

Construction Notice for the Vassell 345 kV Station Upgrades Project



An **AEP** Company

BOUNDLESS ENERGYSM

PUCO Case No. 25-0664-EL-BNR

Submitted to:
The Ohio Power Siting Board
Pursuant to Ohio Administrative Code
Section 4906-6-05

Submitted by:
AEP Transmission Company, Inc.

June 23, 2025

CONSTRUCTION NOTICE FOR VASSELL 345 KV STATION UPGRADES PROJECT

CONSTRUCTION NOTICE

AEP Ohio Transmission Company, Inc.

Vassell 345 kV Station Upgrades Project

4906-6-05 Accelerated Application Requirements

AEP Transmission Company, Inc. (the “Company”) provides the following information to the Ohio Power Siting Board (“OPSB”) in accordance with the accelerated application requirements of Ohio Administrative Code Section 4906-6-05.

4906-6-05(B) General Information

B(1) Project Description

The name of the project and applicant's reference number, names and reference number(s) of resulting circuits, a brief description of the project, and why the project meets the requirements for a Construction Notice.

The Company proposes the Vassell 345 kV Station Upgrades Project (the “Project”), in the city of Sunbury and Berkshire Township within Delaware County, Ohio. The Project involves expanding the existing 13.42-acre station by 0.04 acres and upgrading the fencing to accommodate additional 345 kV facilities. The location of the Project is shown in **Figure 1 and 2 in Appendix A**.

The Project meets the requirements for a Construction Notice (“CN”) as defined by Item 4 of Appendix A to Ohio Administrative Code Section 4906-1-01, *Application Requirement Matrix for Electric Power Transmission Lines*:

(4) Constructing additions to existing electric power transmission stations or converting distribution stations to transmission stations where:

(a) There is twenty percent or less expansion of the fenced area.

The Project has been assigned Case No. 25-0664-EL-BNR.

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B(2) Statement of Need

If the proposed Construction Notice project is an electric power transmission line or gas or natural gas transmission line, a statement explaining the need for the proposed facility.

The Project is required to address baseline overload issues identified per PJM's 2023 analysis. The New Albany area continues to experience some of the fastest-growing demand within the AEP system. This robust economic development activity is leading to a consistent influx of new customer interconnection requests. The approximate load demand is expected to exceed 2,500 MW by the end of 2027 and is projected to continue growing in the following years. Due to this anticipated customer load, several 345 kV and 138 kV circuits in the area, as well as the 765-138 kV step-down transformer at Maliszweski Station, are expected to exceed their thermal loading capabilities during an outage of the existing 765-345 kV transformer at Vassell Station.

The baseline violations listed above were included in PJM's 2023 RTEP Window #2 to solicit proposal to address the issues identified in the area. After evaluation of the different proposals that were submitted during the window, PJM selected the installation of a second 765-345 kV transformer bank at the Vassell 765 kV yard as the baseline solution to address expected overloads on 765kV, 345kV and 138kV facilities in Central Ohio. The new transformer bank installation will require relocation of the existing 345 kV tie line between the 765 kV and 345 kV yards, as well as installing a new 345 kV tie-line between the yards (Case No. 25-0663-EL-BLN). In addition, the fence will also be upgraded to bring the Vassell 345 kV Station up to current resiliency, safety, operational performance, and reliability standards. The overall project will be a robust solution that will address the identified issues and continue fostering economic development in the area.

Failure to implement the proposed Project in the specified period of time will likely result in PJM implementing operational controls which may include preemptive shedding of a significant amount of load served from the area's transmission and distribution network in order to alleviate the thermal issues associated with the scenario identified above. Although load shedding is an approved PJM operational procedure to control thermal overloads, load shedding is not acceptable from the Company's perspective and directly impacts both large commercial and residential customers in the area. The proposed solution for this baseline identified need is necessary for the Company to continue to provide safe, reliable service to its customers.

In addition, failure to proceed with the proposed projects will jeopardize the ability to meet various customer load expectations (both existing and new customers) and could adversely affect their

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plans in the New Albany area. Furthermore, not advancing this project would negatively impact economic development in the region.

The Project was presented and reviewed with stakeholders between February 2022 and April 2023 in PJM TEAC meetings and subsequently selected as the solution by the PJM Board in the fall of 2024. The Project can be referenced under PJM number of B3852.1.

B(3) Project Location

The applicant shall provide the location of the project in relation to existing or proposed lines and substations shown on an area system map of sufficient scale and size to show existing and proposed transmission facilities in the Project area.

The location of the Project in relation to existing and proposed transmission lines and the existing Vassell 345 kV Substation is shown on **Figure 1, in Appendix A. Figure 2, in Appendix A,** identifies the Project components on a 2023 aerial photograph.

B(4) Alternatives Considered

The applicant shall describe the alternatives considered and reasons why the proposed location or route is best suited for the proposed facility. The discussion shall include, but not be limited to, impacts associated with socioeconomic, ecological, construction, or engineering aspects of the project.

The Project is entirely located on existing Company property and will result in minimal land impacts in the Project area. The Project will not require impacts to any delineated wetland or streams and requires no tree clearing. Thus, the location of the Project minimizes impacts to the surrounding community and the environment, while optimizing engineering and constructability factors.

B(5) Public Information Program

The applicant shall describe its public information program to inform affected property owners and tenants of the nature of the project and the proposed timeframe for project construction and restoration activities.

The Project will be located entirely within Company owned property, with no additional property owners or tenants affected. The Company maintains a website (<http://aeptransmission.com/ohio/>) on which an electronic copy of this CN is available. An electronic copy of the CN will be served to the public library in each political subdivision affected by this Project.

B(6) Construction Schedule

The applicant shall provide an anticipated construction schedule and proposed in-service date of the project.

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Construction of the Project is planned to begin in September 2025 with an anticipated in-service date of April 2026.

B(7) Area Map

The applicant shall provide a map of at least 1:24,000 scale clearly depicting the facility with clearly marked streets, roads, and highways, and an aerial image.

Figure 1, in Appendix A, identifies the location of the Project area on a 2021 United States Geological Survey 1:24,000 Sunbury quadrangle topographic map. **Appendix A, Figure 2** identifies the Project components on a 2023 aerial photograph.

B(8) Property Agreements

The applicant shall provide a list of properties for which the applicant has obtained easements, options, and/or land use agreements necessary to construct and operate the facility and a list of the additional properties for which such agreements have not been obtained.

The entire Project is located within existing Company property (Parcel No. 41741401002001).

B(9) Technical Features

The applicant shall describe the following information regarding the technical features of the project:

B(9)(a) Operating characteristics, estimated number and types of structures required, and right-of-way and/or land requirements.

The equipment and facilities to be installed for the Project are anticipated to include the following:

- 7 – 345 kV circuit breakers
- 1 (1 unit per phase, 3 phases) – 765/345 kV transformer
- 2 – 765 kV circuit breakers
- 1 – 34.5 kV grounding transformer
- 1 – 16x18ft DICM expansion

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B(9)(b) Electric and Magnetic Fields

For electric power transmission lines that are within one hundred feet of an occupied residence or institution, the production of electric and magnetic fields during the operation of the proposed electric power transmission line.

B(9)(b)(i) Calculated Electric and Magnetic Field Strength Levels

i) Calculated Electric and Magnetic Field Levels

Not applicable. No occupied residences or institutions are located within 100 feet of the Project.

B(9)(b)(ii) Design Alternatives

A discussion of the applicant's consideration of design alternatives with respect to electric and magnetic fields and their strength levels, including alternate conductor configuration and phasing, tower height, corridor location, and right-of-way width.

Not applicable. No occupied residences or institutions are located within 100 feet of the Project.

B(9)(b)(ii)(c) Project Cost

The estimated capital cost of the project.

The cost estimate for the proposed Project, which is comprised of applicable tangible and capital costs, is approximately \$16.5 million using a Class 4 estimate. Pursuant to the PJM OATT, the costs for this Project will be recovered in the AEP Ohio Transmission Company Inc.'s FERC formula rate (Attachment H-20 to the PJM OATT) and allocated to the AEP Zone.

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B(10) Social and Economic Impacts

The applicant shall describe the social and ecological impacts of the project:

B(10)(a) Land Use

Provide a brief, general description of land use within the vicinity of the proposed project, including a list of municipalities, townships, and counties affected.

The Project is located in the city of Sunbury and Berkshire Township within Delaware County, Ohio. Land use immediately surrounding the Project is predominantly industrial or agricultural, as classified by the Delaware County Auditor. No occupied residences, schools, parks, churches, cemeteries, wildlife management areas, or nature preserves are located within 1,000 feet of the Project. Additionally, no tree clearing is required for the Project.

B(10)(b) Agricultural Land Information

Provide the acreage and a general description of all agricultural land, and separately all agricultural district land, existing at least sixty days prior to submission of the application within the potential disturbance area of the project.

No properties registered as agricultural district land are located in the Project area based on coordination with the Delaware County Auditor's Office on May 21, 2025. The Project occupies approximately 0.04 acres, all of which has historically existed as vacant industrial land surrounding the existing Vassell 345 kV Station.

B(10)(c) Archaeological and Cultural Resources

Provide a description of the applicant's investigation concerning the presence or absence of significant archaeological or cultural resources that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

The Company's consultant completed a Phase I Archaeological and Phase I History/Architectural survey for the Project in May 2025. The Company is recommending to SHPO that the Project would have no adverse effect on historic properties and no further cultural resource work would be necessary. The SHPO response will be submitted to OPSB once received.

B(10)(d) Local, State, and Federal Agency Correspondence

Provide a list of the local, state, and federal governmental agencies known to have requirements that must be met in connection with the construction of the project, and a list of documents that have been or are being filed with those agencies in connection with siting and constructing the project.

