2 | 95 | 10YR 5/6 | 5 | <u>C</u> | M | Loamy/Clayey Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 98 | 10YR 5/6 | 2 | <u>C</u> | <u>M</u> | Loamy/Clayey Prominent redox concentrations |
| | | | | <u> </u> | <u> </u> | | |
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| | | | | | | | |
| | . <u> </u> | | | | | | |
| 1 _{Type:} C-C | oncentration, D=Deple | tion DA | | | Lod Con | Croine | Location: PL=Pore Lining, M=Matrix. |
| | | ellon, Ki | /i=Reduced Matrix, iv | io=ivias | ked Sand | J Grains. | |
| Hydric Soil | | | Dobarduo Bolo | u Curto | oo (CO) (I | DD D | Indicators for Problematic Hydric Soils ³ : |
| - Histosol | | | - Polyvalue Belo | | ce (58) (I | LKK K, | 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| | pipedon (A2) | | MLRA 149B) | | // DD D | MIDA | - Coast Prairie Redox (A16) (LRR K, L, R) |
| - Black Hi | | | - Thin Dark Surfa | | | | |
| | en Sulfide (A4) | | - High Chroma S | | | - | - Polyvalue Below Surface (S8) (LRR K, L) |
| | d Layers (A5) | | Loamy Mucky N | | | R K, L) | - Thin Dark Surface (S9) (LRR K, L) |
| | d Below Dark Surface | (A11) | Loamy Gleyed | | F2) | | Iron-Manganese Masses (F12) (LRR K, L, R) |
| | ark Surface (A12) | | X Depleted Matrix | | | | Piedmont Floodplain Soils (F19) (MLRA 1498 |
| | Mucky Mineral (S1) | | - Redox Dark Su | | | | Mesic Spodic (TA6) (MLRA 144A, 145, 149B |
| | Gleyed Matrix (S4) | | Depleted Dark | | | | - Red Parent Material (F21) |
| | Redox (S5) | | - Redox Depress | | 3) | | - Very Shallow Dark Surface (F22) |
| | Matrix (S6) | | Marl (F10) (LRI | R K, L) | | | Other (Explain in Remarks) |
| Dark Su | rface (S7) | | | | | | |
| ³ Indicators o | f hydrophytic vegetation | on and v | vetland hydrology mu | ıst be pr | esent, ur | nless dist | sturbed or problematic. |
| Restrictive | Layer (if observed): | | | | | | |
| Type: | | | | | | | |
| Depth (i | nches): | | | | | | Hydric Soil Present? Yes X No |
| Remarks: | | | | | | | |
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| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|---|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-2 |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| • • • • | relief (concave, convex,etc): Convex Slope %: 0 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.060642 | Long: -82.907677 Datum: 1983 |
| Soil Map Unit Name: Bennington silt loam, 0 to 2 percent slopes (BeA) | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| | |
| Are Vegetation No , Soil No , or Hydrology No significantly distur | · — — |
| Are Vegetation No , Soil No , or Hydrology No naturally problems | |
| SUMMARY OF FINDINGS – Attach site map showing sam | pling point locations, transects, important features, etc. |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area |
| Hydric Soil Present? Yes X No | within a Wetland? Yes No X |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: |
| Remarks: (Explain alternative procedures here or in a separate report.) | |
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| 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) |
| Surface Water (A1) Water-Stained Leaves (| B9) Drainage Patterns (B10) |
| High Water Table (A2) - Aquatic Fauna (B13) | - Moss Trim Lines (B16) |
| Saturation (A3) - Marl Deposits (B15) | Dry-Season Water Table (C2) |
| Water Marks (B1) Hydrogen Sulfide Odor (| (C1) Crayfish Burrows (C8) |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) |
| - Drift Deposits (B3) - Presence of Reduced In | on (C4) Stunted or Stressed Plants (D1) |
| Algal Mat or Crust (B4) Recent Iron Reduction in | n Tilled Soils (C6) Geomorphic Position (D2) |
| Iron Deposits (B5) Thin Muck Surface (C7) | Shallow Aquitard (D3) |
| Inundation Visible on Aerial Imagery (B7) Other (Explain in Remar | rks) Microtopographic Relief (D4) |
| - Sparsely Vegetated Concave Surface (B8) | - FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes No X Depth (inches): | : <u></u> |
| Water Table Present? Yes No X Depth (inches): | : |
| Saturation Present? Yes No X Depth (inches): | : Wetland Hydrology Present? Yes No _X |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| Remarks: | |
| Remains. | |
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| EGETATION – Use scientific names of pla | Absolute | Dominant | Indicator | Sampling Point: | UP-2 | <u> </u> | |
|--|----------|---------------|-----------|--|--------------------------|----------|--|
| ree Stratum (Plot size:30ft ²) | % Cover | Species? | Status | Dominance Test worksheet: | | | |
| · | | <u> </u> | | Number of Dominant Species That Are OBL, FACW, or FAC: | 0 | _(A) | |
| | | <u> </u> | | Total Number of Dominant Species Across All Strata: | 2 | _(B) | |
| | | | | Percent of Dominant Species That Are OBL, FACW, or FAC: | 0.0% | (A/E | |
| | | | | Prevalence Index worksheet: | | | |
| | | =Total Cover | | Total % Cover of: | fultiply by: | | |
| apling/Shrub Stratum (Plot size: 15ft ²) | | | | OBL species0 x 1 = | = 0 | | |
| | | | | FACW species 0 x 2 = | = 0 | | |
| | | | | FAC species 0 x 3 = | = 0 | | |
| | | | | FACU species 100 x 4 = | 400 | | |
| | | | | UPL species 0 x 5 = | · 0 | | |
| | | | | Column Totals 100 (A) | 400 | (B | |
| | | | | Prevalence Index = B/A = | 4.00 | | |
| | | | | Hydrophytic Vegetation Indicators: | | | |
| | | =Total Cover | | 1 - Rapid Test for Hydrophytic Veg | etation | | |
| erb Stratum (Plot size: 5ft ²) | | _ | | 2 - Dominance Test is >50% | | | |
| Festuca rubra | 80 | Yes | FACU | 3 - Prevalence Index is ≤3.0 ¹ | | | |
| Digitaria sanguinalis | 20 | Yes | FACU | 4 - Morphological Adaptations ¹ (Prodata in Remarks or on a separa | | | |
| | | | | Problematic Hydrophytic Vegetation | on ¹ (Explain | n) | |
| | | | | ¹ Indicators of hydric soil and wetland h be present, unless disturbed or proble | | nust | |
| | | | | Definitions of Vegetation Strata: | | | |
| | | | | Tree – Woody plants 3 in. (7.6 cm) or at breast height (DBH), regardless of h | | amete | |
| | | | | Sapling/shrub – Woody plants less th | • | BH | |
| | | | | and greater than or equal to 3.28 ft (1 | | | |
| 2 | 100 | =Total Cover | | Herb – All herbaceous (non-woody) pl of size, and woody plants less than 3.2 | | rdless | |
| oody Vine Stratum (Plot size: 15ft ²) | 100 | _ Total Cover | | Woody vines – All woody vines greate | | 28 ft in | |
| | | | | height. | | | |
| | | | | Hydrophytic | | | |
| | - | | | Vegetation | | | |
| | | | | Present? Yes No | o_X_ | | |
| | | =Total Cover | | | | | |

SOIL Sampling Point UP-2

| Profile Desc | cription: (Describe t | o the de | pth needed to docu | ıment tl | ne indica | tor or co | onfirm the absence o | f indicators.) |
|---|-----------------------------|-----------|---------------------|----------|-------------------|---|----------------------|--------------------------------|
| Depth | Matrix | | Redox | x Featur | es | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 3/2 | 95 | 10YR 5/8 | 5 | <u>C</u> | M | Loamy/Clayey | Prominent redox concentrations |
| 8-16 | 10YR 4/2 | 95 | 10YR 5/6 | 5 | <u>C</u> | M | Loamy/Clayey | Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 98 | 10YR 5/6 | 2 | <u>C</u> | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | <u> </u> | | | | | | |
| | | | | | | | | |
| | oncentration, D=Depl | etion, RI | M=Reduced Matrix, M | /IS=Mas | ked Sand | d Grains. | | L=Pore Lining, M=Matrix. |
| Hydric Soil Indicators: - Histosol (A1) - Polyvalue Below Surface (S8) (LRR R, - Cast Prairie Redox (A16) (LRR K, L, MLRA 149B) - Histic Epipedon (A2) - MLRA 149B) - Black Histic (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - Stratified Layers (A5) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Thin Dark Surface (S9) (LRR K, L) - Thick Dark Surface (A11) - Loamy Gleyed Matrix (F2) - Thick Dark Surface (A12) - Sandy Mucky Mineral (S1) - Sandy Gleyed Matrix (S4) - Sandy Gleyed Matrix (S4) - Sandy Redox (S5) - Redox Dark Surface (F7) - Sandy Redox (S5) - Marl (F10) (LRR K, L) - Other (Explain in Remarks) - Other (Explain in Remarks) - Dark Surface (S7) | | | | | | rairie Redox (A16) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R) rairie Redox (A16) (LRR K, L, R) rairie Redox (S3) (LRR K, L, R) re Below Surface (S8) (LRR K, L) re Surface (S9) (LRR K, L) reganese Masses (F12) (LRR K, L, R) ret Floodplain Soils (F19) (MLRA 149B) redic (TA6) (MLRA 144A, 145, 149B) rent Material (F21) railiow Dark Surface (F22) | | |
| Type: Depth (i | Layer (if observed):nches): | | | | | | Hydric Soil Presei | nt? Yes_X_No |
| Remarks: | | | | | | | 1 | |
| | | | | | | | | |

| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|---|---|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-3 |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| • ' ' | relief (concave, convex,etc): Convex Slope %: 2 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.06185 | Long: -82.907634 Datum: 1983 |
| Soil Map Unit Name: Bennington silt loam, 2 to 6 percent slopes (BeB) | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No , Soil No , or Hydrology No significantly distur | |
| Are Vegetation No , Soil No , or Hydrology No naturally problems | · — |
| SUMMARY OF FINDINGS – Attach site map showing sam | |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area |
| Hydric Soil Present? Yes No X | within a Wetland? Yes No X |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: |
| | |
| HYDROLOGY | |
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required) |
| Primary Indicators (minimum of one is required; check all that apply) | |
| - Surface Water (A1) - Water-Stained Leaves (| |
| - High Water Table (A2) - Aquatic Fauna (B13) | - Moss Trim Lines (B16) |
| - Saturation (A3) - Marl Deposits (B15) | Dry-Season Water Table (C2) |
| - Water Marks (B1) - Hydrogen Sulfide Odor | i i i i i i i i i i i i i i i i i i i |
| - Sediment Deposits (B2) - Oxidized Rhizospheres - Oxidized Rhizospheres | |
| - Drift Deposits (B3) - Presence of Reduced In | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction in | |
| - Iron Deposits (B5) - Thin Muck Surface (C7) | |
| - Inundation Visible on Aerial Imagery (B7) - Other (Explain in Remai | rks) Microtopographic Relief (D4) - FAC-Neutral Test (D5) |
| - Sparsely Vegetated Concave Surface (B8) | - FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes No X Depth (inches) | |
| Water Table Present? Yes No X Depth (inches) | |
| Saturation Present? Yes No X Depth (inches) | : Wetland Hydrology Present? Yes No _X |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| Remarks: | |
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| VEGETATION – Use scientific names of plants. | |
|---|--|
|---|--|

| | : <u>UP-3</u> | 3 |
|--|------------------------------|-----------|
| ce Test worksheet: | | |
| of Dominant Species That | ŧ | |
| FACW, or FAC: | 0 | (A) |
| nber of Dominant | | |
| Across All Strata: | 9 | (B) |
| of Dominant Species That | <u>-</u> • | _ |
| FACW, or FAC: | 0.0% | (A/B) |
| ce Index worksheet: | | |
| tal % Cover of: | Multiply by: | |
| cies 0 x | x 1 =0 | _ |
| pecies 0 x | (2 = 0 | |
| cies 0 x | 3 = 0 | |
| ecies 65 x | × 4 = 260 | |
| · · · · · · · · · · · · · · · · · · · | × 5 = 350 | |
| | (A) 610 | (B) |
| evalence Index = B/A = | 4.52 | _ |
| ytic Vegetation Indicato | ors: | |
| apid Test for Hydrophytic | | |
| ominance Test is >50% | - | |
| evalence Index is ≤3.0 ¹ | | |
| orphological Adaptations ¹ | (Provide | |
| a in Remarks or on a sep | | |
| ematic Hydrophytic Vege | tation ¹ (Explair | n) |
| | | |
| s of hydric soil and wetlan nt, unless disturbed or pro | | nust |
| ns of Vegetation Strata: | | |
| _ | | |
| oody plants 3 in. (7.6 cm) height (DBH), regardless | | ameter |
| | - | |
| shrub – Woody plants les er than or equal to 3.28 f | | 3H |
| • | , | |
| ll herbaceous (non-wood) nd woody plants less thar | | rdless |
| • • | | |
| ines – All woody vines gr | reater than 3.2 | 8 ft in |
| | | |
| rtic | | |
| n Yes | No X | |
| | <u> </u> | |
| | | |
| | Yes | Yes No _X |

| Profile Desc | ription: (Describe to | the de | pth needed to docu | ıment th | ne indica | tor or co | confirm the absence of indicators.) |
|--------------------------|-----------------------|------------|-------------------------|------------|-------------------|------------------|---|
| Depth | Matrix | | | x Featur | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture Remarks |
| 0-8 | 10YR 4/4 | 100 | | | | | Loamy/Clayey |
| 8-22 | 10YR 4/3 | 100 | | | | | Loamy/Clayey |
| | | | | | | | |
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| 1= | | | A. Dankara d Matrica A | 40. 14 | | | 21 and the District M Matrix |
| Hydric Soil I | ncentration, D=Deple | etion, RIV | /I=Reduced Matrix, N | /IS=Mas | ked Sand | Grains. | s. ² Location: PL=Pore Lining, M=Matrix. Indicators for Problematic Hydric Soils ³ : |
| - Histosol (| | | - Polyvalue Belo | w Surfac | ce (S8) (I | RR R. | - |
| | ipedon (A2) | | MLRA 149B | | 00 (00) (1 | -1111 11, | - Coast Prairie Redox (A16) (LRR K, L, R) |
| - Black His | | | - Thin Dark Surfa | | (LRR R. | MLRA 1 | |
| | n Sulfide (A4) | | - High Chroma S | | | | Polyvalue Below Surface (S8) (LRR K, L) |
| | Layers (A5) | | - Loamy Mucky | | | - | - Thin Dark Surface (S9) (LRR K, L) |
| | Below Dark Surface | (A11) | - Loamy Gleyed | | | . , | - Iron-Manganese Masses (F12) (LRR K, L, R) |
| | rk Surface (A12) | . , | - Depleted Matri | | · | | - Piedmont Floodplain Soils (F19) (MLRA 149) |
| - Sandy M | ucky Mineral (S1) | | - Redox Dark Su | ırface (F | 6) | | - Mesic Spodic (TA6) (MLRA 144A, 145, 149B |
| - Sandy GI | eyed Matrix (S4) | | - Depleted Dark | Surface | (F7) | | Red Parent Material (F21) |
| Sandy Re | edox (S5) | | - Redox Depress | | 3) | | Very Shallow Dark Surface (F22) |
| | Matrix (S6) | | Marl (F10) (LR | R K, L) | | | Other (Explain in Remarks) |
| Dark Sur | face (S7) | | | | | | |
| 3Indiantors of | hudrophytic vogetati | | rational burdralage, me | iat ha nin | ooont ur | laas dist | ati wha dia riproblematia |
| | ayer (if observed): | on and w | retiand nydrology mi | ist be pr | esent, ur | iless dist | sturbed or problematic. |
| Type: | , | | | | | | |
| Depth (in | ches). | | | | | | Hydric Soil Present? Yes No X |
| | | | | | | | Tryuno con Fresent. |
| Remarks: Soil samples | had small shale/grav | el interm | nized with matrix. | | | | |
| | naa oman onalo, grav | 0 | 00 | | | | |
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| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|---|---|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-4 |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| | relief (concave, convex,etc): Convex Slope %: 1 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.063192 | Long: -82.907487 Datum: 1983 |
| Soil Map Unit Name: Bennington silt loam, 0 to 2 percent slopes (BeA) | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No , Soil No , or Hydrology No significantly distur | |
| Are Vegetation No , Soil No , or Hydrology No naturally problems | |
| SUMMARY OF FINDINGS – Attach site map showing sam | pling point locations, transects, important features, etc. |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area |
| Hydric Soil Present? Yes No X | within a Wetland? Yes No X |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: |
| | |
| 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) |
| - Surface Water (A1) - Water-Stained Leaves (| |
| - High Water Table (A2) - Aquatic Fauna (B13) | - Moss Trim Lines (B16) |
| - Saturation (A3) - Marl Deposits (B15) | Dry-Season Water Table (C2) |
| - Water Marks (B1) - Hydrogen Sulfide Odor | |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | |
| - Drift Deposits (B3) - Presence of Reduced In | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction in | |
| - Iron Deposits (B5) - Thin Muck Surface (C7) | |
| - Inundation Visible on Aerial Imagery (B7) - Other (Explain in Remai | rks) - Microtopographic Relief (D4) - FAC-Neutral Test (D5) |
| - Sparsely Vegetated Concave Surface (B8) | - FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes No X Depth (inches) | |
| Water Table Present? Yes No X Depth (inches) | |
| Saturation Present? Yes No X Depth (inches) | : Wetland Hydrology Present? Yes No _X |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| Remarks: | |
| Tromano. | |
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| ee Stratum (Plot size: 30ft²) % apling/Shrub Stratum (Plot size: 15ft²) erb Stratum (Plot size: 5ft²) Andropogon virginicus Trifolium repens Trifolium pratense Festuca rubra Rubus allegheniensis | | =Total Cover | FACU | Number of Dominant S Are OBL, FACW, or FA Total Number of Dominant S Are OBL, FACW, or FA Percent of Dominant S Are OBL, FACW, or FA Prevalence Index woo Total % Cover of OBL species FACW species FACU species FACU species Column Totals Prevalence Index Hydrophytic Vegetati 1 - Rapid Test for F 2 - Dominance Test 3 - Prevalence Index data in Remarks | Species That AC: nant rata: Species That AC: rksheet: 0 0 0 75 0 75 ex = B/A = ion Indicat Hydrophytic st is >50% ex is ≤3.0 ¹ Adaptations | Mu x 1 = x 2 = x 3 = x 4 = x 5 = (A) cors: | 0 0 300 0 300 4.00 | _(A) _(B) _(A/B |
|--|----------------|-----------------------------------|------|--|---|--|--|------------------|
| erb Stratum (Plot size: | 10 10 10 | =Total Cover =Total Cover No No | | Are OBL, FACW, or FA Total Number of Domin Species Across All Stra Percent of Dominant S Are OBL, FACW, or FA Prevalence Index woo Total % Cover of OBL species FACW species FACW species FACU species TOUL species Column Totals Prevalence Index 1 - Rapid Test for Factor of the Section of the | AC: nant rata: Species Tha AC: rksheet: 0 0 0 75 0 rts ex = B/A = ion Indicat Hydrophytic st is >50% ex is ≤3.0¹ Adaptations | Mu x 1 = x 2 = x 3 = x 4 = x 5 = (A) cors: | 2 0.0% Itiply by: 0 0 0 300 300 4.00 | (A/E |
| erb Stratum (Plot size: | 10 10 10 | =Total Cover =Total Cover No No | | Percent of Dominant S Are OBL, FACW, or FA Prevalence Index won Total % Cover of OBL species FACW species FACU species FACU species Column Totals Prevalence Index 1 - Rapid Test for H 2 - Dominance Test 3 - Prevalence Index 4 - Morphological A | ata: Species That AC: rksheet: of: 0 0 75 0 75 ex = B/A = ion Indicat Hydrophytic st is >50% ex is ≤3.0¹ Adaptations | Mu x 1 = x 2 = x 3 = x 4 = x 5 = (A) cors: | 0.0% Itiply by: 0 0 300 300 4.00 | _(A/B |
| apling/Shrub Stratum (Plot size: | 10 10 10 | =Total Cover | | Are OBL, FACW, or FA Prevalence Index wood Total % Cover of OBL species FACW species FAC species FACU species TOURL species Column Totals The Prevalence Index Total 1 - Rapid Test for Faculty 1 - Prevalence Index Total 2 - Prevalence Index Total 2 - Prevalence Index Total 3 - Prevalence Index Total 3 - Prevalence Index Total 4 - Morphological 4 - Morphological 4 - Morphological 4 - Morphological 5 - Prevalence Index Total 8 - Prevalence Index Total 9 - Prevalence Index Total | AC: rksheet: of: 0 0 75 oxinity = B/A = B | Mu x 1 = x 2 = x 3 = x 4 = x 5 = (A) cors: | 0 0 0 300 0 300 4.00 | _ <u>``</u> |
| apling/Shrub Stratum (Plot size: | 10 10 10 | =Total Cover | | Total % Cover of OBL species FACW species FAC species FACU species UPL species Column Totals Prevalence Inde Hydrophytic Vegetati 1 - Rapid Test for H 2 - Dominance Test 3 - Prevalence Inde 4 - Morphological A | of: $ 0 $ $ 0 $ $ 0 $ $ 75 $ $ 0 $ $ 75 $ $ ex = B/A = $ $ ion Indicat $ $ Hydrophytic $ st is >50% $ ex is \le 3.0^{1} $ $ Adaptations$ | x 1 = x 2 = x 3 = x 4 = x 5 = (A) | 0 0 0 300 0 300 4.00 | — — — — |
| apling/Shrub Stratum (Plot size: 15ft²) erb Stratum (Plot size: 5ft²) Andropogon virginicus Trifolium repens Trifolium pratense Festuca rubra | 10 10 10 | =Total Cover | | OBL species FACW species FAC species FACU species 7 UPL species Column Totals Prevalence Inde 1 - Rapid Test for H 2 - Dominance Tes 3 - Prevalence Inde 4 - Morphological A | 0 0 0 75 0 75 ex = B/A = ion Indicat Hydrophytic st is >50% ex is ≤3.0 ¹ Adaptations | x 1 = x 2 = x 3 = x 4 = x 5 = (A) | 0 0 0 300 0 300 4.00 | — — — — |
| erb Stratum (Plot size: 5ft²) Andropogon virginicus Trifolium repens Trifolium pratense Festuca rubra | 10 10 10 | =Total Cover | | FACW species FAC species FACU species Output species Column Totals Prevalence Inde 1 - Rapid Test for H 2 - Dominance Tes 3 - Prevalence Inde 4 - Morphological A | 0 0 75 0 75 $ex = B/A = $ ion Indicate Hydrophytic st is >50% $ex is \le 3.0^{1}$ Adaptations | x 2 = x 3 = x 4 = x 5 = (A) tors: | 0 0 300 0 300 4.00 | (B |
| erb Stratum (Plot size: 5ft²) Andropogon virginicus Trifolium repens Trifolium pratense Festuca rubra | 10 10 10 | =Total Cover | | FACW species FAC species FACU species Output species Column Totals Prevalence Inde 1 - Rapid Test for H 2 - Dominance Tes 3 - Prevalence Inde 4 - Morphological A | 0 0 75 0 75 $ex = B/A = $ ion Indicate Hydrophytic st is >50% $ex is \le 3.0^{1}$ Adaptations | x 3 = x 4 = x 5 = (A) tors: | 0 300 0 300 4.00 | (B |
| erb Stratum (Plot size: 5ft²) Andropogon virginicus Trifolium repens Trifolium pratense Festuca rubra | 10 10 10 | =Total Cover | | FAC species FACU species 7 UPL species Column Totals 7 Prevalence Inde Hydrophytic Vegetati 1 - Rapid Test for H 2 - Dominance Test 3 - Prevalence Inde 4 - Morphological A | 0 75 0 75 0 0 75 0 0 0 0 0 0 0 0 0 0 | x 4 = x 5 = (A) tors: | 300 0 300 4.00 | (E |
| erb Stratum (Plot size: 5ft²) Andropogon virginicus Trifolium repens Trifolium pratense Festuca rubra | 10 10 10 | =Total Cover | | FACU species UPL species Column Totals Prevalence Inde Hydrophytic Vegetati 1 - Rapid Test for H 2 - Dominance Tes 3 - Prevalence Inde 4 - Morphological A | 75 0 75 $ex = B/A = 1$ $ex =$ | x 5 = (A) tors: | 0 300 4.00 tation | (E |
| erb Stratum (Plot size: 5ft²) Andropogon virginicus Trifolium repens Trifolium pratense Festuca rubra | 10 10 10 | No No | | UPL species Column Totals Prevalence Inde Hydrophytic Vegetati 1 - Rapid Test for H 2 - Dominance Tes 3 - Prevalence Inde 4 - Morphological A | 0 75 ex = B/A = ion Indicat Hydrophytic st is >50% ex is ≤3.0¹ Adaptations | (A) tors: c Vege | 300 4.00 tation | (E |
| erb Stratum (Plot size: 5ft²) Andropogon virginicus Trifolium repens Trifolium pratense Festuca rubra | 10 10 10 | No No | | Column Totals 7 Prevalence Inde Hydrophytic Vegetati 1 - Rapid Test for H 2 - Dominance Tes 3 - Prevalence Inde 4 - Morphological A | 75 ex = B/A = ion Indicate Hydrophytic st is >50% ex is $\leq 3.0^{1}$ Adaptations | (A) tors: c Vege | 300 4.00 tation | (B |
| erb Stratum (Plot size: 5ft²) Andropogon virginicus Trifolium repens Trifolium pratense Festuca rubra | 10 10 10 | No No | | Prevalence Inde Hydrophytic Vegetati 1 - Rapid Test for H 2 - Dominance Tes 3 - Prevalence Inde 4 - Morphological A | ex = B/A = ion Indicat Hydrophytic st is >50% ex is ≤3.0 ¹ Adaptations | t ors: | 4.00 tation | |
| erb Stratum (Plot size: 5ft²) Andropogon virginicus Trifolium repens Trifolium pratense Festuca rubra | 10 10 10 | No No | | Hydrophytic Vegetati 1 - Rapid Test for H 2 - Dominance Tes 3 - Prevalence Inde 4 - Morphological A | ion Indicat Hydrophytic st is >50% ex is ≤3.0 ¹ Adaptations | t ors : | tation | _ |
| Andropogon virginicus Trifolium repens Trifolium pratense Festuca rubra | 10 10 10 | No No | | 1 - Rapid Test for H 2 - Dominance Tes 3 - Prevalence Inde | Hydrophytionst is >50% ex is ≤3.0 ¹ Adaptations | c Vege | | |
| Andropogon virginicus Trifolium repens Trifolium pratense Festuca rubra | 10 10 | No | | 2 - Dominance Tes 3 - Prevalence Inde 4 - Morphological A | st is >50% ex is ≤3.0 ¹ Adaptations | | | |
| Andropogon virginicus Trifolium repens Trifolium pratense Festuca rubra | 10 10 | No | | 3 - Prevalence Inde | ex is ≤3.0 ¹ Adaptations | s¹ (Prov | vide | |
| Trifolium repens Trifolium pratense Festuca rubra | 10 10 | No | | 4 - Morphological A | Adaptations | s¹ (Prov | vide | |
| Trifolium pratense Festuca rubra | | No | | l —— | | | iao | |
| Festuca rubra | 30 | | FACU | data iii rtomante | s or on a se | | | |
| Rubus allegheniensis | | Yes | FACU | Problematic Hydro | phytic Veg | etation | ¹ (Explaii | า) |
| | 15 | Yes | FACU | | | | | |
| | | | | ¹ Indicators of hydric so be present, unless dist | | | | nust |
| | | | | Definitions of Vegeta | tion Strata | a: | | |
| | | | | Tree Woody plants 3 |) in (7.6 an | m) a= m | متم نم طند | - m ata |
| | | | | Tree – Woody plants 3 at breast height (DBH) | | | | ımete |
| | | | | Sapling/shrub – Woo | du planta la | ooo tha | n 2 in Di | οц |
| · | | | | and greater than or eq | | | | ווכ |
| | | | | Harb All barbagague | , (non woo | du) plai | ata raga | rdloor |
| | 75 | =Total Cover | | Herb – All herbaceous of size, and woody pla | | | | uless |
| oody Vine Stratum (Plot size: 15ft ²) | | - | | Woody vines – All wo | advivinaa a | araatar | than 2 O | 0 # :- |
| | | | | height. | lody viries (| greater | liiaii 3.2 | O IL III |
| | | | | - | | | | |
| | | | | Hydrophytic | | | | |
| | | | | Vegetation Present? Y | es | No | X | |
| | | =Total Cover | | | | | | |
| emarks: (Include photo numbers here or on a separate | aboot) | • | | <u> </u> | | | | |