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A summary of anticipated permits and authorizations for the Project is provided in **Table 1**, below. There are no other known local, state, or federal requirements that must be met prior to commencement of the Project.

Table 1 – Anticipated Permits

Permit/Authorization/Coordination	Agency	Date
Storm Water Pollution Prevention Plan	Ohio Environmental Protection Agency	Expected August 2025
Notice Criteria	Federal Aviation Administration	Consultation in progress
Road Use Maintenance Agreement	Delaware County	3/3/2025
Archaeology/Architectural	Ohio Historic Preservation Office	Consultation in progress
Threatened and Endangered Species	United States Fish and Wildlife Service	Consultation complete 4/15/2023
Threatened and Endangered Species	Ohio Department of Natural Resources	Consultation complete 5/15/2023

B(10)(e) Threatened, Endangered, and Rare Species

Provide a description of the applicant's investigation concerning the presence or absence of federal and state designated species (including endangered species, threatened species, rare species, species proposed for listing, species under review for listing, and species of special interest) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

On April 13, 2023, coordination letters were submitted to the United State Fish and Wildlife Service (USFWS) and the Ohio Department of Natural Resources (ODNR) Ohio Natural Heritage Program (ONHP) and Division of Wildlife (DOW), seeking an environmental review of the Project for potential impacts to state and/or federally protected species. USFWS and ODNR provided responses on April 14, 2023 and May 15, 2023, respectively. Copies of the agencies' responses are presented in **Appendix C**.

Table 3, in **Appendix D** lists the federal and state threatened or endangered species in the Project area.

Based on the nature of the proposed Project activities and habitat characteristics of the surrounding vicinity, construction impacts to protected species are not anticipated. No tree clearing is anticipated for the Project. Therefore, no seasonal clearing restrictions for state and federally protected bat species are required during construction.

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B(10)(f) Areas of Ecological Concern

Provide a description of the applicant's investigation concerning the presence or absence of areas of ecological concern (including national and state forests and parks, floodplains, wetlands, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries) that may be located within the potential disturbance area of the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

Wetland and stream delineation surveys were conducted by the Company's consultant for an approximately 130-acre survey area in April 2023, which encompasses the Project in addition to a larger area (**Appendix D**). The ecological survey identified a total of nine wetlands and one stream; however, none of these resources will be impacted by the proposed station expansion and upgrades.

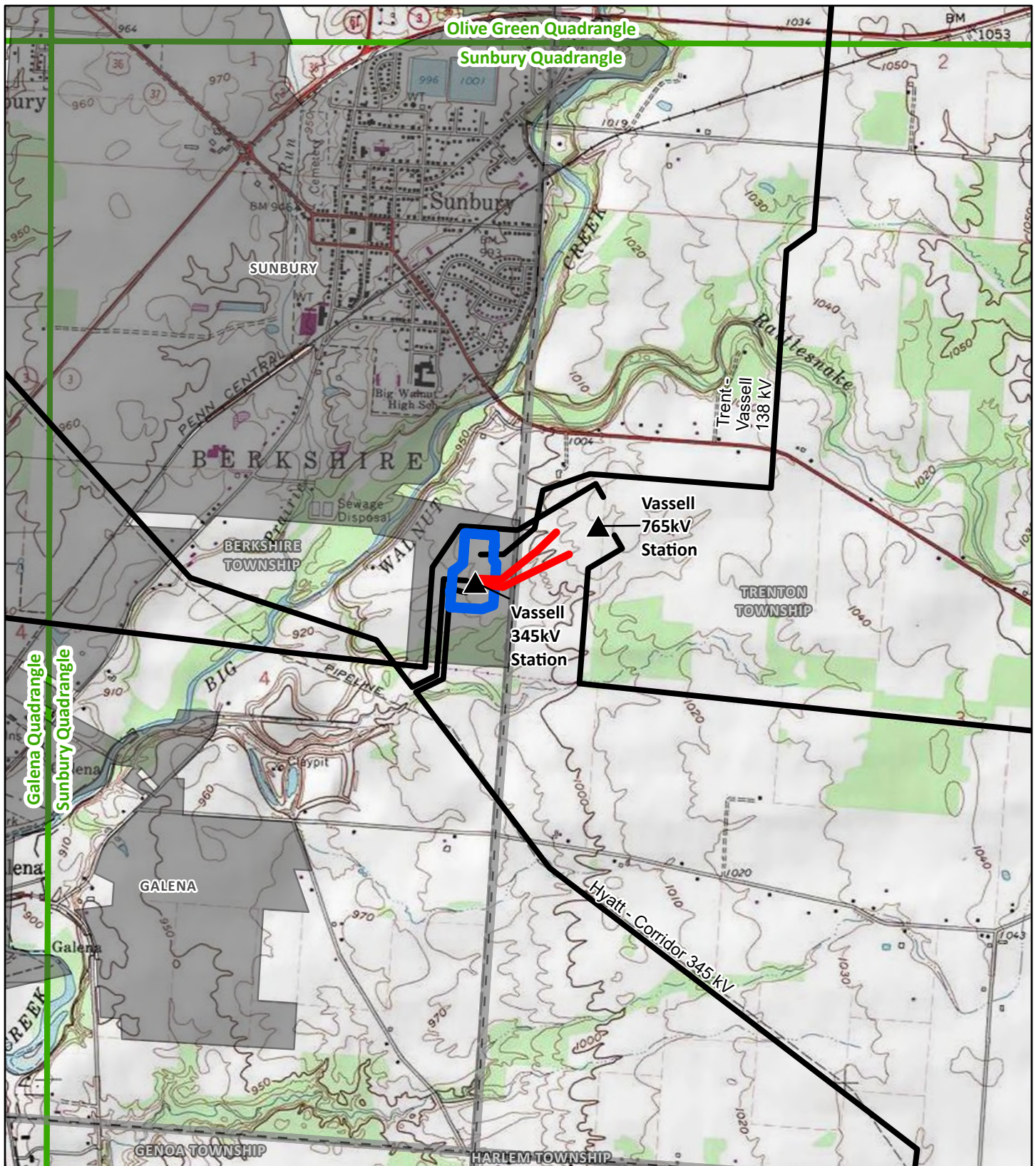
Based on a review of the Protected Areas Database of the United States as well as the Conservation Easement Database, there are no state or national parks, forests, wildlife areas or mapped conservation easements in the vicinity of the Project.

B(10)(g) Unusual Conditions

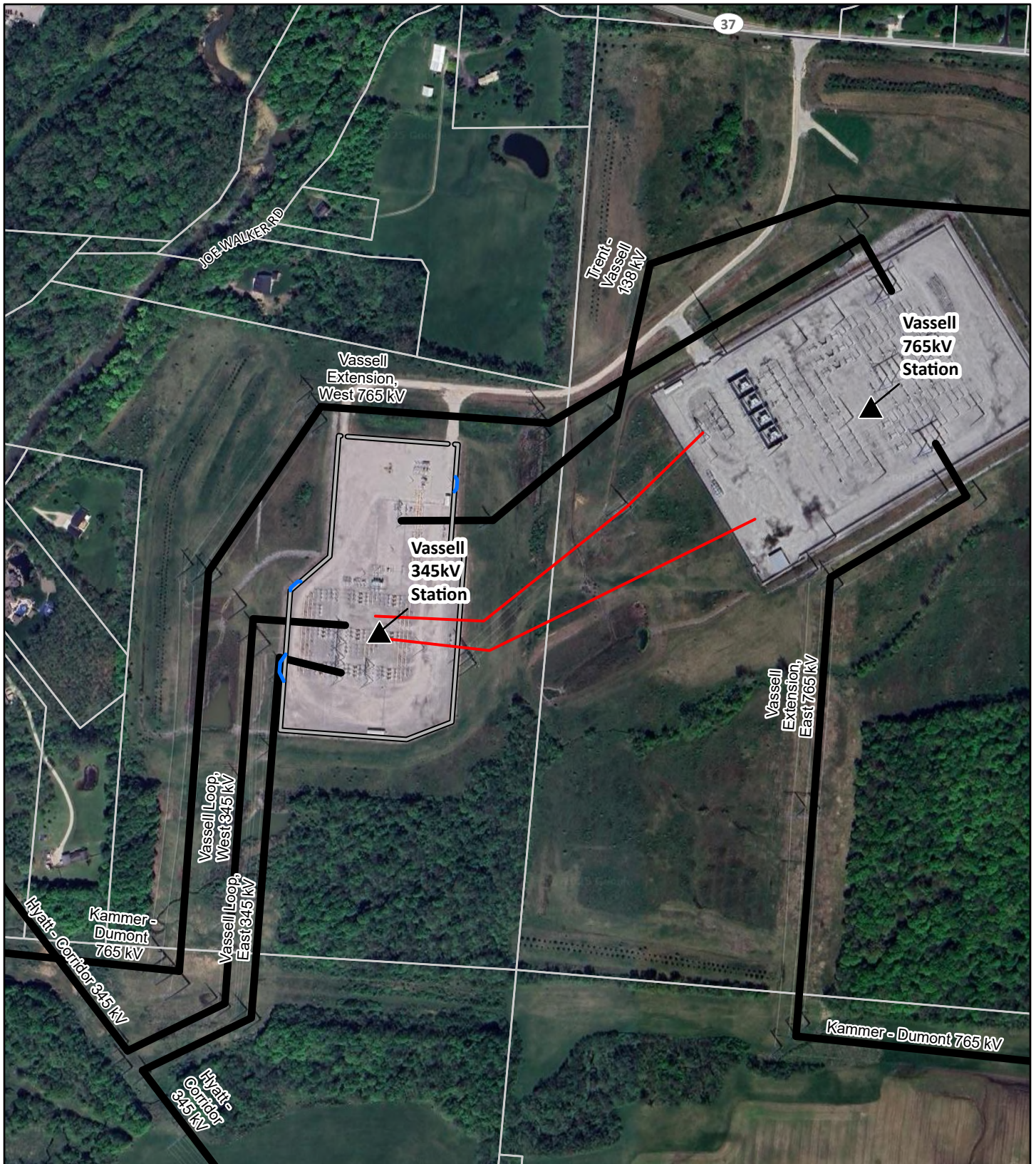
Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.