| Profile Desc | cription: (Describe to | o the de | pth needed to docu | ıment t | he indica | tor or co | confirm the absence of indicators.) | |
|------------------------|---------------------------------------|------------|---|---------------------------------------|-------------------|------------------|---|------------|
| Depth | Matrix | | Redox | k Featur | res | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture Remarks | |
| 0-8 | 10YR 4/4 | 100 | | | | | Loamy/Clayey | |
| 8-22 | 10YR 4/3 | 100 | | | | | Loamy/Clayey | |
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| ¹ Type: C=C | oncentration, D=Deple | etion. RN | /=Reduced Matrix. N | IS=Mas | ked San | d Grains | ² Location: PL=Pore Lining, M=Matrix. | |
| Hydric Soil | · | <i>y</i> , | | | ntou ourn | . | Indicators for Problematic Hydric Soils ³ : | |
| - Histosol | (A1) | | - Polyvalue Belo | w Surfa | ce (S8) (I | LRR R, | 2 cm Muck (A10) (LRR K, L, MLRA 149B | 3) |
| - Histic Ep | pipedon (A2) | | MLRA 149B | | | | Coast Prairie Redox (A16) (LRR K, L, R) | |
| | istic (A3) | | - Thin Dark Surfa | | | | | |
| | en Sulfide (A4) | | - High Chroma S | | | - | Polyvalue Below Surface (S8) (LRR K, L) | |
| | d Layers (A5) | (0.4.4) | Loamy Mucky | | | R K, L) | - Thin Dark Surface (S9) (LRR K, L) | D) |
| | d Below Dark Surface | (A11) | - Loamy Gleyed | | (F2) | | - Iron-Manganese Masses (F12) (LRR K, L | |
| | ark Surface (A12) Mucky Mineral (S1) | | Depleted MatrixRedox Dark Su | | E6) | | Piedmont Floodplain Soils (F19) (MLRA 1 Mesic Spodic (TA6) (MLRA 144A, 145, 14 | |
| | Gleyed Matrix (S4) | | - Depleted Dark | | | | - Red Parent Material (F21) | 49D) |
| | Redox (S5) | | - Redox Depress | | | | - Very Shallow Dark Surface (F22) | |
| | Matrix (S6) | | - Marl (F10) (LR | | 0) | | - Other (Explain in Remarks) | |
| | rface (S7) | | | · · · · · · · · · · · · · · · · · · · | | | outer (Explain in resinance) | |
| | , | | | | | | | |
| | | on and v | vetland hydrology mu | ıst be p | resent, ur | nless dist | sturbed or problematic. | |
| | Layer (if observed): | | | | | | | |
| Type: | | | | | | | | |
| Depth (i | ncnes): | | | | | | Hydric Soil Present? Yes No _X | _ |
| Remarks: | s had small shale/grav | el intern | nized with matrix | | | | | |
| Oon samples | s riad siriali silale/grav | CI IIICIII | iized with matrix. | | | | | |
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| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 03/29/18 |
|---|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-5 |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| • | relief (concave, convex,etc): Convex Slope %: 1 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.065008 | Long: -82.907433 Datum: 1983 |
| Soil Map Unit Name: Pewamo silty clay loam, low carbonate till, 0 to 2 per | |
| | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No, Soil No, or Hydrology No significantly distur | |
| Are Vegetation No, Soil No, or Hydrology No naturally problems | atic? (If needed, explain any answers in Remarks.) |
| SUMMARY OF FINDINGS – Attach site map showing sam | pling point locations, transects, important features, etc. |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area |
| Hydric Soil Present? Yes No X | within a Wetland? Yes No X |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: |
| Remarks: (Explain alternative procedures here or in a separate report.) | ,,., |
| Tremains. (Explain alternative procedures here of in a separate report.) | |
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| 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) |
| - Surface Water (A1) - Water-Stained Leaves (| B9) - Drainage Patterns (B10) |
| - High Water Table (A2) - Aquatic Fauna (B13) | - Moss Trim Lines (B16) |
| Saturation (A3) - Marl Deposits (B15) | - Dry-Season Water Table (C2) |
| Water Marks (B1) Hydrogen Sulfide Odor (| (C1) - Crayfish Burrows (C8) |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) |
| Drift Deposits (B3) Presence of Reduced In | on (C4) Stunted or Stressed Plants (D1) |
| Algal Mat or Crust (B4) Recent Iron Reduction in | n Tilled Soils (C6) Geomorphic Position (D2) |
| Iron Deposits (B5) Thin Muck Surface (C7) | Shallow Aquitard (D3) |
| Inundation Visible on Aerial Imagery (B7) Other (Explain in Remar | rks) Microtopographic Relief (D4) |
| Sparsely Vegetated Concave Surface (B8) | FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes No X Depth (inches): | : <u></u> |
| Water Table Present? Yes No X Depth (inches): | : <u></u> |
| Saturation Present? Yes No X Depth (inches): | : Wetland Hydrology Present? Yes No _X |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| | |
| Remarks: | |
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VEGETATION – Use scientific names of plants. Sampling Point: UP-5 Absolute Dominant Indicator <u>Tree Stratum</u> (Plot size: 30ft²) % Cover Species? Status **Dominance Test worksheet:** 1. Pyrus calleryana UPL Yes Number of Dominant Species That 2. Are OBL, FACW, or FAC: 0 (A) 3. **Total Number of Dominant**

| 4 | | | | Species Across All Strata: | 5 (B) | |
|---|------------|--------------|------|--|-----------------|----|
| 5 | | | | Percent of Dominant Species That | | |
| 6. | | | | · <u> </u> | 0.0% (A/E | 3) |
| 7 | | | | Prevalence Index worksheet: | | |
| | 5 | =Total Cover | | Total % Cover of: Mul | Itiply by: | |
| Sapling/Shrub Stratum (Plot size: 15ft ²) | | | | OBL species 0 x 1 = | | |
| 1. Lonicera japonica | 10 | Yes | FACU | FACW species 0 x 2 = | 0 | |
| 2. Prunus americana | 30 | Yes | UPL | FAC species 0 x 3 = | 0 | |
| 3 | | _ | | FACU species 40 x 4 = | 160 | |
| 4 | | | | UPL species 35 x 5 = | 175 | |
| 5 | | _ | | Column Totals 75 (A) | 335 (E | B) |
| 6. | | | | Prevalence Index = B/A = | 4.47 | |
| 7. | | | | Hydrophytic Vegetation Indicators: | | _ |
| | 40 | =Total Cover | | 1 - Rapid Test for Hydrophytic Veget | ation | |
| Herb Stratum (Plot size: 5ft ²) | | | | 2 - Dominance Test is >50% | | |
| Andropogon virginicus | 10 | Yes | FACU | 3 - Prevalence Index is ≤3.0 ¹ | | |
| 2. Rubus allegheniensis | 20 | Yes | FACU | 4 - Morphological Adaptations ¹ (Prov | | |
| 3 | | | | data in Remarks or on a separate | sheet) | |
| 4 | | | | Problematic Hydrophytic Vegetation ¹ | (Explain) | |
| 5 | | | | ¹ Indicators of hydric soil and wetland hyd | drology must | |
| 6. | | | | be present, unless disturbed or problema | atic. | |
| 7 | | | | Definitions of Vegetation Strata: | | |
| 8 | | | | Tree – Woody plants 3 in. (7.6 cm) or mo | ore in diamete | er |
| 9 | | | | at breast height (DBH), regardless of he | ight. | |
| 10 | | _ | | Sapling/shrub – Woody plants less than | n 3 in. DBH | |
| 11 | | | | and greater than or equal to 3.28 ft (1 m | | |
| 12 | | | | Herb – All herbaceous (non-woody) plar | nts, regardles | s |
| | 30 | =Total Cover | | of size, and woody plants less than 3.28 | | J |
| Woody Vine Stratum (Plot size:15ft ²) | | | | Woody vines – All woody vines greater | than 3.28 ft ir | n |
| 1 | | | | height. | | |
| 2 | | _ | | | | |
| 3. | | | | Hydrophytic Vegetation | | |
| 4. | | | | ~ | Χ | |
| | | =Total Cover | | | | |
| Remarks: (Include photo numbers here or on a separ | ate sheet. |) | | • | | |
| | | | | | | |