To the best of the Company's knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.

Appendix A Project Maps



<p>▲ Existing AEP Substation</p> <p>— Existing AEP Transmission Line</p> <p>— Proposed Vassell Station Expansion</p> <p>— Proposed 765 kV - 345 kV No. 1 and No. 2 Tie Lines (see Case No. 25-0663-EL-BLN)</p> <p>— Municipality</p> <p>— Township Boundary</p> <p>— County Boundary</p> <p>— USGS 7.5' Topographic Quad Boundary</p>	<p>Sources: USGS (2021)</p> <p>StatePlane Ohio North NAD 83</p> <p>June 16, 2025</p>	<p>Map 1 Project Area</p> <p>Vassell 345 kV Station Upgrades Project</p> <p>0 1,000 2,000 3,000 US Feet</p>
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<ul style="list-style-type: none"> ▲ Existing AEP Substation — Proposed 765 kV - 345 kV Tie Lines (see Case No. 25-0663-EL-BLN) — Existing 345kV Station Fence — Proposed 345kV Station Fence Expansion — Existing AEP Transmission Line □ Parcel Boundary 	<p>Sources: Google Imagery (2023)</p> <p>StatePlane Ohio North NAD 83</p> <p>June 16, 2025</p>		<p>Map 2 Aerial Map</p> <p>Vassell 345 kV Station Upgrades Project</p> <p>0 250 500 750 Feet</p>
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Appendix B Long Term Forecast Report and PJM Solution



AEP Transmission Zone: Baseline 2023 RTEP Window 2 Clusters 2, 3 & 5

Process Stage: Recommended Solution – Second Read

Criteria: Summer/Winter Generator Deliverability, N-1-1

Assumption Reference: 2023 RTEP assumptions

Model Used for Analysis: 2028 RTEP cases

Proposal Window Exclusion: None

Problem Statement:

Cluster 3: 2023W2-GD-S186, 2023W2-GD-S141, 2023W2-N2-WT1, 2023W2-N2-ST4, 2023W2-N2-ST2, 2023W2-N1-ST15, 2023W2-N2-ST1, 2023W2-N2-ST30, 2023W2-N2-ST31, 2023W2-N2-WT4, 2023W2-N2-ST7, 2023W2-N2-ST28, 2023W2-N2-ST39, 2023W2-N2-ST37, 2023W2-N2-ST48, 2023W2-N2-ST46

In 2028 RTEP summer case, the **Genoa – Westar 138 kV** line is overloaded in generator deliverability test for N-2 outages; and in 2028 RTEP summer and winter cases, the Genoa – Westar 138 kV line is overloaded in N-1-1 test for multiple contingency pairs

Cluster 5: 2023W2-N2-ST6, 2023W2-N2-ST5, 2023W2-N1-ST14, 2023W2-GD-S165, 2023W2-N1-ST13, 2023W2-N2-ST3, 2023W2-GD-S135, 2023W2-N2-ST32, 2023W2-N2-ST43, 2023W2-N2-ST22, 2023W2-N2-ST44, 2023W2-N2-ST40, 2023W2-N2-WT5, 2023W2-N2-ST8, 2023W2-N2-WT3, 2023W2-N2-ST17, 2023W2-N2-ST49, 2023W2-N2-ST18, 2023W2-N2-ST13, 2023W2-N2-ST25, 2023W2-N2-ST47, 2023W2-N2-ST24

In 2028 RTEP summer case, the **Maliszewski – Polaris 138 kV** line is overloaded in generator deliverability test and basecase analysis test for N-2 outages; and in 2028 RTEP summer and winter cases, the Maliszewski – Polaris 138 kV line is overloaded in N-1-1 test for multiple contingency pairs





AEP Transmission Zone: Baseline 2023 RTEP Window 2 Clusters 2, 3 & 5

Problem Statement (Conti.):

Single floaters:

2023W2-N2-ST50, 2023W2-N2-ST9, 2023W2-N2-ST16, 2023W2-N2-ST34, 2023W2-N2-ST45

In 2028 RTEP summer case, the **Genoa – Spring Road 138 kV** line is overloaded in N-1-1 test for multiple contingency pairs.

2023W2-N2-ST11, 2023W2-N2-ST41, 2023W2-N2-WT8, 2023W2-N2-ST10, 2023W2-N2-WT7, 2023W2-N2-ST36, 2023W2-N2-ST12, 2023W2-N2-ST23, 2023W2-N2-ST14

In 2028 RTEP summer and winter cases, the **Polaris – Westar 138kV** line is overloaded in N-1-1 test for multiple contingency pairs.

Cluster 2: All of the above (cluster 3 & 5, and single floaters), plus

2023W2-N1-ST21, 2023W2-N1-ST20, 2023W2-N1-ST23, 2023W2-N1-ST22, 2023W2-N1-ST25, 2023W2-N1-ST24, 2023W2-N1-ST27, 2023W2-N1-ST26, 2023W2-N1-ST19, 2023W2-N2-ST33, 2023W2-N2-ST38, 2023W2-N2-ST35, 2023W2-GD-S170, 2023W2-N1-ST10, 2023W2-N1-ST12, 2023W2-N1-ST16, 2023W2-N1-ST18, 2023W2-N1-ST17, 2023W2-N1-ST1, 2023W2-N2-ST21, 2023W2-N1-ST3, 2023W2-N1-ST2, 2023W2-N2-ST20, 2023W2-N1-ST5, 2023W2-N1-WT1, 2023W2-N1-ST4, 2023W2-N1-ST7, 2023W2-N1-WT3, 2023W2-N1-ST6, 2023W2-N1-WT2, 2023W2-N2-ST29, 2023W2-N2-ST27, 2023W2-N2-ST26, 2023W2-GD-S4, 2023W2-GD-S3, 2023W2-N2-WT6, 2023W2-GD-W154, 2023W2-GD-W155, 2023W2-GD-W153, 2023W2-GD-W156, 2023W2-GD-S115, 2023W2-GD-S114, 2023W2-N2-ST42, 2023W2-GD-S6, 2023W2-GD-W162, 2023W2-GD-W165, 2023W2-GD-W163, 2023W2-GD-W164, 2023W2-GD-S122, 2023W2-GD-S121, 2023W2-GD-S123, 2023W2-GD-S126, 2023W2-GD-S125, 2023W2-GD-S116, 2023W2-GD-W59, 2023W2-GD-W58, 2023W2-N1-WT10, 2023W2-N1-WT13, 2023W2-N1-WT14, 2023W2-N1-WT11, 2023W2-N1-WT12, 2023W2-GD-W213, 2023W2-N2-WT2, 2023W2-GD-W214, 2023W2-N2-ST3, 2023W2-GD-W217, 2023W2-GD-W215, 2023W2-GD-W216, 2023W2-GD-S127, 2023W2-N1-ST9, 2023W2-N1-WT5, 2023W2-N1-ST8, 2023W2-N1-WT4, 2023W2-N1-WT7, 2023W2-N1-WT6, 2023W2-N1-WT9, 2023W2-N1-WT8, 2023W2-N2-ST11, 2023W2-N2-ST19, 2023W2-N2-ST15, 2023W2-GD-W19, 2023W2-GD-W25

In 2028 RTEP summer and winter cases, **Maliszewski transformer 765/138KV transformer and Maliszewski 138kV series reactor bypass** are overload in generator deliverability test and basecase analysis test for N-1 and N-2 outages.

In 2028 RTEP Summer case, the **Morse – Spring Road 138kV** line, the **Marysville – Hyatt 345kV** line, the **Hyatt – Vassell 345kV** line, the **Hyatt – Maliszewski #2 138kV** line, the **Genoa – Maliszewski 138kV #2** line are overloaded in N-1-1 test for multiple contingency pairs.



AEP Transmission Zone: Baseline 2023 RTEP Window 2 Clusters 2, 3 & 5

Recommended Solution: Proposal #117

Connect and energize a second 765/345 kV bank at Vassell station. **(B3852.1) Estimated Cost: \$30.829M**
Replace 765 kV breaker D at Maliszewski station.

(B3852.2)

Estimated Cost: \$2.900M

Total Estimated Cost: \$33.729 M

Required IS Date: 6/1/2027

Projected IS Date: 6/1/2027

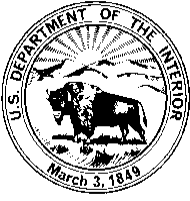
Previously Presented: 6/4/2024

Facility Ratings:

Branch	Existing Facility Ratings SN/SE/WN/WE (MVA)	Preliminary Facility Ratings SN/SE/WN/WE (MVA)
Vassell 765/345 Transformer #2	-	2855/2897/2897/2897
Maliszewski – Marysville 765KV	4047/4142/4484/4961	4047/4571/4484/4961



Appendix C Agency Correspondence



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994



April 14, 2023

Project Code: 2023-0066336

Dear Mr. Holmes:

The U.S Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened, endangered, and proposed species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: The endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found 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 breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet 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, rock crevices and abandoned mines.

Federally Proposed Species: On September 14, 2022, the Service proposed to list the tricolored bat (*Perimyotis subflavus*) as endangered under the ESA. The bat faces extinction due to the impacts of white-nose syndrome, a deadly disease affecting cave-dwelling bats across the continent. During spring, summer, and fall, this species roosts primarily among leaf clusters of live or recently dead trees, emerging at dusk to hunt for insects over waterways and forest edges. While white-nose syndrome is by far the most serious threat to the tricolored bat, other threats now have an increased significance due to the dramatic decline in the species' population. These threats include disturbance to bats in roosting, foraging, commuting, and over-wintering habitats. Mortality due to collision with wind turbines, especially during migration, has also been documented across their range. Conservation measures for the Indiana bat and northern long-eared bat will also help to conserve the tricolored bat.

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥ 3 inches dbh, we recommend avoiding tree removal 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 removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats.

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats and northern long-eared bats. If Indiana bats and northern long-eared bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then 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 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. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army 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. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or 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, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.ohio.gov.

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,

A handwritten signature in blue ink, appearing to read "Patrice Ashfield". The signature is fluid and cursive, with the first name "Patrice" and last name "Ashfield" clearly distinguishable.

Patrice Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Eileen Wyza, ODNR-DOW



Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR

MARY MERTZ, DIRECTOR

Office of Real Estate

John Kessler, Chief

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May 15, 2023

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Re: 23-0397; AEP Vassell 765kV and 345kV Transformer and Site Hardening Projects

Project: The proposed project involves expanding the existing 345kV yard and 765kV yard, installing a 0.3-mile greenfield 345kV transmission line to connect the existing 345kV and 765kV yards, and upgrading the existing fence at the 345kV yard.

Location: The proposed project is located in Trenton Township, Delaware County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. 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 National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state, or federal agency nor relieve the applicant of the obligation to comply with any local, state, or federal laws or regulations.

Natural Heritage Database: A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that Best Management Practices be utilized to minimize erosion and sedimentation.

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats

predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the “[OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING](#)”. If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS “[RANGE-WIDE INDIANA BAT & NORTHERN LONG-EARED BAT SURVEY GUIDELINES](#).” If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

This project is within the range of the following listed mussel species.

Federally Endangered

rayed bean (*Villosa fabalis*)

snuffbox (*Epioblasma triquetra*)

Federally Threatened

rabbitsfoot (*Quadrula cylindrica cylindrica*)

State Threatened

Salamander Mussel (*Simpsonaias ambigua*)

pondhorn (*Unio merus tetralasmus*)

Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these or other mussel species.

The project is within the range of the northern harrier (*Circus hudsonius*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species’ nesting period of April 15 through July 31. If this habitat will not be impacted, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the US Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The [local floodplain administrator](#) should be contacted concerning the possible need for any floodplain permits or approvals for this project.

ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator

Appendix D Ecological Report

VASSELL 765KV AND 345KV TRANSFORMER AND SITE HARDENING PROJECTS DELAWARE COUNTY, OHIO

ECOLOGICAL REPORT

Prepared for:

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Project #: 60706418, 60706424 and 60706428

December 2023

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1.0 INTRODUCTION

American Electric Power Ohio Transmission Company (AEP Ohio Transco) is proposing the Vassell 765 kilovolt (kV) and 345kV Transformer and Site Hardening Projects (Project) in Delaware County, Ohio (OH). The Project consists of three components. The Vassell Station component which consists of the expansion of the existing 345kV yard and 765kV yard for the installation of major equipment and a DICM Expansion module in the 765kV yard at the existing Vassell Substation. The Vassell 765kv – Vassell 345kV Tie Line No. 2 component is to install a new 0.3-mile greenfield 345kV transmission tie line to connect the existing 345kV and 765kV Yards together at the Vassell Station. The final component, Upgrade 345kV Station Fence, is to upgrade the existing fence at the 345kV yard of the existing Vassell Substation due to the expansion of the 345kV substation yard. The Project survey area associated with this Report for the Project is located within the Sunbury, OH United States Geologic Survey (USGS) 7.5-minute topographical quadrangle as displayed on Project Overview Map (**Figure 1**).

The purpose of the field survey was to assess the presence of wetlands and possible “waters of the United States” (WOTUS) that occur within the proposed Project area. Secondly, land uses were also recorded to classify and characterize potential habitat for threatened, and endangered species. This report will be used to assist AEP Ohio Transco’s efforts to identify potential WOTUS and threatened and endangered species habitat present within the proposed Project area to avoid or minimize impacts during construction activities.

2.0 METHODOLOGY

The field survey was conducted within an entirely AEP Ohio Transco owned parcel, which encompasses the three components of the Project, composing a Project survey area of approximately 130-acres. Prior to conducting field surveys, digital United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey data, United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data, and USGS National Hydrography Dataset (NHD), Federal Management Agency (FEMA) 100-year floodplain data FEMA, and USGS 7.5-minute topographic maps were reviewed to identify the occurrence and location of potential wetland and/or stream areas.

Field survey activities included recording the physical boundaries of observed water features using sub-meter capable EOS Arrow Global Positioning System (GPS) units in conjunction with ArcGIS Field Maps application on iPad tablets. The GPS data was imported into ArcMap Geographic Information System (GIS) software, where the data was reviewed, edited for accuracy, and compiled in a format suitable for transfer and use by AEP Ohio Transco. Water features were delineated and assessed based upon the appropriate procedures detailed below. Land uses observed within the Project survey area were assigned a general classification based upon the principal land characteristics and vegetation cover of the location.

2.1 WETLAND DELINEATION

The Project survey area was evaluated according to the procedures outlined in the United States Army Corps of Engineers (USACE) *Corps of Engineers Wetland Delineation Manual* (Environmental Laboratory, 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)* (USACE, 2010).

During field survey activities AECOM utilized the routine on-site delineation method described in the 1987 *Manual* and *Regional Supplement* that consisted of a pedestrian site reconnaissance, including identifying the vegetation communities, soils identification, a geomorphologic assessment of hydrology, and notation of disturbance. If a wetland was identified, AECOM completed a USACE Wetland Determination Data Form (USACE Data form) within each unique wetland habitat to serve as a representative of the wetland hydrology, vegetative community, and soil characteristics. Adjacent to each wetland complex, AECOM completed an additional USACE Data form as a representative of the upland community.

2.1.1 WETLAND CLASSIFICATION

Wetlands identified in the field were classified based on the naming convention found in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin *et al*, 1979). The unique wetland habitats were classified as palustrine emergent (PEM), palustrine forested (PFO), palustrine unconsolidated bottom (PUB), palustrine scrub-shrub (PSS), or other classifications for some wetlands, multiple Cowardin classifications may be present where more than one classification's vegetation is dominant (vegetation covers 30 percent or more of the substrate). Where multiple Cowardin classifications are present, the Cowardin classification of the plants that constitute the uppermost layer of vegetation having 30% or greater coverage is used for the classification.

2.1.2 WETLAND ASSESSMENT

Each delineated wetland was assessed following the Ohio Environmental Protection Agency (OEPA) *Ohio Rapid Assessment Method for Wetlands v. 5.0* (ORAM) (Mack, 2001). Wetland assessments utilized the 10-page ORAM form, providing a final Category rating for each wetland.

2.2 STREAM ASSESSMENT

Streams were identified by the presence of a defined bed and bank, and evidence of an ordinary high-water mark (OHWM). The USACE defines OHWM as "that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas" (USACE, 2005).

2.2.1 OEPA PRIMARY HEADWATER HABITAT ASSESSMENT

Stream assessments were conducted using the methods described in the OEPA's *Methods for Assessing Habitat in Flowing Waters: Using OEPA's Qualitative Habitat Evaluation Index (QHEI)* (Rankin, 2006) and in the OEPA's *Field Methods for Evaluating Primary Headwater Streams in Ohio* (OEPA, 2020). Streams associated with watershed area less than or equal to 1.0 square mile (259ha), and a maximum depth of natural pools equal to or less than 15.75 inches were evaluated utilizing the Headwater Habitat Evaluation Index (HHEI) methodology; all other streams were assessed utilizing QHEI methodology. Flow regime (ephemeral, intermittent, perennial) was determined by the appropriate stream assessment score per OEPA manual (OEPA, 2020) or by AECOM's professional opinion.

Streams assessed in the Project survey area were reviewed for existing OEPA Aquatic Life Use Designations per OEPA's Water Quality Standards (OAC Chapter 3745-1). Those without an existing use designation were assigned a provisional aquatic life use designation based upon habitat assessment results (Rankin, 1989; OEPA 2020).

2.2.2 OEPA 401 WATER QUALITY CERTIFICATION FOR NATIONWIDE PERMIT ELIGIBILITY

The OEPA has designated each watershed in the state on based on whether it may be ineligible for coverage under Ohio EPA's 401 Water Quality Certification (WQC) for Nationwide Permits (OEPA, 2017). Mapping provided by OEPA illustrate the eligibility of streams in the area to fall under the Nationwide Permit for 401 certification or if an individual state WQC needs to be applied for. Three categories are identified: eligible, ineligible, and possibly eligible with additional field screening required. Impacts to streams within each watershed would then have eligibility for 401 WQC determined by the watershed category. The three categories are defined as:

Eligible: Streams within the watershed are eligible for coverage under OEPA's WQC for the Nationwide Permits if all other general and regional special terms and conditions are met.

Ineligible: Projects affecting high quality streams and undesignated streams draining directly to high quality streams, as represented in the map, must undergo an individual 401 WQC review process.