| Depth Matrix Redock Features | Profile Desci | ription: (Describe to | the de | pth needed to docu | ıment th | ne indica | tor or c | onfirm the absence o | of indicators.) | | |
|--|---------------|-----------------------|-----------|--------------------------|------------|-------------------|------------------|--------------------------|---------------------------|-------------|----------------------|
| Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. | Depth | Matrix | | | k Featur | | | | | | |
| *Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. *Hydric Soil Indicators: - Histosol (A1) - Polyvalue Below Surface (S8) (LRR R, HLRA 1498) - Black Histic Epipedon (A2) - Histosol (A3) - Thin Dark Surface (S9) (LRR R, MLRA 1498) - Hydroen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Depleted Below Dark Surface (A11) - Depleted Below Dark Surface (A11) - Stratified Layers (A5) - Sandy Mucky Mineral (F1) (LRR K, L) - Thick Dark Surface (A12) - Sandy Mucky Mineral (S9) - Sandy Redox (S5) - Redox Dark Surface (F6) - Mari (F10) (LRR K, L) - Thin Dark Surface (S9) (LRR N, L) - Thin Dark Surface (S9) - Neelox Spodic (TA8) (MLRA 1498) - Red Parent Material (S72) - Neelox Spodic (TA8) (MLRA 14498) - Red Parent Material (S72) - Other (Explain in Remarks) - Thin Dark Surface (S7) - Other (Explain in Remarks) - Thin Dark Surface (S7) - Other (Explain in Remarks) - Hydric Soil Present? - Yes No X | (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Re | marks | |
| Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Hydric Soil Indicators: Histic Epipedon (A2) Black Histic (A3) Thin Dark Surface (S8) (LRR R, MLRA 149B) Black Histic (A3) Hydrogen Sulfide (A4) Hydrogen Sulfide (A4) High Chroma Sands (S11) (LRR K, L) Depleted Below Dark Surface (A11) Loamy Mucky Mineral (F1) (LRR K, L) Depleted Below Dark Surface (A12) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (F2) Sandy Mucky Mineral (S1) Redox Dark Surface (F7) Sandy Gleyed Matrix (S4) Dark Surface (S7) Thin Dark Surface (F7) Sandy Gleyed Matrix (S4) Depleted Dark Surface (F7) Sandy Redox (S5) Redox Depressions (F8) Stripped Matrix (S6) Dark Surface (S7) Marl (F10) (LRR K, L) Other (Explain in Remarks) Hydric Soil Present? Yes No X | 0-8 | 10YR 3/1 | 100 | | | | | Loamy/Clayey | | | |
| Hydric Soil Indicators: - Histosol (A1) - Histosol (A2) - Histosol (A2) - Histosol (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Thick Dark Surface (A12) - Thick Dark Surface (A12) - Sandy Mucky Mineral (S1) - Sandy Mucky Mineral (S1) - Sandy Gleyed Matrix (S4) - Sandy Redox (S5) - Redox Dark Surface (F6) - Sandy Redox (S5) - Redox Depressions (F8) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Dark Surface (S7) **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.** - Hydroc Soil Present? - 2 cm Mucky (A10) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below S | 8-22 | 10YR 4/3 | 98 | 10YR 5/6 | 2 | <u>C</u> | <u>M</u> | Loamy/Clayey | Distinct redox | k concentra | tions |
| Hydric Soil Indicators: - Histosol (A1) - Polyvalue Below Surface (S8) (LRR R, - Coast Prairie Redox (A16) (LRR K, L, R) - Histic Epipedon (A2) - MLRA 149B) - Black Histic (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Depleted Below Dark Surface (A11) - Thick Dark Surface (A12) - Depleted Below Dark Surface (A12) - Sandy Mucky Mineral (S1) - Sandy Mucky Mineral (S1) - Sandy Gleyed Matrix (S4) - Sandy Redox (S5) - Redox Dark Surface (F6) - Sandy Redox (S5) - Redox Depressions (F8) - Stripped Matrix (S6) - Dark Surface (S7) - Marl (F10) (LRR K, L) - Dark Surface (S7) - Hydrogen Sulfide (A4) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Bel | | | | | | | | | | | |
| Hydric Soil Indicators: - Histosol (A1) - Polyvalue Below Surface (S8) (LRR R, - Coast Prairie Redox (A16) (LRR K, L, R) - Histic Epipedon (A2) - MLRA 149B) - Black Histic (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Depleted Below Dark Surface (A11) - Thick Dark Surface (A12) - Depleted Below Dark Surface (A12) - Sandy Mucky Mineral (S1) - Sandy Mucky Mineral (S1) - Sandy Gleyed Matrix (S4) - Sandy Redox (S5) - Redox Dark Surface (F6) - Sandy Redox (S5) - Redox Depressions (F8) - Stripped Matrix (S6) - Dark Surface (S7) - Marl (F10) (LRR K, L) - Dark Surface (S7) - Hydrogen Sulfide (A4) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Bel | | | | | | | | | | | |
| Hydric Soil Indicators: - Histosol (A1) - Polyvalue Below Surface (S8) (LRR R, - Coast Prairie Redox (A16) (LRR K, L, R) - Histic Epipedon (A2) - MLRA 149B) - Black Histic (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Depleted Below Dark Surface (A11) - Thick Dark Surface (A12) - Depleted Below Dark Surface (A12) - Sandy Mucky Mineral (S1) - Sandy Mucky Mineral (S1) - Sandy Gleyed Matrix (S4) - Sandy Redox (S5) - Redox Dark Surface (F6) - Sandy Redox (S5) - Redox Depressions (F8) - Stripped Matrix (S6) - Dark Surface (S7) - Marl (F10) (LRR K, L) - Dark Surface (S7) - Hydrogen Sulfide (A4) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Bel | | | | | | | | | | | |
| Hydric Soil Indicators: - Histosol (A1) - Histosol (A2) - Histosol (A2) - Histosol (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Thick Dark Surface (A12) - Thick Dark Surface (A12) - Sandy Mucky Mineral (S1) - Sandy Mucky Mineral (S1) - Sandy Gleyed Matrix (S4) - Sandy Redox (S5) - Redox Dark Surface (F6) - Sandy Redox (S5) - Redox Depressions (F8) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Dark Surface (S7) **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.** - Hydroc Soil Present? - 2 cm Mucky (A10) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below S | | | | | | | | | | | |
| Hydric Soil Indicators: - Histosol (A1) - Histosol (A2) - Histosol (A2) - Histosol (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Thick Dark Surface (A12) - Thick Dark Surface (A12) - Sandy Mucky Mineral (S1) - Sandy Mucky Mineral (S1) - Sandy Gleyed Matrix (S4) - Sandy Redox (S5) - Redox Dark Surface (F6) - Sandy Redox (S5) - Redox Depressions (F8) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Dark Surface (S7) **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.** - Hydroc Soil Present? - 2 cm Mucky (A10) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below S | | | | | | | | | | | |
| Hydric Soil Indicators: - Histosol (A1) - Histosol (A2) - Histosol (A2) - Histosol (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Thick Dark Surface (A12) - Thick Dark Surface (A12) - Sandy Mucky Mineral (S1) - Sandy Mucky Mineral (S1) - Sandy Gleyed Matrix (S4) - Sandy Redox (S5) - Redox Dark Surface (F6) - Sandy Redox (S5) - Redox Depressions (F8) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Dark Surface (S7) **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.** - Hydroc Soil Present? - 2 cm Mucky (A10) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below S | | | | | | | | | | | |
| Hydric Soil Indicators: - Histosol (A1) - Histosol (A2) - Histosol (A2) - Histosol (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Thick Dark Surface (A12) - Thick Dark Surface (A12) - Sandy Mucky Mineral (S1) - Sandy Mucky Mineral (S1) - Sandy Gleyed Matrix (S4) - Sandy Redox (S5) - Redox Dark Surface (F6) - Sandy Redox (S5) - Redox Depressions (F8) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Dark Surface (S7) **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.** - Hydroc Soil Present? - 2 cm Mucky (A10) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below S | | | | | | | | | | | |
| Hydric Soil Indicators: - Histosol (A1) - Histosol (A2) - Histosol (A2) - Histosol (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Thick Dark Surface (A12) - Thick Dark Surface (A12) - Sandy Mucky Mineral (S1) - Sandy Mucky Mineral (S1) - Sandy Gleyed Matrix (S4) - Sandy Redox (S5) - Redox Dark Surface (F6) - Sandy Redox (S5) - Redox Depressions (F8) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Dark Surface (S7) **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.** - Hydroc Soil Present? - 2 cm Mucky (A10) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below S | | | | | | | | | | | |
| Hydric Soil Indicators: - Histosol (A1) - Histosol (A2) - Histosol (A2) - Histosol (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Thick Dark Surface (A12) - Thick Dark Surface (A12) - Sandy Mucky Mineral (S1) - Sandy Mucky Mineral (S1) - Sandy Gleyed Matrix (S4) - Sandy Redox (S5) - Redox Dark Surface (F6) - Sandy Redox (S5) - Redox Depressions (F8) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Dark Surface (S7) **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.** - Hydroc Soil Present? - 2 cm Mucky (A10) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below S | | | | | | | | | | | |
| Hydric Soil Indicators: - Histosol (A1) - Histosol (A2) - Histosol (A2) - Histosol (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Thick Dark Surface (A12) - Thick Dark Surface (A12) - Sandy Mucky Mineral (S1) - Sandy Mucky Mineral (S1) - Sandy Gleyed Matrix (S4) - Sandy Redox (S5) - Redox Dark Surface (F6) - Sandy Redox (S5) - Redox Depressions (F8) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Dark Surface (S7) **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.** - Hydroc Soil Present? - 2 cm Mucky (A10) (LRR K, L, R) - Coast Prairie Redox (A16) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below Surface (S9) (LRR K, L) - Polyvalue Below S | ¹Type: C=Co | ncentration, D=Deple | etion, RN | | 1S=Mas | ked Sand | d Grains. | ² Location: F | L=Pore Lining, M= | | |
| - Histic Epipedon (A2) - Black Histic (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Depleted Below Dark Surface (A11) - Loamy Gleyed Matrix (F2) - Thick Dark Surface (A12) - Sandy Mucky Mineral (S1) - Sandy Mucky Mineral (S1) - Sandy Gleyed Matrix (S4) - Depleted Dark Surface (F6) - Sandy Redox (S5) - Redox Dark Surface (F7) - Sandy Redox (S5) - Redox Depressions (F8) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Dark Surface (S7) **No _ X* **Hydric Soil Present?** **Yes _ No _ X* **No _ X* **Hydric Soil Present?** **Yes _ No _ X* **No _ X* **No _ X* **Thin Dark Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S8) (LRR K, L, R) - Polyvalue Below Surface (S9) (LRR K, L) - Thin Dark Surface (S9) (LRR K, L) - Thin Dark Surface (S9) (LRR K, L) - Iron-Manganese Masses (F12) (LRR K, L) - Iron-Manganese Masses (F12) (LRR K, L) - Piedmont Floodplain Soils (F19) (MLRA 149B) - Piedmont Floodplain Soils (F1 | | | | · | | | | | | | ³ <u>.</u> |
| - Black Histic (A3) - Thin Dark Surface (S9) (LRR R, MLRA 149B) - 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Polyvalue Below Surface (S8) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Thin Dark Surface (S9) (LRR K, L) - Depleted Below Dark Surface (A11) - Loamy Gleyed Matrix (F2) - Iron-Manganese Masses (F12) (LRR K, L, R) - Thick Dark Surface (A12) - Depleted Matrix (F3) - Piedmont Floodplain Soils (F19) (MLRA 149B) - Sandy Mucky Mineral (S1) - Redox Dark Surface (F6) - Mesic Spodic (TA6) (MLRA 144A, 145, 149B) - Sandy Gleyed Matrix (S4) - Depleted Dark Surface (F7) - Red Parent Material (F21) - Sandy Redox (S5) - Redox Depressions (F8) - Very Shallow Dark Surface (F22) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Other (Explain in Remarks) - Dark Surface (S7) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No X | - Histosol (| (A1) | | - Polyvalue Belo | w Surfac | ce (S8) (I | LRR R, | - 2 cm Mu | uck (A10) (LRR K, | L, MLRA 1 | 49B) |
| - Hydrogen Sulfide (A4) - High Chroma Sands (S11) (LRR K, L) - Polyvalue Below Surface (S8) (LRR K, L) - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Thin Dark Surface (S9) (LRR K, L) - Depleted Below Dark Surface (A11) - Loamy Gleyed Matrix (F2) - Iron-Manganese Masses (F12) (LRR K, L, R) - Thick Dark Surface (A12) - Depleted Matrix (F3) - Piedmont Floodplain Soils (F19) (MLRA 149B) - Sandy Mucky Mineral (S1) - Redox Dark Surface (F6) - Mesic Spodic (TA6) (MLRA 144A, 145, 149B) - Sandy Gleyed Matrix (S4) - Depleted Dark Surface (F7) - Red Parent Material (F21) - Sandy Redox (S5) - Redox Depressions (F8) - Very Shallow Dark Surface (F22) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Other (Explain in Remarks) - Dark Surface (S7) **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.** **Restrictive Layer (if observed):** Type: Depth (inches): Hydric Soil Present? Yes No X | - Histic Epi | ipedon (A2) | | MLRA 149B) |) | | | | | | |
| - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Thin Dark Surface (S9) (LRR K, L) - Depleted Below Dark Surface (A11) - Loamy Gleyed Matrix (F2) - Iron-Manganese Masses (F12) (LRR K, L, R) - Thick Dark Surface (A12) - Depleted Matrix (F3) - Piedmont Floodplain Soils (F19) (MLRA 149B) - Sandy Mucky Mineral (S1) - Redox Dark Surface (F6) - Mesic Spodic (TA6) (MLRA 144A, 145, 149B) - Sandy Gleyed Matrix (S4) - Depleted Dark Surface (F7) - Red Parent Material (F21) - Sandy Redox (S5) - Redox Depressions (F8) - Very Shallow Dark Surface (F22) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Other (Explain in Remarks) - Dark Surface (S7) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No X | - Black His | tic (A3) | | - Thin Dark Surfa | ace (S9) | (LRR R | , MLRA | | | | |
| - Stratified Layers (A5) - Loamy Mucky Mineral (F1) (LRR K, L) - Thin Dark Surface (S9) (LRR K, L) - Depleted Below Dark Surface (A11) - Loamy Gleyed Matrix (F2) - Iron-Manganese Masses (F12) (LRR K, L, R) - Thick Dark Surface (A12) - Depleted Matrix (F3) - Piedmont Floodplain Soils (F19) (MLRA 149B) - Sandy Mucky Mineral (S1) - Redox Dark Surface (F6) - Mesic Spodic (TA6) (MLRA 144A, 145, 149B) - Sandy Gleyed Matrix (S4) - Depleted Dark Surface (F7) - Red Parent Material (F21) - Sandy Redox (S5) - Redox Depressions (F8) - Very Shallow Dark Surface (F22) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Other (Explain in Remarks) - Dark Surface (S7) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No X | - Hydroger | Sulfide (A4) | | - High Chroma S | Sands (S | 11) (LRF | R K, L) | - Polyvalu | ue Below Surface (| S8) (LRR K | (, L) |
| - Depleted Below Dark Surface (A11) - Loamy Gleyed Matrix (F2) - Iron-Manganese Masses (F12) (LRR K, L, R) - Thick Dark Surface (A12) - Depleted Matrix (F3) - Piedmont Floodplain Soils (F19) (MLRA 149B) - Sandy Mucky Mineral (S1) - Redox Dark Surface (F6) - Mesic Spodic (TA6) (MLRA 144A, 145, 149B) - Sandy Gleyed Matrix (S4) - Depleted Dark Surface (F7) - Red Parent Material (F21) - Sandy Redox (S5) - Redox Depressions (F8) - Very Shallow Dark Surface (F22) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Other (Explain in Remarks) - Dark Surface (S7) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No X | | | | | | | - | | | | , |
| Thick Dark Surface (A12) Depleted Matrix (F3) Redox Dark Surface (F6) Sandy Mucky Mineral (S1) Sandy Gleyed Matrix (S4) Redox Depressions (F8) Sandy Redox (S5) Redox Depressions (F8) Stripped Matrix (S6) Marl (F10) (LRR K, L) Marl (F10) (LRR K, L) Cherricative Layer (if observed): Type: Depth (inches): Hydric Soil Present? Piedmont Floodplain Soils (F19) (MLRA 144B) Redox Dark Surface (F6) Mesic Spodic (TA6) (MLRA 144A, 145, 149B) No X | | | (A11) | | | | , , | | | | K. L. R) |
| - Sandy Mucky Mineral (S1) - Redox Dark Surface (F6) - Mesic Spodic (TA6) (MLRA 144A, 145, 149B) - Sandy Gleyed Matrix (S4) - Depleted Dark Surface (F7) - Red Parent Material (F21) - Sandy Redox (S5) - Redox Depressions (F8) - Very Shallow Dark Surface (F22) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Other (Explain in Remarks) - Dark Surface (S7) 3 Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No X | | | () | | | _, | | | - | | |
| - Sandy Gleyed Matrix (S4) - Depleted Dark Surface (F7) - Red Parent Material (F21) - Sandy Redox (S5) - Redox Depressions (F8) - Very Shallow Dark Surface (F22) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Other (Explain in Remarks) - Dark Surface (S7) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No X | | | | | | ·6) | | | | | |
| - Sandy Redox (S5) - Redox Depressions (F8) - Very Shallow Dark Surface (F22) - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Other (Explain in Remarks) - Dark Surface (S7) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No X | | | | | | | | | | | o, 140D _/ |
| - Stripped Matrix (S6) - Marl (F10) (LRR K, L) - Other (Explain in Remarks) - Dark Surface (S7) 3Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No X | | | | | | , , | | | | | |
| Dark Surface (S7) **Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. **Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No X | | | | | | 5) | | | | | |
| ³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic. Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No X | | | | - Mari (F10) (LR | R K, L) | | | - Other (E | explain in Remarks |) | |
| Restrictive Layer (if observed): Type: | - Dark Suri | face (S7) | | | | | | | | | |
| Type: | | | on and w | vetland hydrology mu | ıst be pr | esent, ur | nless dist | turbed or problematic. | | | |
| Depth (inches): Hydric Soil Present? Yes No X | | ayer (if observed): | | | | | | | | | |
| | | | | | | | | | | | |
| Remarks. | | ches): | | | | | | Hydric Soil Prese | nt? Yes_ | No | <u>X</u> |
| | Remarks. | | | | | | | | | | |
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| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 7/11/2018 |
|---|---|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-6 |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| • | relief (concave, convex,etc): Concave Slope %: 0 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.060343 | Long: -82.906756 Datum: 1983 |
| Soil Map Unit Name: Bennington silt loam, 0 to 2 percent slopes (BeA) | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| Are Vegetation No , Soil No , or Hydrology No significantly distur | |
| Are Vegetation No , Soil No , or Hydrology No naturally problems | · — — |
| SUMMARY OF FINDINGS – Attach site map showing sam | |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area |
| Hydric Soil Present? Yes X No | within a Wetland? Yes No X |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: |
| | |
| 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) |
| Surface Water (A1) Water-Stained Leaves (| |
| - High Water Table (A2) - Aquatic Fauna (B13) | Moss Trim Lines (B16) |
| Saturation (A3) Marl Deposits (B15) | Dry-Season Water Table (C2) |
| Water Marks (B1) Hydrogen Sulfide Odor (| |
| Sediment Deposits (B2) Oxidized Rhizospheres | |
| - Drift Deposits (B3) - Presence of Reduced Ir | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction in | |
| - Iron Deposits (B5) - Thin Muck Surface (C7) | |
| Inundation Visible on Aerial Imagery (B7) Other (Explain in Remar | |
| Sparsely Vegetated Concave Surface (B8) | FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes No X Depth (inches): | |
| Water Table Present? Yes No X Depth (inches): | |
| Saturation Present? Yes No X Depth (inches): | : Wetland Hydrology Present? Yes No _X |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| Remarks: | |
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| EGETATION – Use scientific names of pl | Absolute | Dominant | Indicator | Sampling Point: | JP-6 |
|--|----------|--------------|-----------|---|------------|
| ree Stratum (Plot size:30ft ²) | % Cover | Species? | Status | Dominance 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: 0.0% | o (A/B |
| | | | | Prevalence Index worksheet: | |
| | | =Total Cover | | Total % Cover of: Multiply | by: |
| apling/Shrub Stratum (Plot size: 15ft ²) | | | | OBL species 0 x 1 = | 0 |
| | | | | FACW species 0 x 2 = | 0 |
| | | | | FAC species 0 x 3 = | 0 |
| | | - | | FACU species 90 x 4 = 3 | 360 |
| | | | | UPL species 0 x 5 = | 0 |
| | | | | Column Totals 90 (A) 3 | 360 (B |
| | | | | Prevalence Index = B/A = 4.0 | |
| | | | | Hydrophytic Vegetation Indicators: | |
| | | =Total Cover | | 1 - Rapid Test for Hydrophytic Vegetation | 1 |
| erb Stratum (Plot size: 5ft ²) | | • | | 2 - Dominance Test is >50% | |
| Festuca rubra | 75 | Yes | FACU | 3 - Prevalence Index is ≤3.0 ¹ | |
| Poa pratensis | 15 | No | FACU | 4 - Morphological Adaptations ¹ (Provide data in Remarks or on a separate shee | et) |
| | | | | Problematic Hydrophytic Vegetation ¹ (Ex | plain) |
| · | | · | | ¹ Indicators of hydric soil and wetland hydrolo be present, unless disturbed or problematic. | gy must |
| | | | | Definitions of Vegetation Strata: | |
| | | | | Tree – Woody plants 3 in. (7.6 cm) or more in at breast height (DBH), regardless of height. | n diamete |
| | | | | | |
| i | | | | Sapling/shrub – Woody plants less than 3 ir and greater than or equal to 3.28 ft (1 m) tall. | |
| 2. | 90 | =Total Cover | | Herb – All herbaceous (non-woody) plants, re of size, and woody plants less than 3.28 ft tal | |
| /oody Vine Stratum (Plot size: 15ft ²) | | • | | Woody vines – All woody vines greater than | 3.28 ft in |
| | | | | height. | |
| · . | | | | Hydrophytic | |
| | | | | Vegetation | |
| | | | | Present? Yes No X | |
| | | =Total Cover | | | |

| Profile Des | cription: (Describe t | o the de | pth needed to docu | ıment tl | ne indica | tor or co | onfirm the absence o | f indicators.) |
|---|--|-----------|---|---|--|--------------------------------|--|---|
| Depth | Matrix | | Redox | x Featur | es | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 3/2 | 98 | 10YR 5/8 | 2 | C | M | Loamy/Clayey | Prominent redox concentrations |
| 8-16 | 10YR 4/2 | 95 | 10YR 5/6 | 5 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 98 | 10YR 5/6 | 2 | <u>C</u> | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | | | <u> </u> | | | | |
| | | | | | | | | |
| | oncentration, D=Depl | etion, RI | M=Reduced Matrix, M | /IS=Mas | ked Sand | d Grains. | | L=Pore Lining, M=Matrix. |
| - Black H - Hydroge - Stratifie X Deplete - Thick Di - Sandy M - Sandy F - Stripped - Dark Su | (A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) d Below Dark Surface ark Surface (A12) Mucky Mineral (S1) Gleyed Matrix (S4) Redox (S5) d Matrix (S6) urface (S7) | | - Polyvalue Belo MLRA 149B - Thin Dark Surfa - High Chroma S - Loamy Mucky I - Loamy Gleyed X Depleted Matrix - Redox Dark Surfa - Depleted Dark - Redox Depress - Marl (F10) (LR |) ace (S9) Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F6 R K, L) | (LRR R 611) (LRI (F1) (LRI F2) 66) (F7) | , MLRA 1 R K, L) R K, L) | - 2 cm Mu - Coast Pi - 5 cm Mu - Polyvalu - Thin Dar - Iron-Mar - Piedmor - Mesic Si - Red Par - Very Sha - Other (E | or Problematic Hydric Soils ³ : ack (A10) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R) acky Peat or Peat (S3) (LRR K, L, R) be Below Surface (S8) (LRR K, L) ck Surface (S9) (LRR K, L) aganese Masses (F12) (LRR K, L, R) at Floodplain Soils (F19) (MLRA 149B) podic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) allow Dark Surface (F22) explain in Remarks) |
| Type: Depth (i | Layer (if observed):nches): | | | | | | Hydric Soil Presei | nt? Yes_X_No |
| Remarks: | | | | | | | 1 | |
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| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 7/11/2018 |
|---|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-7 |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W |
| | relief (concave, convex,etc): Concave Slope %: 0 |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.060355 | Long: -82.907259 Datum: 1983 |
| Soil Map Unit Name: Bennington silt loam, 0 to 2 percent slopes (BeA) | NWI classification: Upland |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) |
| | |
| Are Vegetation No , Soil No , or Hydrology No significantly distur | |
| Are Vegetation No, Soil No, or Hydrology No naturally problems SUMMARY OF FINDINGS – Attach site map showing sam | |
| Attach site map showing same | philip point locations, transcots, important leatures, etc. |
| Hydrophytic Vegetation Present? Yes NoX | Is the Sampled Area |
| Hydric Soil Present? Yes X No | within a Wetland? Yes No X |
| Wetland Hydrology Present? Yes No _X | If yes, optional Wetland Site ID: |
| Remarks: (Explain alternative procedures here or in a separate report.) | |
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| 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) |
| - Surface Water (A1) - Water-Stained Leaves (I | B9) - Drainage Patterns (B10) |
| - High Water Table (A2) - Aquatic Fauna (B13) | - Moss Trim Lines (B16) |
| - Saturation (A3) - Marl Deposits (B15) | - Dry-Season Water Table (C2) |
| - Water Marks (B1) - Hydrogen Sulfide Odor (| (C1) - Crayfish Burrows (C8) |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | on Living Roots (C3) Saturation Visible on Aerial Imagery (C9) |
| _ Drift Deposits (B3) _ Presence of Reduced Iro | on (C4) Stunted or Stressed Plants (D1) |
| Algal Mat or Crust (B4) Recent Iron Reduction in | n Tilled Soils (C6) Geomorphic Position (D2) |
| Iron Deposits (B5) Thin Muck Surface (C7) | Shallow Aquitard (D3) |
| Inundation Visible on Aerial Imagery (B7) Other (Explain in Remar | rks) Microtopographic Relief (D4) |
| Sparsely Vegetated Concave Surface (B8) | FAC-Neutral Test (D5) |
| Field Observations: | |
| Surface Water Present? Yes No _X Depth (inches): | : <u> </u> |
| Water Table Present? Yes No X Depth (inches): | : |
| Saturation Present? Yes No X Depth (inches): | : Wetland Hydrology Present? Yes No _X |
| (includes capillary fringe) | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: |
| | |
| | |
| Remarks: | |
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VEGETATION – Use scientific names of plants. Sampling Point: UP-7 Absolute Dominant Indicator <u>Tree Stratum</u> (Plot size: ____30ft²) % Cover Species? Status **Dominance Test worksheet:** Number of Dominant Species That 2. Are OBL, FACW, or FAC: 0 (A) 3. **Total Number of Dominant** Species Across All Strata: 4. (B) 5. Percent of Dominant Species That 6. Are OBL, FACW, or FAC: 0.0% (A/B) Prevalence Index worksheet: =Total Cover Total % Cover of: Multiply by: Sapling/Shrub Stratum (Plot size: 15ft² OBL species x 1 = **FACW** species 0 x 2 = 0 FAC species x 3 = 0 90 3. FACU species x 4 = 360 4. UPL species 0 x 5 = 5. Column Totals 90 (A) 360 Prevalence Index = B/A =4.00 6. **Hydrophytic Vegetation Indicators:** 7. =Total Cover 1 - Rapid Test for Hydrophytic Vegetation Herb Stratum (Plot size: 5ft²) 2 - Dominance Test is >50% Festuca rubra 75 Yes **FACU** 3 - Prevalence Index is ≤3.01 4 - Morphological Adaptations¹ (Provide 2. Poa pratensis 15 No **FACU** data in Remarks or on a separate sheet) 3. 4. Problematic Hydrophytic Vegetation¹ (Explain) 5. ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 6. **Definitions of Vegetation Strata:** 7. 8. Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless 90 =Total Cover of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15ft²) Woody vines - All woody vines greater than 3.28 ft in 1. height. 2. Hydrophytic 3. Vegetation Present? Yes No X =Total Cover Remarks: (Include photo numbers here or on a separate sheet.)