Possibly Eligible: Additional field screening procedures are required for streams in the watershed to determine appropriate eligibility. Projects affecting undesignated streams within those HUC12 watersheds that do not directly but eventually drain into high quality waters, might be eligible for coverage under OEPA's 401 WQC for Nationwide Permits depending on the results of a field screening assessment. The procedures for determining individual stream eligibility in this scenario are specified in Appendix D "Stream Eligibility Determination Process" of the OEPA OH State WQC of the 2017 Nationwide Permit Reauthorization.

2.2.3 UPLAND DRAINAGE FEATURES

An upland drainage feature (UDF) is a non-jurisdictional drainage that does not meet the criteria of either a jurisdictional stream or a wetland. A UDF generally lacks an OWHM (USACE, 2005), and are equivalent to a swale or an erosional feature as described by the USACE: “generally shallow features in the landscape that may convey water across upland areas during and following storm events. Swales usually occur on nearly flat slopes and typically have grass or other low-lying vegetation throughout the swale” (USACE, 2005).

A roadside ditch may also be documented as a UDF if it meets the “not potentially jurisdictional” characterization as described in the Office of Environmental Services *Roadway Ditch Characterization Flowchart* (Ohio Department of Transportation, 2014). This would include a ditch that originates entirely within the roadway right-of-way, has a seasonal flow regime, was not constructed to drain a wetland, and does not have hydrophytic vegetation extending more than an insignificant amount beyond its original configuration.

In addition, UDF’s (including swales, ditches, and other erosional features) are generally not WOTUS except in certain circumstances, such as relocated streams.

2.3 RARE, THREATENED, AND ENDANGERED SPECIES

AECOM conducted a threatened, and endangered species review and general field habitat surveys within the Project survey area. AECOM submitted requests to Ohio Department of Natural Resources (ODNR) Office of Real Estate – Environmental Review Section and the United States Fish and Wildlife Service (USFWS) Ohio Ecological Services Field Office soliciting comments on the proposed Project. Agency-identified species of concern and available species-specific information was reviewed to identify the various habitat types that listed species are known to inhabit.

AECOM field ecologists conducted a general habitat survey in conjunction with the stream and wetland field surveys as part of assessing potential impacts to rare, threatened, and endangered species. Land uses within the Project survey area were assigned a general classification based upon the principal land characteristics and vegetative cover as observed during the field surveys.

AECOM conducted a desktop assessment of the Project survey area and a quarter-mile buffer around it to identify potentially occurring winter bat hibernaculum that may be present near the Project which is located in **Appendix A**. This assessment was conducted by reviewing data on mining activity and karst geology from the ODNR Division of Mineral Resources and USGS websites.

3.0 RESULTS

On April 12 and 13, 2023, AECOM ecologists walked the Project survey area to conduct the wetland delineation, stream assessment and habitat survey. During the delineation, within the Project survey area, AECOM delineated nine wetlands, one stream, and six UDFs. The delineated features are discussed in detail in the following sections.

3.1 WETLAND DELINEATION

3.1.1 PRELIMINARY SOILS EVALUATION

According to the USDA/NRCS Web Soil Survey, six map units are mapped within the Project survey area (USDA NRCS, 2021b). Of these, one soil map unit is identified as hydric, and four soil map units contain hydric inclusions (USDA NRCS, 2021a). Soils indicated as hydric inclusions are not predominately hydric soils and hydric soils are more likely to be found in topographic settings, **Table 1** below provides a detailed overview of all soil series and soil map units present within the Project survey area. Soil map units located in the Project survey area and vicinity are shown on **Figure 2**.

TABLE 1 - SOIL MAP UNITS AND DESCRIPTIONS WITHIN THE PROJECT SURVEY AREA

Soil Series	Map Unit Symbol	Map Unit Description	Topographic Setting	Hydric	Hydric Component (%)
Amanda	AmD2	Amanda silt loam, 12 to 18 percent slopes, eroded	Ground moraines, end moraines	No	None
Bennington	BeA	Bennington silt loam, 0 to 2 percent slopes	Ground moraines, end moraines	No*	Condit 5% Pewamo, low carbonate till 3%
	BeB	Bennington silt loam, 2 to 6 percent slopes	End moraines, ground moraines	No*	Pewamo, low carbonate till 3% Condit 3%
Centerburg	Cen1B1	Centerburg silt loam, 2 to 6 percent slopes	Ground moraines, end moraines	No*	Condit 4% Marengo 3%
	Cen1C2	Centerburg silt loam, 6 to 12 percent slopes, eroded	End moraines, ground moraines	No*	Condit 4%
Pewamo	PwA	Pewamo silty clay loam, 0 to 1 percent slopes	Drainageways on till plains, depressions on till plains	Yes	Pewamo 85% Minster 6%

No* = Hydric inclusions

3.1.2 NATIONAL WETLAND INVENTORY MAP REVIEW

According to NWI data covering the Project location, the Project survey area contains no mapped NWI wetlands. The locations of NWI mapped wetlands in the Project vicinity are shown on **Figure 2**.

3.1.3 DELINEATED WETLANDS

During the field survey on April 12-13, 2023, AECOM delineated six PEM wetlands (W-MRK-001, W-MRK-002, W-MRK-004, W-MRK-007, W-MRK-008, and W-MRK-009), two PEM/PUB wetland complexes (W-

MRK-003, and W-MRK-006), and one PEM/PFO wetland complex (W-MRK-005) within the Project survey area. Each of the identified wetlands were assessed as an ORAM Category 1 wetlands. No Category 2 or Category 3 wetlands were identified within the Project survey area. The AECOM delineation boundaries are provided on **Figures 2 and 3**.

All the wetlands within the Project survey area were determined to be isolated, by AECOM. Final jurisdictional status can only be determined by the USACE, and AECOM assessments are provisional. The location and approximate extent of the wetland identified within the Project survey area is shown on **Figure 3**. Details for the delineated wetlands in the Project survey area are provided in **Table 2**. Completed USACE data forms and photographs of the wetlands are provided in **Appendix B**. There is a potential of some of the delineated wetland features to change from wetlands into engineered stormwater features. However, at time of delineation these were called out as wetlands.

TABLE 2 – SUMMARY OF DELINEATED WETLANDS WITHIN THE PROJECT SURVEY AREA

Wetland ID	Location		Isolated?	Habitat Type	Delineated Area (acre)	ORAM		Nearest Structure # (Existing / Proposed)	Existing Structure # in Wetland	Structure Installation Method	Proposed Impacts	
	Latitude	Longitude				Score	Category				Temporary Matting Area (acre)	Permanent Impact Area (acre)
W-MRK-001	40.23085	-82.85491	Yes	PEM	0.03	12	1	N/A	None	N/A	TBD	TBD
W-MRK-002	40.22864	-82.85490	Yes	PEM	0.28	21	1	N/A	None	N/A	TBD	TBD
W-MRK-003	40.22829	-82.85488	Yes	PEM	1.12	21	1	N/A	None	N/A	TBD	TBD
	40.22771	-82.85483		PUB	0.37		1	N/A	None	N/A	TBD	TBD
W-MRK-004	40.22803	-82.85580	Yes	PEM	0.10	21	1	N/A	None	N/A	TBD	TBD
W-MRK-005	40.22712	-82.85578	Yes	PEM	0.20	21	1	N/A	None	N/A	TBD	TBD
	40.22670	-82.85574		PFO	0.17		1	N/A	None	N/A	TBD	TBD
W-MRK-006	40.22806	-82.85003	Yes	PEM	2.07	18	1	N/A	None	N/A	TBD	TBD
	40.22835	-82.84936		PUB	0.11		1	N/A	None	N/A	TBD	TBD
W-MRK-007	40.22910	-82.85014	Yes	PEM	0.65	18	1	N/A	None	N/A	TBD	TBD
W-MRK-008	40.23036	-82.85068	Yes	PEM	1.04	15	1	N/A	None	N/A	TBD	TBD
W-MRK-009	40.23133	-82.84397	Yes	PEM	0.24	13	1	N/A	None	N/A	TBD	TBD
Total:					6.38						TBD	TBD

3.2 STREAM DELINEATION

During the field survey on April 12-13, 2023, AECOM delineated one intermittent stream, S-MRK-001, within the Project survey area. The intermittent stream was assessed using the HHEI evaluation form. S-MRK-001 was classified as a Modified Class 2 PHW. A summary of the delineated stream is provided below in **Table 5**. Photographs of the delineated stream resource are provided in **Appendix C**.

AECOM has provided a provisional determination that all delineated streams within the Project survey area appear to be jurisdictional (i.e., WOTUS), based on their observed or presumed confluence with downstream waters. Final jurisdictional status can only be determined by the USACE, and AECOM assessments are provisional. A summary of the delineated features is provided in **Table 3**. Stream data forms and photographs of each delineated stream resource are provided in **Appendix C**.

TABLE 3 - SUMMARY OF DELINEATED STREAMS WITHIN THE PROJECT SURVEY AREA

Stream ID	Location		Stream Type	Stream Name	Delineated Length (feet)	Bankfull Width (feet)	OHWM Width (feet)	Field Evaluation			Ohio EPA 401 Eligibility	Stream Crossing?	Proposed Impacts	
	Latitude	Longitude						Method	Score	Classification / Rating / OAC Designation			Fill Type	Length (LF)
S-MRK-001	40.22951	-82.84427	Intermittent	UNT to Big Walnut Creek	572.06	4	1.5	HHEI	47	Modified Class II PHW	Eligible	None	-	-

3.2.1 OEPA STREAM ELIGIBILITY

The Project occurs within one watershed, Prairie Rub-Big Walnut Creek (HUC-12 050600011306) that is designated as 401 WQC Eligible. OEPA stream eligibility mapping for the Project vicinity is provided on **Figure 4**.