| Profile Desc | cription: (Describe to | o the de | - | | | tor or co | confirm the absence of indicators.) |
|---------------------------|--------------------------|-----------|---------------------------------------|-----------|-------------------|------------------|--|
| Depth | Matrix | | | r Featur | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture Remarks |
| 0-8 | 10YR 3/2 | 98 | 10YR 5/8 | 2 | <u>C</u> | <u>M</u> | Loamy/Clayey Prominent redox concentrations |
| 8-16 | 10YR 4/2 | 95 | 10YR 5/6 | 5 | <u>C</u> | M | Loamy/Clayey Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 98 | 10YR 5/6 | 2 | <u>C</u> | <u>M</u> | Loamy/Clayey Prominent redox concentrations |
| | | _ | | _ | | _ | |
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| ¹ Type: C=C | oncentration, D=Deple | etion, RN | M=Reduced Matrix, M | 1S=Mas | ked Sand | d Grains. | ² Location: PL=Pore Lining, M=Matrix. |
| Hydric Soil | | | , | | | | Indicators for Problematic Hydric Soils ³ : |
| - Histosol | (A1) | | - Polyvalue Belo | w Surfac | ce (S8) (I | LRR R, | - 2 cm Muck (A10) (LRR K, L, MLRA 149B) |
| - Histic E | pipedon (A2) | | MLRA 149B) |) | | | - Coast Prairie Redox (A16) (LRR K, L, R) |
| - Black Hi | istic (A3) | | - Thin Dark Surfa | ace (S9) | (LRR R | , MLRA | 149B) - 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) |
| - Hydroge | en Sulfide (A4) | | - High Chroma S | ands (S | 11) (LRF | R K, L) | - Polyvalue Below Surface (S8) (LRR K, L) |
| - Stratified | d Layers (A5) | | - Loamy Mucky I | Mineral (| (F1) (LRI | R K, L) | Thin Dark Surface (S9) (LRR K, L) |
| X Deplete | d Below Dark Surface | (A11) | - Loamy Gleyed | Matrix (| F2) | | - Iron-Manganese Masses (F12) (LRR K, L, R |
| | ark Surface (A12) | | X Depleted Matrix | | | | - Piedmont Floodplain Soils (F19) (MLRA 149 |
| - Sandy N | Mucky Mineral (S1) | | - Redox Dark Su | rface (F | 6) | | - Mesic Spodic (TA6) (MLRA 144A, 145, 149E |
| - Sandy C | Bleyed Matrix (S4) | | - Depleted Dark | Surface | (F7) | | - Red Parent Material (F21) |
| - Sandy F | Redox (S5) | | - Redox Depress | sions (F | 3) | | - Very Shallow Dark Surface (F22) |
| - Stripped | Matrix (S6) | | - Marl (F10) (LR l | R K, L) | | | - Other (Explain in Remarks) |
| - Dark Su | rface (S7) | | | | | | |
| ³ Indicators o | f hydrophytic vegetation | on and w | vetland hydrology mu | ıst be pr | esent, ur | nless dist | sturbed or problematic. |
| | Layer (if observed): | | , , , , , , , , , , , , , , , , , , , | | ., . | | |
| Type: | , | | | | | | |
| Depth (i | nches): | | | | | | Hydric Soil Present? Yes X No |
| Remarks: | | | | | | | |
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| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 7/11/2018 | | | | | | | |
|---|---|--|--|--|--|--|--|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP | | | | | | | |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W | | | | | | | |
| | relief (concave, convex,etc): Concave Slope %: 0 | | | | | | | |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.060354 | Long: -82.907815 Datum: 1983 | | | | | | | |
| Soil Map Unit Name: Pewamo silty clay loam, low carbonate till, 0 to 2 perc | | | | | | | | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) | | | | | | | |
| Are Vegetation No , Soil No , or Hydrology No significantly disturb | | | | | | | | |
| Are Vegetation No , Soil No , or Hydrology No naturally problema | | | | | | | | |
| SUMMARY OF FINDINGS – Attach site map showing sam | | | | | | | | |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area | | | | | | | |
| Hydric Soil Present? Yes X No | within a Wetland? Yes No X | | | | | | | |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: | | | | | | | |
| HANDEOLOGA | | | | | | | | |
| HYDROLOGY | | | | | | | | |
| Wetland Hydrology Indicators: | Secondary Indicators (minimum of two required) | | | | | | | |
| Primary Indicators (minimum of one is required; check all that apply) | | | | | | | | |
| - Surface Water (A1) - Water-Stained Leaves (B | | | | | | | | |
| - High Water Table (A2) - Aquatic Fauna (B13) - Saturation (A3) - Marl Deposits (B15) | - Moss Trim Lines (B16) - Dry-Season Water Table (C2) | | | | | | | |
| - Saturation (A3) - Marl Deposits (B15) - Water Marks (B1) - Hydrogen Sulfide Odor (| | | | | | | | |
| - Sediment Deposits (B2) - Oxidized Rhizospheres of | | | | | | | | |
| - Drift Deposits (B3) - Presence of Reduced Iro | | | | | | | | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction in | <u> </u> | | | | | | | |
| - Iron Deposits (B5) - Thin Muck Surface (C7) | - Shallow Aquitard (D3) | | | | | | | |
| - Inundation Visible on Aerial Imagery (B7) - Other (Explain in Remar | | | | | | | | |
| - Sparsely Vegetated Concave Surface (B8) | - FAC-Neutral Test (D5) | | | | | | | |
| Field Observations: | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| <u> </u> | | | | | | | | |
| Saturation Present? Yes No X Depth (inches): (includes capillary fringe) | Wetland Hydrology Present? Yes No X | | | | | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | | | | | | | | |
| Dosonbe Nosoraea Data (stream gaage, memoring won, acriai priotos, pre | vious inspections), il avallable. | | | | | | | |
| Remarks: | | | | | | | | |
| Normand. | | | | | | | | |
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| Absolute | Dominant | Indicator | | _ | | |
|----------|---------------|--------------------------------------|--|---|--|--|
| % Cover | Species? | Status | Dominance Test worksheet: | | | |
| <u> </u> | | | 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: 0.0% | (A/E | | |
| | | | Prevalence Index worksheet: | | | |
| | =Total Cover | | Total % Cover of: Multiply by: | | | |
| _) | | | OBL species 0 x 1 = 0 | | | |
| | | | FACW species 0 x 2 = 0 | | | |
| | | | FAC species 0 x 3 = 0 | | | |
| | | | FACU species 90 x 4 = 360 | | | |
| | | | UPL species 0 x 5 = 0 | | | |
| | | | Column Totals 90 (A) 360 | (B | | |
| | · | | Prevalence Index = B/A = 4.00 | _ | | |
| | | | Hydrophytic Vegetation Indicators: | | | |
| | =Total Cover | | 1 - Rapid Test for Hydrophytic Vegetation | | | |
| | • | | 2 - Dominance Test is >50% | | | |
| 75 | Yes | FACU | 3 - Prevalence Index is ≤3.0 ¹ | | | |
| 15 | No | FACU | 4 - Morphological Adaptations ¹ (Provide data in Remarks or on a separate sheet) | | | |
| | · | | Problematic Hydrophytic Vegetation ¹ (Explain) | | | |
| _ | | | Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | |
| _ | | | Definitions of Vegetation Strata: | | | |
| _ | · | | | mete | | |
| _ | | | | . Ц | | |
| | | | and greater than or equal to 3.28 ft (1 m) tall. | 11 | | |
| | -Total Cayor | | | seelt | | |
| 90 | = rotal Cover | | | | | |
| _/ | | | Woody vines – All woody vines greater than 3.28 height. | ft in | | |
| _ | | | | | | |
| | | | Hydrophytic | | | |
| | | | Present? Yes No X | | | |
| _ | =Total Cover | | - - | | | |
| | | =Total Cover=Total Cover=Total Cover | =Total Cover =Total Cover =Total Cover T5 Yes FACU 15 No FACU 90 =Total Cover | Are OBL, FACW, or FAC: Total Number of Dominant Species Across All Strata: Percent of Dominant Species That Are OBL, FACW, or FAC: O.0% Prevalence Index worksheet: Total % Cover of: Multiply by: OBL species Note 1 = 0 FACW species Note 1 = 0 | | |

| Profile Des | cription: (Describe t | o the de | pth needed to docu | ıment tl | ne indica | tor or co | onfirm the absence o | f indicators.) |
|--|-----------------------|-----------|--|---|--|--------------------------------|--|---|
| Depth | Matrix | | | | | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 3/2 | 98 | 10YR 5/8 | 2 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 8-16 | 10YR 4/2 | 95 | 10YR 5/6 | 5 | С | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 98 | 10YR 5/6 | 2 | <u>C</u> | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | <u> </u> | | _ | <u> </u> | _ | | |
| 1 | | | | | | | | |
| ¹ Type: C=C | oncentration, D=Depl | etion. RN | ∕/=Reduced Matrix. M | //S=Mas | ked Sand | Grains. | Location: P | L=Pore Lining, M=Matrix. |
| - Black H - Hydroge - Stratifie X Deplete - Thick D - Sandy N - Sandy F - Stripped - Dark Su | | | - Polyvalue Belo MLRA 149B - Thin Dark Surfa - High Chroma S - Loamy Mucky I - Loamy Gleyed X Depleted Matrix - Redox Dark Su - Depleted Dark - Redox Depress - Marl (F10) (LR |) ace (S9) Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F6 R K, L) | (LRR R 611) (LRI (F1) (LRI F2) 66) (F7) | , MLRA 1 R K, L) R K, L) | - 2 cm Mu - Coast Pr - 5 cm Mu - Polyvalu - Thin Dar - Iron-Mar - Piedmor - Mesic Sp - Red Par - Very Sha - Other (E | or Problematic Hydric Soils ³ : ack (A10) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R) acky Peat or Peat (S3) (LRR K, L, R) be Below Surface (S8) (LRR K, L) rk Surface (S9) (LRR K, L) rganese Masses (F12) (LRR K, L, R) at Floodplain Soils (F19) (MLRA 149B) podic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) allow Dark Surface (F22) Explain in Remarks) |
| Type: Depth (i | inches): | | | | | | Hydric Soil Preser | nt? Yes <u>X</u> No |
| Remarks: | | | | | | | | |

| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 7/11 | | | | | | |
|---|--|--|--|--|--|--|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-9 | | | | | | |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W | | | | | | |
| • ` ` • | relief (concave, convex,etc): Concave Slope %: 0 | | | | | | |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.060065 | Long: -82.906764 Datum: 1983 | | | | | | |
| Soil Map Unit Name: Bennington silt loam, 0 to 2 percent slopes (BeA) | NWI classification: Upland | | | | | | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | | | | | | | |
| | | | | | | | |
| Are Vegetation No , Soil No , or Hydrology No significantly distur | | | | | | | |
| Are Vegetation No, Soil No, or Hydrology No naturally problem | atic? (If needed, explain any answers in Remarks.) | | | | | | |
| SUMMARY OF FINDINGS – Attach site map showing sam | ppling point locations, transects, important features, etc. | | | | | | |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area | | | | | | |
| Hydric Soil Present? Yes No X | within a Wetland? Yes No _X_ | | | | | | |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: | | | | | | |
| Remarks: (Explain alternative procedures here or in a separate report.) | | | | | | | |
| Tromano. (Explain altornative procedures note of in a coparate report.) | | | | | | | |
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| 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) | | | | | | |
| - Surface Water (A1) - Water-Stained Leaves (| | | | | | | |
| - High Water Table (A2) - Aquatic Fauna (B13) | - Moss Trim Lines (B16) | | | | | | |
| - Saturation (A3) - Marl Deposits (B15) | - Dry-Season Water Table (C2) | | | | | | |
| - Water Marks (B1) - Hydrogen Sulfide Odor | (C1) - Crayfish Burrows (C8) | | | | | | |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | on Living Roots (C3) - Saturation Visible on Aerial Imagery (C9) | | | | | | |
| - Drift Deposits (B3) - Presence of Reduced Ir | on (C4) Stunted or Stressed Plants (D1) | | | | | | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction i | n Tilled Soils (C6) - Geomorphic Position (D2) | | | | | | |
| - Iron Deposits (B5) - Thin Muck Surface (C7) | - Shallow Aquitard (D3) | | | | | | |
| - Inundation Visible on Aerial Imagery (B7) - Other (Explain in Rema | rks) - Microtopographic Relief (D4) | | | | | | |
| Sparsely Vegetated Concave Surface (B8) | FAC-Neutral Test (D5) | | | | | | |
| Field Observations: | | | | | | | |
| Surface Water Present? Yes No _X Depth (inches) | : | | | | | | |
| Water Table Present? Yes No X Depth (inches) | | | | | | | |
| Saturation Present? Yes No X Depth (inches) | Wetland Hydrology Present? Yes No X | | | | | | |
| (includes capillary fringe) | | | | | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pro | evious inspections), if available: | | | | | | |
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| | | | | | | | |
| Remarks: | | | | | | | |
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| EGETATION – Use scientific names of pla | Absolute | Dominant | Indicator | Sampling Point: L | JP-9 | | |
|---|----------|--------------|-----------|--|------------|--|--|
| ree Stratum (Plot size:30ft ²) | % Cover | Species? | Status | Dominance 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: 0.0% | (A/B | | |
| | | | | Prevalence Index worksheet: | | | |
| | | =Total Cover | | Total % Cover of: Multiply | by: | | |
| apling/Shrub Stratum (Plot size:15ft ²) | | | | OBL species 0 x 1 = | 0 | | |
| | | | | FACW species 0 x 2 = | 0 | | |
| | | | | FAC species 0 x 3 = | 0 | | |
| | | | | FACU species 90 x 4 = 3 | 60 | | |
| | | | | UPL species 0 x 5 = | 0 | | |
| | | | | Column Totals 90 (A) 3 | 60 (B | | |
| | | · | | Prevalence Index = B/A = 4.0 | 00 | | |
| | | | | Hydrophytic Vegetation Indicators: | | | |
| | | =Total Cover | | 1 - Rapid Test for Hydrophytic Vegetation | | | |
| erb Stratum (Plot size: 5ft ²) | | • | | 2 - Dominance Test is >50% | | | |
| Festuca rubra | 75 | Yes | FACU | 3 - Prevalence Index is ≤3.0 ¹ | | | |
| Poa pratensis | 15 | No | FACU | 4 - Morphological Adaptations ¹ (Provide data in Remarks or on a separate sheet) | | | |
| | | | | Problematic Hydrophytic Vegetation ¹ (Explain) | | | |
| | | | | Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. | | | |
| | | | | Definitions of Vegetation Strata: | | | |
| | | · | | Tree – Woody plants 3 in. (7.6 cm) or more in at breast height (DBH), regardless of height. | ı diamete | | |
|). | | | | | DDII | | |
| ı | | | | Sapling/shrub – Woody plants less than 3 in and greater than or equal to 3.28 ft (1 m) tall. | | | |
| 2 | 90 | =Total Cover | | Herb – All herbaceous (non-woody) plants, re of size, and woody plants less than 3.28 ft tall | | | |
| Yoody Vine Stratum (Plot size:15ft ²) | | • | | Woody vines – All woody vines greater than | 3.28 ft in | | |
| - | | | | height. | | | |
| | | | | Hydrophytic | | | |
| | | | | Vegetation | | | |
| | | | | Present? Yes No X | | | |
| | | =Total Cover | | | | | |