3.3 FEMA 100 YEAR FLOODPLAINS

Mapped FEMA designated 100-year floodplains and floodways are displayed on **Figure 2** (FEMA 2017). No regulated FEMA 100-year floodplains and/or floodways are located within the Project survey area.

3.4 PONDS

During the field survey, AECOM did not identify any ponds within the Project survey area.

3.5 UPLAND DRAINAGE FEATURES

During the field survey, six UDFs were identified within the Project survey area. The extend of the UDFs is displayed on **Figures 2 and 3** and photographs are provided in **Appendix D**.

3.6 VEGETATIVE COMMUNITIES

AECOM ecologists conducted a general habitat survey in conjunction with the stream and wetland field survey. As described in Table 5 below, the Project area contains old field, urban, woodlands, and stream/wetlands. Habitat descriptions applicable to the Project are provided below. Vegetative communities are depicted visually on aerial photography in **Figure 5**. Representative photographs of the vegetative communities in the Project survey area are provided as **Appendix E**.

TABLE 5- VEGETATIVE COMMUNITIES WITHIN THE PROJECT SURVEY AREA

Vegetative Community	Description	Approximate Acreage Within the Project Survey Area	Approximate Percentage Within the Project Survey Area
Old Field	Grassland and/or herbaceous cover alongside roads, field borders, and abandoned fields, as the initial stages of recolonization by plants following disturbance, and are infrequently mowed areas dominated by grasses, forbs, and occasional woody species. This community type is typically short-lived, giving way progressively to shrub and forest communities unless periodically re-disturbed, in which case they remain as old fields.	78.89	60.54%
Urban	Urban areas are areas developed with residential and commercial land uses, including roads, buildings and parking lots. These areas are generally devoid of significant woody and herbaceous vegetation.	41.85	32.12%
Streams/Wetlands	Streams and wetlands were observed both within and beyond the survey area for the Project.	6.27	4.81%
Woodlands	Woodlands are present along the Project survey area. The dominant tree species was red maple (<i>Acer rubrum</i>) and dominant shrub-layer species was quaking aspen (<i>Populus tremuloides</i>).	3.29	2.52%
Totals:		130.3	100%

3.7 RARE, THREATENED AND ENDANGERED SPECIES AGENCY COORDINATION

Protected Species Agency Consultation –

On April 13, 2023, coordination letters were sent to USFWS and the ODNR Ohio Natural Heritage Program (ONHP) and Division of Wildlife (DOW), seeking an environmental review for the Project for potential impacts to threatened and endangered species.

Responses were received from the USFWS on April 14, 2023, and from the ODNR on May 15, 2023. According to a response letter received from the USFWS, three federally listed bat species were identified within range of the Project area. Regarding state threatened and endangered species that may occur within the Project vicinity, ten species were listed by the ODNR.

Correspondence letters from the USFWS and ODNR for Project are included as **Appendix F. Table 6** provides a list of species of concern identified by the agencies as potentially occurring within the vicinity of the Project. Photographs of the habitat within the Project area are provided as **Appendix E**.

TABLE 3
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT SURVEY AREA

Common Name (Scientific Name)	State Status	Federal Status	Typical Habitat	Habitat Observed	Avoidance Dates	Agency Comments	Potential Impacts
Mammals							
Indiana Bat (<i>Myotis sodalis</i>)	Endangered	Endangered	<p><u>Summer habitat</u> During spring/summer, this bat species roost in trees behind loose, exfoliating bark, in crevices and cavities, or in leaves.</p> <p><u>Hibernaculum(a)</u> During winter, this species hibernates in humid mines, caves, and occasionally man-made structures.</p>	<p><u>Summer habitat</u> Within the Project survey area, the existing land use is composed of two existing station sites, old fields, streams/wetlands, and non-contiguous woodlands. It's unlikely this Project survey area is suitable for bat roosting trees.</p> <p>No – No Mines openings and/or known caves are located within 0.25 miles of Project area and USFWS did not identify known hibernacula within 5-miles of the Project.</p> <p>Field evaluations did not identify any potential hibernaculum(a) within the Project area (2023 Joint Guidance)*.</p>	April 1 – September 30	<p><u>Summer habitat</u> ODNR and USFWS recommends adherence to Avoidance Dates for Tree Clearing Activities (April 1 – September 30).</p> <p><u>Hibernaculum(a)</u> The ODNR DOW recommends a desktop habitat assessment to be conducted to identify potential hibernacula within 0.25 miles of the Project area. If habitat assessment finds potential hibernaculum within 0.25 miles, a revised seasonal tree clearing restriction (March 15 to November 15) is recommended (2023 Joint Guidance)*. If absence or no tree cutting or subsurface impacts are proposed, the Project is not likely to impact this species.</p>	<p><u>Summer habitat</u> Potential summer roosting habitat is not present within the Project area and seasonal tree clearing, between October 1 and March 31, is recommended.</p> <p><u>Hibernaculum(a)</u> No impacts to winter hibernacula were identified due to absence of caves, mines, or portals within 0.25-miles of the Project.</p>
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Endangered	Endangered	<p><u>Summer habitat</u> During spring/summer, this bat species roost in trees behind loose, exfoliating bark, in crevices and cavities, or in leaves.</p> <p><u>Hibernaculum(a)</u> During winter, this species hibernates in humid mines, caves, and occasionally man-made structures.</p>	<p><u>Summer habitat</u> Within the Project survey area, the existing land use is composed of two existing station sites, old fields, streams/wetlands, and non-contiguous woodlands. It's unlikely this Project survey area is suitable for bat roosting trees.</p> <p>No – No Mines openings and/or known caves are located within 0.25 miles of Project area and USFWS did not identify known hibernacula within 5-miles of the Project.</p> <p>Field evaluations did not identify any potential hibernaculum(a) within the Project area (2023 Joint Guidance)*.</p>	April 1 – September 30	<p><u>Summer habitat</u> ODNR and USFWS recommends adherence to Avoidance Dates for Tree Clearing Activities (April 1 – September 30).</p> <p><u>Hibernaculum(a)</u> The ODNR DOW recommends a desktop habitat assessment to be conducted to identify potential hibernacula within 0.25 miles of the Project area. If habitat assessment finds potential hibernaculum within 0.25 miles, a revised seasonal tree clearing restriction (March 15 to November 15) is recommended (2023 Joint Guidance)*. If absence or no tree cutting or subsurface impacts are proposed, the Project is not likely to impact this species.</p>	<p><u>Summer habitat</u> Potential summer roosting habitat is not present within the Project area and seasonal tree clearing, between October 1 and March 31, is recommended.</p> <p><u>Hibernaculum(a)</u> No impacts to winter hibernacula were identified due to absence of caves, mines, or portals within 0.25-miles of the Project.</p>
Little brown bat (<i>Myotis lucifugus</i>)	Endangered	NA	<p><u>Summer habitat</u> During spring/summer, this bat species roost in trees behind loose, exfoliating bark, in crevices and cavities, or in leaves.</p> <p><u>Hibernaculum(a)</u> During winter, this species hibernates in humid mines, caves, and occasionally man-made structures.</p>	<p><u>Summer habitat</u> Within the Project survey area, the existing land use is composed of two existing station sites, old fields, streams/wetlands, and non-contiguous woodlands. It's unlikely this Project survey area is suitable for bat roosting trees.</p> <p>No – No Mines openings and/or known caves are located within 0.25 miles of Project area and USFWS did not identify known hibernacula within 5-miles of the Project.</p> <p>Field evaluations did not identify any potential hibernaculum(a) within the Project area (2023 Joint Guidance)*.</p>	April 1 – September 30	<p><u>Summer habitat</u> ODNR and USFWS recommends adherence to Avoidance Dates for Tree Clearing Activities (April 1 – September 30).</p> <p><u>Hibernaculum(a)</u> The ODNR DOW recommends a desktop habitat assessment to be conducted to identify potential hibernacula within 0.25 miles of the Project area. If habitat assessment finds potential hibernaculum within 0.25 miles, a revised seasonal tree clearing restriction (March 15 to November 15) is recommended (2023 Joint Guidance)*. If absence or no tree cutting or subsurface impacts are proposed, the Project is not likely to impact this species.</p>	<p><u>Summer habitat</u> Potential summer roosting habitat is not present within the Project area and seasonal tree clearing, between October 1 and March 31, is recommended.</p> <p><u>Hibernaculum(a)</u> No impacts to winter hibernacula were identified due to absence of caves, mines, or portals within 0.25-miles of the Project.</p>