| Profile Desc | ription: (Describe to | o the de | pth needed to docu | ument th | ne indica | tor or c | onfirm the absence of | f indicators.) |
|--|--|------------|---|---|--|---|--|--|
| Depth | Matrix | | Redo | x Featur | es | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 3/3 | 98 | 10YR 5/8 | 2 | <u>C</u> | M | Loamy/Clayey | Prominent redox concentrations |
| 8-16 | 10YR 4/2 | 95 | 10YR 5/6 | 5 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 98 | 10YR 5/6 | 2 | C | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | <u> </u> | | |
| | | _ | | <u> </u> | | <u> </u> | | |
| | | | | | <u> </u> | | | |
| | | | | | | | | |
| ¹ Type: C=Co | ncentration, D=Deple | etion, RI | /I=Reduced Matrix, N | /IS=Mas | ked San | d Grains. | | L=Pore Lining, M=Matrix. or Problematic Hydric Soils ³ : |
| - Black His - Hydroger - Stratified - Depleted - Thick Da - Sandy M - Sandy G - Sandy Re - Stripped - Dark Sur | ipedon (A2) stic (A3) n Sulfide (A4) Layers (A5) Below Dark Surface rk Surface (A12) ucky Mineral (S1) leyed Matrix (S4) edox (S5) Matrix (S6) face (S7) | | - Polyvalue Belo MLRA 149B - Thin Dark Surfa - High Chroma S - Loamy Mucky I - Loamy Gleyed - Depleted Matri - Redox Dark Su - Depleted Dark - Redox Depress - Marl (F10) (LR |) ace (S9) Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F6 R K, L) | (LRR R 611) (LRI (F1) (LRI F2) 66) (F7) 8) | , MLRA [.] R K, L) R K, L) | - Coast Pr 149B) - 5 cm Mu - Polyvaluu - Thin Dari - Iron-Man - Piedmon - Mesic Sp - Red Pare - Very Sha | rairie Redox (A16) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R) rairie Redox (A16) (LRR K, L, R) rairie Redox (S3) (LRR K, L, R) re Below Surface (S8) (LRR K, L) rk Surface (S9) (LRR K, L) rganese Masses (F12) (LRR K, L, R) rt Floodplain Soils (F19) (MLRA 149B) redoic (TA6) (MLRA 144A, 145, 149B) rent Material (F21) raillow Dark Surface (F22) rxplain in Remarks) |
| | ayer (if observed): | JII aliu v | vetiand hydrology mic | ust be pi | esent, ui | iless disi | dibed of problematic. | |
| Type: _ Depth (in | ches): | | | | | | Hydric Soil Preser | nt? Yes No_X_ |
| Remarks: | | | | | | | | _ |
| | | | | | | | | |

| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 7/11/2018 | | | | | | | |
|--|--|--|--|--|--|--|--|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-10 | | | | | | | |
| Investigator(s): Mark Fedosick, Matthew Ray | Section, Township, Range: 4, T 2 N, R 17 W | | | | | | | |
| • ' - | relief (concave, convex,etc): Concave Slope %: 0 | | | | | | | |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.060031 | Long: -82.907295 Datum: 1983 | | | | | | | |
| | | | | | | | | |
| Soil Map Unit Name: Bennington silt loam, 0 to 2 percent slopes (BeA) | NWI classification: Upland | | | | | | | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) | | | | | | | |
| Are Vegetation No, Soil No, or Hydrology No significantly distur | | | | | | | | |
| Are Vegetation No, Soil No, or Hydrology No naturally problems | atic? (If needed, explain any answers in Remarks.) | | | | | | | |
| SUMMARY OF FINDINGS – Attach site map showing same | pling point locations, transects, important features, etc. | | | | | | | |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area | | | | | | | |
| Hydric Soil Present? Yes X No | within a Wetland? Yes No _ X | | | | | | | |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: | | | | | | | |
| Remarks: (Explain alternative procedures here or in a separate report.) | | | | | | | | |
| Tremands. (Explain alternative procedures here of in a separate reports) | | | | | | | | |
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| HYDROLOGY | | | | | | | | |
| | Secondary Indicators (minimum of two required) | | | | | | | |
| Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) | Surface Sail Creaks (RS) | | | | | | | |
| | Surface Soil Cracks (B6) B9) - Drainage Patterns (B10) | | | | | | | |
| | | | | | | | | |
| - High Water Table (A2) - Aquatic Fauna (B13) - Mark Deposits (B15) | - Moss Trim Lines (B16) | | | | | | | |
| - Saturation (A3) - Marl Deposits (B15) | - Dry-Season Water Table (C2) | | | | | | | |
| - Water Marks (B1) - Hydrogen Sulfide Odor | i i i i i i i i i i i i i i i i i i i | | | | | | | |
| - Sediment Deposits (B2) - Oxidized Rhizospheres | | | | | | | | |
| - Drift Deposits (B3) - Presence of Reduced Ir | | | | | | | | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction in | | | | | | | | |
| - Iron Deposits (B5) - Thin Muck Surface (C7) | | | | | | | | |
| Inundation Visible on Aerial Imagery (B7) Other (Explain in Remai | | | | | | | | |
| Sparsely Vegetated Concave Surface (B8) | FAC-Neutral Test (D5) | | | | | | | |
| Field Observations: | | | | | | | | |
| Surface Water Present? Yes No X Depth (inches) | : <u></u> | | | | | | | |
| Water Table Present? Yes No _X Depth (inches) | : <u> </u> | | | | | | | |
| Saturation Present? Yes No X Depth (inches) | : Wetland Hydrology Present? Yes No _X | | | | | | | |
| (includes capillary fringe) | | | | | | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: | | | | | | | |
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| Remarks: | | | | | | | | |
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VEGETATION – Use scientific names of plants. Sampling Point: UP-10 Absolute Dominant Indicator <u>Tree Stratum</u> (Plot size: ____30ft²) % Cover Species? Status **Dominance Test worksheet:** Number of Dominant Species That 2. Are OBL, FACW, or FAC: 0 (A) 3. **Total Number of Dominant** Species Across All Strata: 4. (B) 5. Percent of Dominant Species That 6. Are OBL, FACW, or FAC: 0.0% (A/B) Prevalence Index worksheet: =Total Cover Total % Cover of: Multiply by: Sapling/Shrub Stratum (Plot size: 15ft² OBL species x 1 = **FACW** species 0 x 2 = 0 FAC species x 3 = 0 90 3. FACU species x 4 = 360 4. UPL species 0 x 5 = 5. Column Totals 90 (A) 360 Prevalence Index = B/A =4.00 6. **Hydrophytic Vegetation Indicators:** 7. =Total Cover 1 - Rapid Test for Hydrophytic Vegetation Herb Stratum (Plot size: 5ft²) 2 - Dominance Test is >50% Festuca rubra 75 Yes **FACU** 3 - Prevalence Index is ≤3.01 4 - Morphological Adaptations¹ (Provide 2. Poa pratensis 15 No **FACU** data in Remarks or on a separate sheet) 3. 4. Problematic Hydrophytic Vegetation¹ (Explain) 5. ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. 6. **Definitions of Vegetation Strata:** 7. 8. Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless 90 =Total Cover of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15ft²) Woody vines - All woody vines greater than 3.28 ft in 1. height. 2. Hydrophytic 3. Vegetation Present? Yes No X =Total Cover Remarks: (Include photo numbers here or on a separate sheet.)

| Profile Des | cription: (Describe t | o the de | pth needed to docu | ıment tl | ne indica | tor or co | onfirm the absence o | f indicators.) |
|--|-----------------------|-----------|--|---|--|---|--|--|
| Depth | Matrix | | Redox | x Featur | es | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 4/2 | 98 | 10YR 5/8 | 2 | С | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| 8-16 | 10YR 4/2 | 95 | 10YR 5/6 | 5 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 98 | 10YR 5/6 | 2 | <u>C</u> | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| ¹ Type: C=C | oncentration, D=Deple | etion, RI | M=Reduced Matrix, M | /IS=Mas | ked Sand | d Grains. | ² Location: P | L=Pore Lining, M=Matrix. |
| - Black H - Hydroge - Stratifier - Deplete - Thick Di - Sandy M - Sandy F - Stripped - Dark Su | | | - Polyvalue Belo MLRA 149B) - Thin Dark Surfa - High Chroma S - Loamy Mucky I - Loamy Gleyed X Depleted Matrix - Redox Dark Su - Depleted Dark - Redox Depress - Marl (F10) (LRI |) ace (S9) Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F6 R K, L) | (LRR R 611) (LRR (F1) (LRI F2) 66) (F7) 8) | , MLRA [,] R K, L) R K, L) | - 2 cm Mu - Coast Pi - 5 cm Mu - Polyvalu - Thin Dar - Iron-Mar - Piedmor - Mesic Si - Red Par - Very Sha - Other (E | or Problematic Hydric Soils ³ : cick (A10) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R) cicky Peat or Peat (S3) (LRR K, L, R) cie Below Surface (S8) (LRR K, L) rk Surface (S9) (LRR K, L) nganese Masses (F12) (LRR K, L, R) cit Floodplain Soils (F19) (MLRA 149B) podic (TA6) (MLRA 144A, 145, 149B) cent Material (F21) allow Dark Surface (F22) explain in Remarks) |
| Type: Depth (i | | | | | | | Hydric Soil Presei | nt? Yes <u>X</u> No |
| Remarks: | | | | | | | | |
| | | | | | | | | |

| Project/Site: AEP Morse Road | City/County: Franklin County Sampling Date: 7/11/2018 | | | | | | | |
|---|---|--|--|--|--|--|--|--|
| Applicant/Owner: ms consultants, inc | State: OH Sampling Point: UP-11 | | | | | | | |
| Investigator(s): Mark Fedosick, Matthew Ray | Fedosick, Matthew Ray Section, Township, Range: 4, T 2 N, R 17 W | | | | | | | |
| | relief (concave, convex,etc): Concave Slope %: 0 | | | | | | | |
| Subregion (LRR or MLRA): LRR M, MLRA 111E Lat: 40.059985 | Long: -82.90787 Datum: 1983 | | | | | | | |
| Soil Map Unit Name: Pewamo silty clay loam, low carbonate till, 0 to 2 per | | | | | | | | |
| Are climatic / hydrologic conditions on the site typical for this time of year? | Yes X No (If no, explain in Remarks.) | | | | | | | |
| Are Vegetation No , Soil No , or Hydrology No significantly disturb | | | | | | | | |
| | · · · · · · · · · · · · · · · · · · · | | | | | | | |
| Are Vegetation No, Soil No, or Hydrology No naturally problems SUMMARY OF FINDINGS – Attach site map showing sam | | | | | | | | |
| Hydrophytic Vegetation Present? Yes No X | Is the Sampled Area | | | | | | | |
| Hydric Soil Present? Yes X No | within a Wetland? Yes No X | | | | | | | |
| Wetland Hydrology Present? Yes No X | If yes, optional Wetland Site ID: | | | | | | | |
| | | | | | | | | |
| 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) | | | | | | | |
| Surface Water (A1) Water-Stained Leaves (B | | | | | | | | |
| - High Water Table (A2) - Aquatic Fauna (B13) | Moss Trim Lines (B16) | | | | | | | |
| Saturation (A3) Marl Deposits (B15) | Dry-Season Water Table (C2) | | | | | | | |
| Water Marks (B1) Hydrogen Sulfide Odor (| | | | | | | | |
| - Sediment Deposits (B2) - Oxidized Rhizospheres of the sediment Deposits (B2) | | | | | | | | |
| - Drift Deposits (B3) - Presence of Reduced Iro | | | | | | | | |
| - Algal Mat or Crust (B4) - Recent Iron Reduction in | | | | | | | | |
| - Iron Deposits (B5) - Thin Muck Surface (C7) | | | | | | | | |
| - Inundation Visible on Aerial Imagery (B7) - Other (Explain in Remar | | | | | | | | |
| - Sparsely Vegetated Concave Surface (B8) | FAC-Neutral Test (D5) | | | | | | | |
| Field Observations: | | | | | | | | |
| Surface Water Present? Yes No _X Depth (inches): | | | | | | | | |
| Water Table Present? Yes No X Depth (inches): | | | | | | | | |
| Saturation Present? Yes No X Depth (inches): | Wetland Hydrology Present? Yes No X | | | | | | | |
| (includes capillary fringe) | | | | | | | | |
| Describe Recorded Data (stream gauge, monitoring well, aerial photos, pre | evious inspections), if available: | | | | | | | |
| | | | | | | | | |
| Remarks: | | | | | | | | |
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VEGETATION – Use scientific names of plants. Sampling Point: UP-11 Absolute Dominant Indicator <u>Tree Stratum</u> (Plot size: 30ft²) Species? % Cover Status **Dominance Test worksheet:** Number of Dominant Species That 2. Are OBL, FACW, or FAC: 0 (A) 3. **Total Number of Dominant** (B) 4. Species Across All Strata: 5. Percent of Dominant Species That 6. Are OBL, FACW, or FAC: 0.0% (A/B) Prevalence Index worksheet: =Total Cover Total % Cover of: Multiply by: Sapling/Shrub Stratum (Plot size: 15ft² OBL species x 1 = **FACW** species 0 x 2 = FAC species 0 x 3 = 0 90 x 4 = 3. **FACU** species 360 4. UPL species 0 x 5 = 5. Column Totals 90 (A) 360 Prevalence Index = B/A =4.00 6. **Hydrophytic Vegetation Indicators:** =Total Cover 1 - Rapid Test for Hydrophytic Vegetation Herb Stratum (Plot size: 5ft²) 2 - Dominance Test is >50% Festuca rubra 75 Yes **FACU** 3 - Prevalence Index is ≤3.01 15 4 - Morphological Adaptations¹ (Provide 2. **FACU** Poa pratensis No data in Remarks or on a separate sheet) 3. 4. Problematic Hydrophytic Vegetation¹ (Explain) 5. ¹Indicators of hydric soil and wetland hydrology must 6. be present, unless disturbed or problematic. **Definitions of Vegetation Strata:** 7. 8. Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless 90 =Total Cover of size, and woody plants less than 3.28 ft tall. Woody Vine Stratum (Plot size: 15ft² Woody vines - All woody vines greater than 3.28 ft in 1. height. Hydrophytic 3. Vegetation Present? Yes No X =Total Cover Remarks: (Include photo numbers here or on a separate sheet.)