TABLE 3
ODNR AND USFWS LISTED SPECIES WITHIN THE PROJECT SURVEY AREA

Common Name (Scientific Name)	State Status	Federal Status	Typical Habitat	Habitat Observed	Avoidance Dates	Agency Comments	Potential Impacts
Tricolored bat (<i>Perimyotis subflavus</i>)	Endangered	Proposed	<u>Summer habitat</u> During spring/summer, this bat species roost in trees behind loose, exfoliating bark, in crevices and cavities, or in leaves. <u>Hibernaculum(a)</u> During winter, this species hibernates in humid mines, caves, and occasionally man-made structures.	<u>Summer habitat</u> Within the Project survey area, the existing land use is composed of two existing station sites, old fields, streams/wetlands, and non-contiguous woodlands. It's unlikely this Project survey area is suitable for bat roosting trees. No – No Mines openings and/or known caves are located within 0.25 miles of Project area and USFWS did not identify known hibernacula within 5-miles of the Project. Field evaluations did not identify any potential hibernaculum(a) within the Project area (2023 Joint Guidance)*.	April 1 – September 30	<u>Summer habitat</u> ODNR and USFWS recommends adherence to Avoidance Dates for Tree Clearing Activities (April 1 – September 30). <u>Hibernaculum(a)</u> The ODNR DOW recommends a desktop habitat assessment to be conducted to identify potential hibernacula within 0.25 miles of the Project area. If habitat assessment finds potential hibernaculum within 0.25 miles, a revised seasonal tree clearing restriction (March 15 to November 15) is recommended (2023 Joint Guidance)*. If absence or no tree cutting or subsurface impacts are proposed, the Project is not likely to impact this species.	<u>Summer habitat</u> Potential summer roosting habitat is not present within the Project area and seasonal tree clearing, between October 1 and March 31, is recommended. <u>Hibernaculum(a)</u> No impacts to winter hibernacula were identified due to absence of caves, mines, or portals within 0.25-miles of the Project.
Mussels							
Pondhorn (<i>Unio merus tetralasmus</i>)	Threatened	None	Perennial Streams	No perennial streams present.	N/A	Due to the location, and there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.	No
Rabbitsfoot (<i>Quadrula cylindrica cylindrica</i>)	Threatened	Threatened	Perennial Streams	No perennial streams present.	N/A	Due to the location, and there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.	No
Rayed bean (<i>Villosa fabalis</i>)	Endangered	Endangered	Perennial Streams	No perennial streams present.	N/A	Due to the location, and there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.	No
Salamander mussel (<i>Simpsonaias ambigua</i>)	Threatened	None	Perennial Streams	No perennial streams present.	N/A	Due to the location, and there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.	No
Snuffbox (<i>Epioblasma triquetra</i>)	Endangered	Endangered	Perennial Streams	No perennial streams present.	N/A	Due to the location, and there is no in-water work proposed in a perennial stream, this Project is not likely to impact this species.	No
Birds							
Northern harrier (<i>Circus hudsonis</i>)	Endangered	None	This species hunts over grasslands and nests can be found in large marshes and grasslands.	Based on field reviews, the Project area consists of existing substations and associated transmission lines and is surrounded by agricultural land and woodlots. Therefore, due to existing development and the absence of contiguous grassland, suitable habitat is absent.	April 15 to July 31	Habitat should be avoided during the bird's nesting period between April 15 through July 31. If habitat will not be impacted, this Project will not likely impact species.	No

Protected Species Agency Summary –

Based on general observations during the ecological survey, it is unlikely that suitable bat roosting trees exist within the Project survey area due to the presence of two existing station sites, old fields, streams/wetlands, and non-contiguous woodlands. If tree clearing is required, the ODNR and USFWS recommend implementations of seasonal tree clearing between October 1 and March 31 to avoid adverse effects to Indiana bat, northern long-eared bat, little brown bat, and tricolored bat. If trees must be cut during the summer months, the ODNR recommends that a mist net survey could be completed for Indiana bat, northern long-eared bat, and the tricolored bat between June 1 and August 15. However, additional summer surveys would not constitute presence/absence within the Project area for the northern long-eared bat. If summer tree clearing is needed, additional coordination will be completed with ODNR and the USFWS.

AECOM completed a desktop review for potential hibernaculum in accordance with the 2023 Ohio ODNR DOW and USFWS Joint Guidance for Bat Surveys and Tree Clearing (2023 Joint Guidance; **Appendix F**) within 0.25-mile of the Project area and no caves, mines, and/or karst features were identified. As per ODNR and USFWS guidance, further coordination regarding potential hibernaculum is only necessary if the habitat assessment find potential habitat within 0.25-mile of the Project area. Therefore, no further coordination was necessary with either the ODNR and/or USFWS regarding the listed bat species. Results of the desktop habitat assessment has been included within **Appendix A**.

No impacts are anticipated to occur to any mussel species, as no in-water work is proposed as part of the Project. Additionally, an absence of potential nesting habitat for the northern harrier was determined based on field/desktop review of the Project survey area. The absence of habitat was identified due to the Project area consisting of existing stations and associated transmission lines, as well as being surrounded by agricultural fields and woodlots, which contribute to severely fragmented old field habitat. Therefore, no further coordination regarding the listed bird species is required for this Project.

4.0 SUMMARY

The ecological survey of the Project survey area identified a total of nine wetlands and one stream. The wetlands within the Project survey area were all assessed as Category 1 wetlands and determined to be isolated. The identified intermittent stream, UNT to Big Walnut Creek has a HHEI classification of 47. AECOM has preliminary determined that the assessed stream within the Project survey area appear to be jurisdictional (i.e., WOTUS).

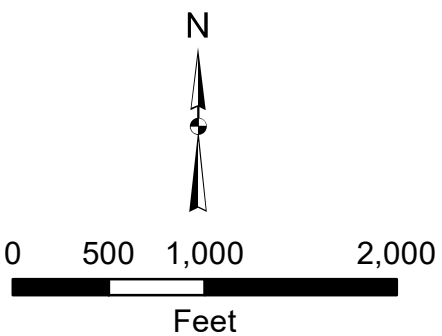
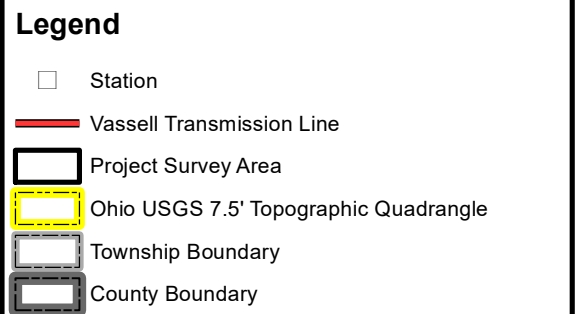
The reported results of the ecological survey conducted by AECOM on this Project are limited to the areas within the Project survey area provided in **Figure 3**. Areas that fall outside of the Project survey area were not evaluated in the field and are not included in the reporting of this survey.

Of ten state and/or federally listed threatened or endangered species within range of the Project survey area, four bat species were identified as displaying potential summer roosting habitat and no hibernacula was identified within 0.25 miles of the Project survey area. Due to presence of potential summer roosting habitat for these bat species, it was recommended by the ODNR to complete seasonal tree clearing activities between October 1 and March 31. If seasonal tree clearing cannot be completed, mist net surveys could be completed between June 1 to August 15.

The field survey results presented herein apply to the existing and reasonably foreseeable site conditions at the time of our assessment. They cannot apply to site changes of which AECOM is unaware and has not had the opportunity to review. Changes in the condition of a property may occur with time due to natural processes or human impacts at the project site or on adjacent properties. Changes in applicable standards may also occur as a result of legislation or the expansion of knowledge over time. Accordingly, the findings of this report may be invalidated, wholly or in part, by changes beyond the control of AECOM.

5.0 REFERENCES

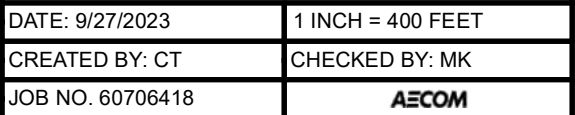
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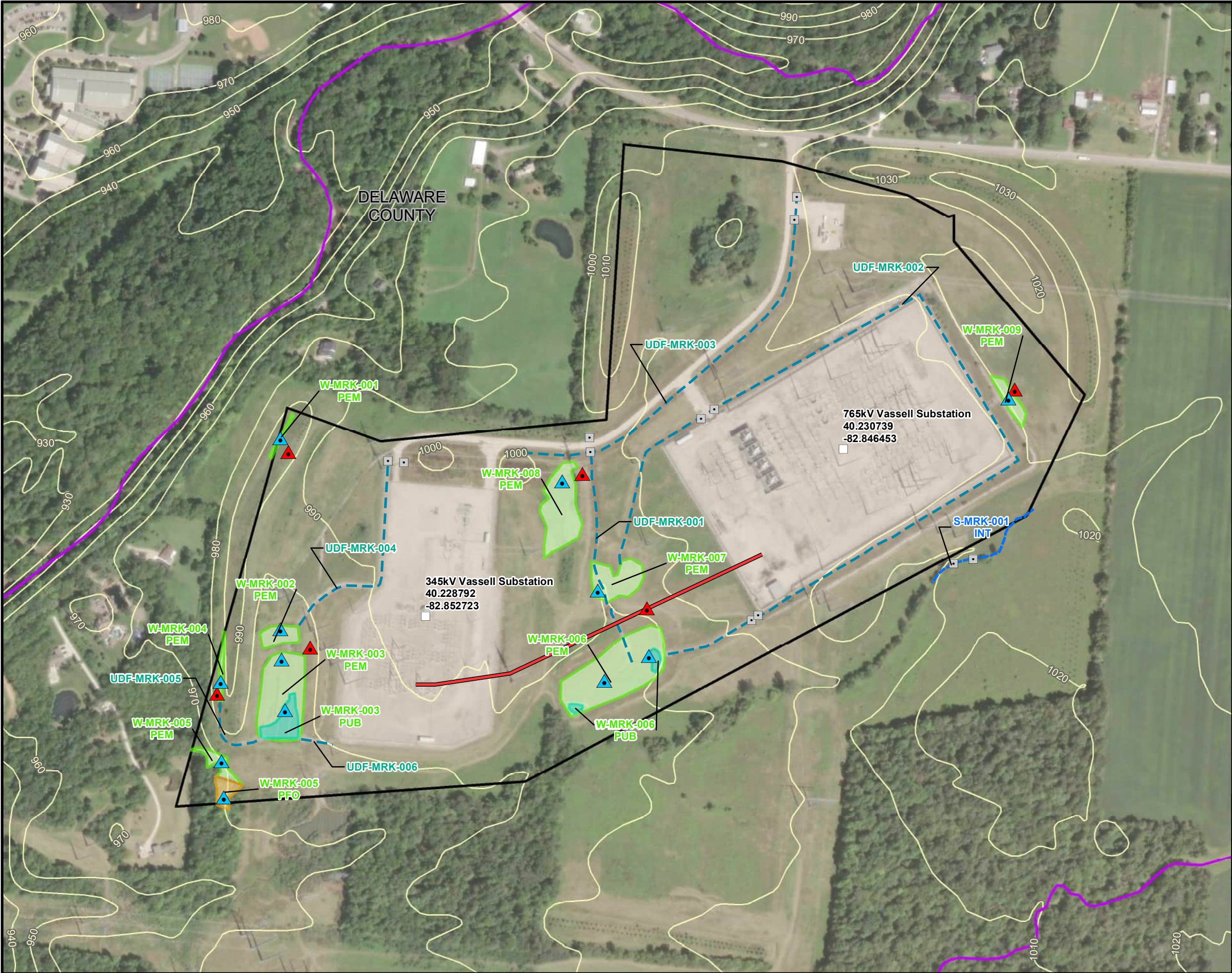