Page 2

| Profile Desc | cription: (Describe t | o the de | epth needed to docu | ıment tl | ne indica | tor or co | onfirm the absence o | f indicators.) |
|---|-----------------------|-----------|--|---|--|--------------------------------|--|---|
| Depth | Matrix | | Redox | x Featur | es | | | |
| (inches) | Color (moist) | % | Color (moist) | % | Type ¹ | Loc ² | Texture | Remarks |
| 0-8 | 10YR 3/2 | 98 | 10YR 5/8 | 2 | С | M | Loamy/Clayey | Prominent redox concentrations |
| 8-16 | 10YR 4/2 | 95 | 10YR 5/6 | 5 | С | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| 16-22 | 10YR 4/1 | 98 | 10YR 5/6 | 2 | <u>C</u> | <u>M</u> | Loamy/Clayey | Prominent redox concentrations |
| | | | | | | | | |
| | | | | | <u> </u> | | | |
| · | | | | | | | | |
| ¹ Type: C=C | oncentration, D=Deple | etion. RN | M=Reduced Matrix. M | MS=Mas | ked Sand | d Grains. | ² Location: P | L=Pore Lining, M=Matrix. |
| - Black H - Hydroge - Stratified X Depleted - Thick Do - Sandy N - Sandy F - Stripped - Dark Su | | | - Polyvalue Belo MLRA 149B) - Thin Dark Surfa - High Chroma S - Loamy Mucky I - Loamy Gleyed X Depleted Matria - Redox Dark Su - Depleted Dark - Redox Depress - Marl (F10) (LRI |) ace (S9) Sands (S Mineral Matrix (x (F3) urface (F Surface sions (F6 R K, L) | (LRR R 611) (LRI (F1) (LRI F2) 66) (F7) | , MLRA 1 R K, L) R K, L) | - 2 cm Mu - Coast Pi - 5 cm Mu - Polyvalu - Thin Dar - Iron-Mar - Piedmor - Mesic Si - Red Par - Very Sha - Other (E | or Problematic Hydric Soils ³ : lick (A10) (LRR K, L, MLRA 149B) rairie Redox (A16) (LRR K, L, R) licky Peat or Peat (S3) (LRR K, L, R) e Below Surface (S8) (LRR K, L) rk Surface (S9) (LRR K, L) nganese Masses (F12) (LRR K, L, R) at Floodplain Soils (F19) (MLRA 149B) bodic (TA6) (MLRA 144A, 145, 149B) ent Material (F21) allow Dark Surface (F22) xplain in Remarks) |
| Depth (i | nches): | | | | | | Hydric Soil Presei | nt? Yes_X No |
| Remarks: | | | | | | | <u> </u> | |
| | | | | | | | | |

Appendix 5 Threatened and Endangered Species Information

Ray, Matthew

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>

Sent: Friday, July 20, 2018 12:40 PM

To: Ray, Matthew

Cc:nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.usSubject:AEP Morse Road Substation, Transit Drive, Franklin County



UNITED STATES DEPARTMENT OF THE INTERIOR
U.S. Fish and Wildlife Service
Ecological Services Office
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / Fax (614) 416-8994



TAILS# 03E15000-2018-TA-1639

Dear Mr. Ray,

We have received your recent correspondence requesting information about the subject proposal. There are no federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area. The following comments and recommendations will assist you in fulfilling the requirements for consultation under section 7 of the Endangered Species Act of 1973, as amended (ESA).

The U.S. Fish and Wildlife Service (Service) recommends that proposed developments avoid and minimize water quality impacts and impacts to high quality fish and wildlife habitat (e.g., forests, streams, wetlands). Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the Corps of Engineers should be contacted to determine whether a Clean Water Act section 404 permit is required. Best management practices should be used to minimize erosion, especially on slopes. All disturbed areas should be mulched and revegetated with native plant species. Prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

bat(*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

Should the proposed site contain trees ≥3 inches dbh, we recommend that trees be saved wherever possible. If any caves or abandoned mines may be disturbed, further coordination with this office is requested to determine if fall or spring portal surveys are warranted. If no caves or abandoned mines are present and trees ≥3 inches dbh cannot be avoided, we recommend that removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Seasonal clearing is being recommended to avoid adverse effects to Indiana bats and northern long-eared bats. While incidental take of northern long-eared bats from most tree clearing is exempted by a 4(d) rule (see http://www.fws.gov/midwest/endangered/mammals/nleb/index.html), incidental take of Indiana bats is still prohibited without a project-specific exemption. Thus, seasonal clearing is recommended where Indiana bats are assumed present.

If implementation of this seasonal tree cutting recommendation is not possible, summer surveys may be conducted to document the presence or probable absence of Indiana bats within the project area during the summer. If a summer survey documents probable absence of Indiana bats, the 4(d) rule for the northern long-eared bat could be applied. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Endangered Species Coordinator for this office. Surveyors must have a valid federal permit. Please note that summer surveys may only be conducted between June 1 and August 15.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is

completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species. Should the project design change, or during the term of this action, additional information on listed or proposed species or their critical habitat become available, or if new information reveals effects of the action that were not previously considered, consultation with the Service should be initiated to assess any potential impacts.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the ESA, and are consistent with the intent of the National Environmental Policy Act of 1969 and the Service's Mitigation Policy. This letter provides technical assistance only and does not serve as a completed section 7 consultation document. We recommend that the project be coordinated with the Ohio Department of Natural Resources due to the potential for the project to affect state listed species and/or state lands. Contact John Kessler, Environmental Services Administrator, at (614) 265-6621 or at john.kessler@dnr.state.oh.us.

If you have questions, or if we can be of further assistance in this matter, please contact our office at (614) 416-8993 or ohio@fws.gov.

Sincerely,

Scott Pruitt - Acting Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW Kate Parsons, ODNR-DOW



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ohio Ecological Services Field Office 4625 Morse Road, Suite 104 Columbus, OH 43230-8355 Phone: (614) 416-8993 Fax: (614) 416-8994



In Reply Refer To: July 12, 2018

Consultation Code: 03E15000-2018-SLI-1639

Event Code: 03E15000-2018-E-01558 Project Name: AEP Morse Road Substation

Subject: List of threatened and endangered species that may occur in your proposed project

location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see http://www.fws.gov/migratorybirds/RegulationsandPolicies.html.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/BirdHazards.html.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit http://www.fws.gov/migratorybirds/AboutUS.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Ohio Ecological Services Field Office 4625 Morse Road, Suite 104 Columbus, OH 43230-8355 (614) 416-8993

Project Summary

Consultation Code: 03E15000-2018-SLI-1639

Event Code: 03E15000-2018-E-01558

Project Name: AEP Morse Road Substation

Project Type: TRANSMISSION LINE

Project Description: The proposed AEP Morse Road Substation Site includes substation

improvement and transmission line relocation. The project site is located northwest from the intersection of Morse Road and Interstate 270 in

Franklin County, Ohio.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/40.06298230134394N82.90704427781242W



Counties: Franklin, OH

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Note that 1 of these species should be considered only under certain conditions.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an
office of the National Oceanic and Atmospheric Administration within the Department of
Commerce

Mammals

NAME STATUS

Indiana Bat Myotis sodalis

Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.

Species profile: https://ecos.fws.gov/ecp/species/5949

Northern Long-eared Bat Myotis septentrionalis

Threatened

No critical habitat has been designated for this species.

This species only needs to be considered under the following conditions:

• Incidental take of the northern long-eared bat is not prohibited at this location. Federal action agencies may conclude consultation using the streamlined process described at https://www.fws.gov/midwest/endangered/mammals/nleb/s7.html

Species profile: https://ecos.fws.gov/ecp/species/9045

Fishes

NAME STATUS

Scioto Madtom Noturus trautmani

Endangered

No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5395

Event Code: 03E15000-2018-E-01558

Clams

NAME STATUS

Clubshell Pleurobema clava

Endangered

Endangered

Population: Wherever found; Except where listed as Experimental Populations

No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3789

Northern Riffleshell Epioblasma torulosa rangiana

No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/527

Threatened

Rabbitsfoot *Quadrula cylindrica cylindrica*There is **final** critical habitat for this species. Your location is outside the critical habitat.

Species profile: https://ecos.fws.gov/ecp/species/5165

Rayed Bean Villosa fabalis Endangered

No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5862

Snuffbox Mussel *Epioblasma triquetra*Endangered

No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4135

Flowering Plants

NAME STATUS

Running Buffalo Clover Trifolium stoloniferum

No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2529

Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Ray, Matthew

From: Ray, Matthew

Sent: Thursday, July 05, 2018 3:46 PM

To: 'environmentalreviewrequest@dnr.state.oh.us'

Subject: Environmental Review Request

Attachments: ODNR Environmental Review Request_07_05_18.zip;

Morse_Road_Substation_Study_Area.zip

To Whom It May Concern,

Attached is a cover letter with detailed pertinent information regarding the proposed project, maps, site photos, and .shp files needed for an Environmental Review. If you have any questions or need additional information feel free to contact me.

I look forward to your response.

Regards,

Matthew Ray

ms consultants, inc | engineers, architects, planners One Cascade Plaza Suite 140, Akron, Ohio 44308-1116

p: 330-258-9920 Ext. 12118

f: 330-258-9921

e: mray@msconsultants.com

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Ray, Matthew

From: EnvironmentalReviewRequest@dnr.state.oh.us

Sent: Thursday, July 05, 2018 3:49 PM

To: Ray, Matthew

Subject: Thank you for contacting the Ohio Department of Natural Resources

Thank you for contacting the Ohio Department of Natural Resources. This email is your receipt that we have received your message and/or project review request. During normal business operations, we strive to respond to your request within 30 to 45 business days. However, during certain times of the year, due to large volumes of requests, our response time may be longer. If you have any questions please contact our office at 614-265-6397.

Sincerely,

Sarah Tebbe
Ohio Department of Natural Resources
Office of Real Estate
2045 Morse Road
Columbus, Ohio 43229
(614) 265-6397



CONSTRUCTION NOTICE FOR THE MORSE ROAD STATION EXPANSION PROJECT

October 1, 2018

Appendix D - PJM SRRTEP- West 4/21/2017



Common Mode Outage

Problem Statement:

Clinton - Morse Road 138kV line with the stuck breaker at The Mifflin-Stelzer 138kV line is overloaded for the loss of the Morse. - East side of Columbus, OH

Preliminary Solution:

Add 2-138kV CB's and relocate 2-138kV circuit exits to different bays at Morse Road. Eliminate 3 terminal line by terminating Genoa-Morse circuit at Morse Road.

Alternatives Considered:

No good transmission alternatives were identified. New construction in the area is difficult to execute due to the urban nature of the area.

Estimated Cost: \$3.0M

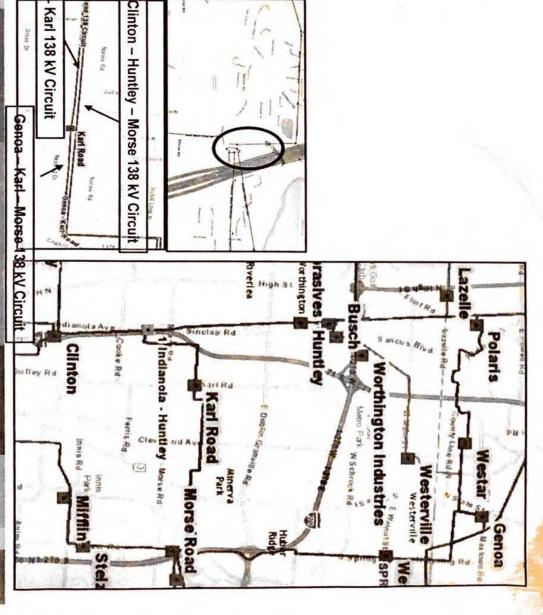
Projected IS date: 12/31/2019

Status: Engineering

Clinton + Karl 138 kV Circuit

Martin Rd

AEP Transmission Zone





Common Mode Outage

Previously Presented: 4/21/2017 SRTEAC

Problem Statement:

PJM identified the Mifflin-Stelzer 138kV line overloaded for the loss of the Clinton – Morse Road 138kV line with the stuck breaker at Morse. – East side of Columbus, OH

Immediate Need: Due to the immediate need, the timing required for an RTEP proposal window is infeasible. As a result, the local Transmission Owner will be the Designated Entity.

Recommended Solution:

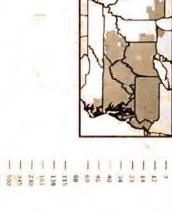
Add 2-138kV CB's and relocate 2-138kV circuit exits to different bays at Morse Road. Eliminate 3 terminal line by terminating Genoa-Morse circuit at Morse Road. (B2887)

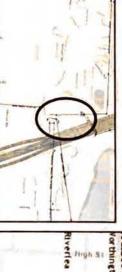
Estimated Cost: \$3.0M

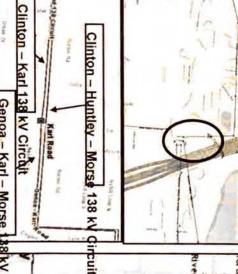
Projected IS date: 12/31/2019

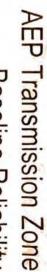
Status: Engineering



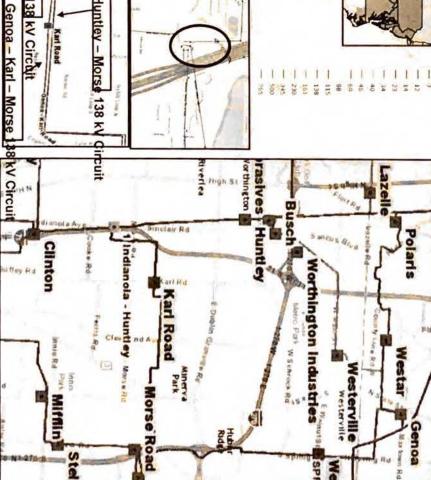












This foregoing document was electronically filed with the Public Utilities

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10/3/2018 3:01:27 PM

in

Case No(s). 18-1465-EL-BNR

Summary: Notice - Appendix to Construction Notice for the Morse Road Station Expansion Project (Part 4 of 4) electronically filed by Ms. Christen M. Blend on behalf of AEP Ohio Transmission Power Company, Inc.