**AMERICAN
ELECTRIC
POWER** *Vassell 765kV and 345kV Transformer
and Site Hardening Projects*

FIGURE 1
PROJECT OVERVIEW

DATE: 9/27/2023	1 INCH = 1,000 FEET
CREATED BY: CT	CHECKED BY: MK
JOB NO. 60706418	AECOM



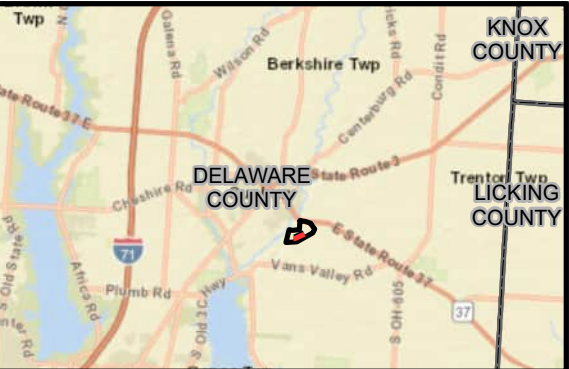
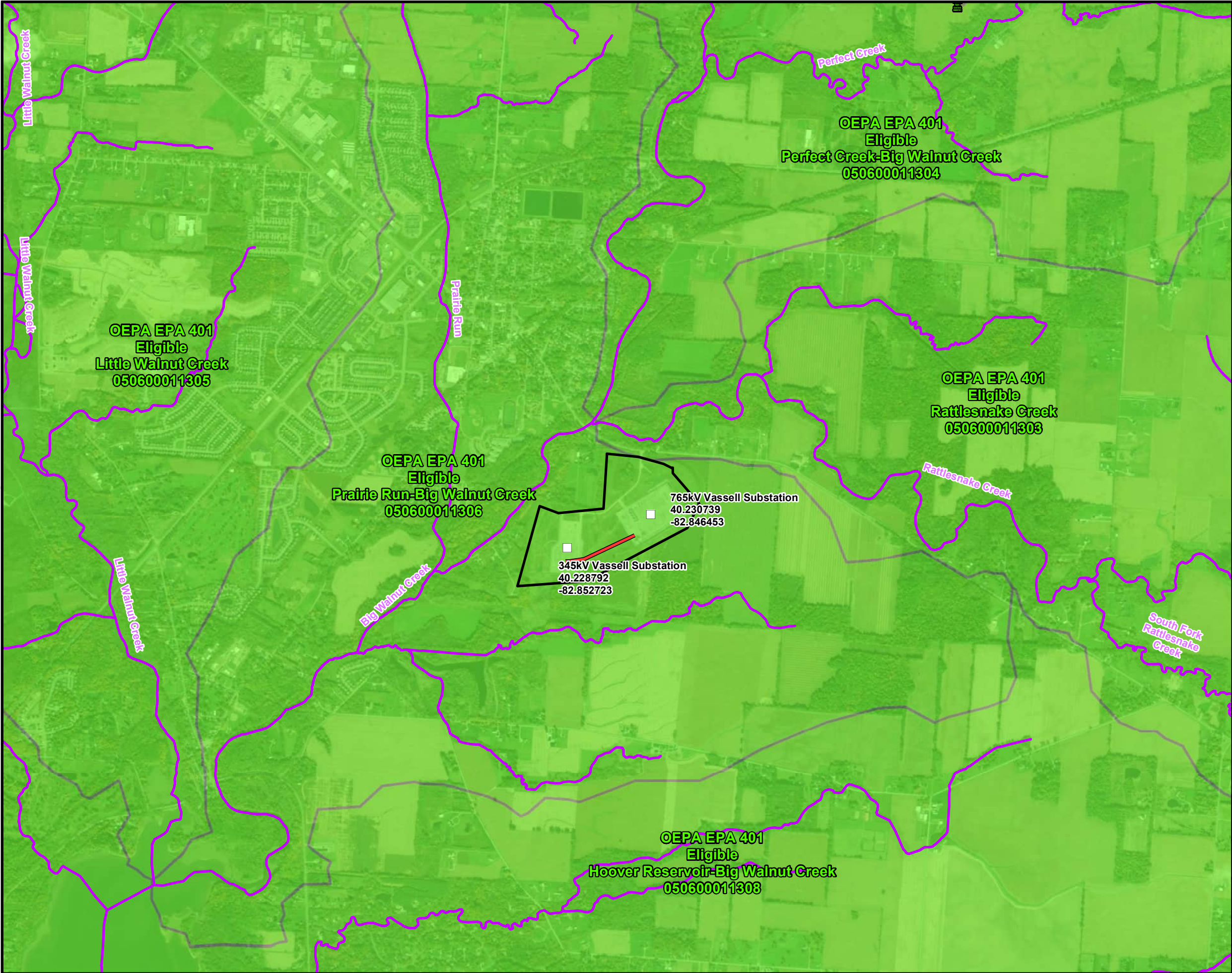


Legend

- Station
- Wetland Data Point
- Upland Data Point
- Culvert
- Vassell Transmission Line
- Upland Drainage Feature
- Delineated Intermittent Stream
- Delineated PEM Wetland
- Delineated PFO Wetland
- Delineated PUB Wetland
- Study Area
- NHD Stream (USGS)
- Contour (10-ft)
- County Boundary

0 200 400 800
Feet

Vassell 765kV and 345kV Transformer and Site Hardening Projects	
FIGURE 3 WETLAND DELINEATION AND STREAM ASSESSMENT MAP	
DATE: 9/27/2023	1 INCH = 400 FEET
CREATED BY: CT	CHECKED BY: MK
JOB NO. 60706418	AECOM



Legend

- Station
- Vassell Transmission Line
- NHD Stream (USGS)
- Study Area

OEPA Eligibility:


- Eligible

Scale:

0 1,000 2,000 4,000 Feet

North Arrow:

N

 Vassell 765kV and 345kV Transformer and Site Hardening Projects	
FIGURE 4 STREAM ELIGIBILITY MAP	
DATE: 9/27/2023	1 INCH = 2,000 FEET
CREATED BY: CT	CHECKED BY: MK
JOB NO. 60706418	AECOM



Legend

- Photo11
- Photo Location
- Station

Vegetative Community Type

- Old Field
- Streams/Wetlands
- Urban
- Woodlands
- Study Area

Scale

0 200 400 800 Feet

North Arrow

N

AMERICAN ELECTRIC POWER Vassell 765kV and 345kV Transformer and Site Hardening Projects	
FIGURE 5 VEGETATIVE COMMUNITIES	
DATE: 9/28/2023	1 INCH = 400 FEET
CREATED BY: CT	CHECKED BY: MK
JOB NO. 60706418	AECOM

APPENDIX A**DESKTOP ASSESSMENT FOR WINTER BAT HABITAT**

USDA, NRCS. 2021b. Web Soil Survey (GIS Shapefile). <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>. Accessed April 2023.

USFWS. 2022. National Wetlands Inventory Geodatabase for Ohio. Available online at <http://www.fws.gov/wetlands/Data/Mapper.html>. Published May 2022. Accessed April 2023.

United States Geological Survey (USGS). 2019. 7.5-Minute Topographic Quadrangle Maps for Sunbury, Ohio. 2019 edition. Accessed April 2023

USGS. 2016. National Hydrography Dataset, Ohio Statewide Geodatabase. Published August 2016. Earth Science Information Center, USGS, Reston, VA.



American Electric Power
8600 Smith's Mill Road
New Albany, OH 43054
ajtoohey@ aep.com

April 13, 2023

Attention: Mr. John Kessler
Ohio Department of Natural Resources
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693

Via email: environmentalreviewrequest@dnr.state.oh.us; NHDRequest@dnr.state.oh.us

Reference: Request for Technical Assistance, Vassell 765kv and 345kv Transformer
and Site Hardening Projects, Delaware County, Ohio

Dear Mr. Kessler:

AEP Ohio Transmission Company, Inc. (AEP), is formally requesting that the Ohio Department of Natural Resources (ODNR) complete a review for the proposed Vassell 765kv and 345kv Transformer and Site Hardening Projects in Delaware County, Ohio. There are three components to this project and the purpose of each is described i below.

The purpose of the Vassell Stations component is to expand the existing 345kV yard and 765kV yard for the installation of major equipment and a DICM Expansion module in the 765kV yard at the existing Vassell Substation. The purpose of the Vassell 765kv – Vassell 345kV Tie Line No. 2 component is to install a new 0.3-mile greenfield 345kV transmission tie line to connect the existing 345kV and 765kV Yards together at the Vassell Station. The final component, Upgrade 345kV Station Fence, is to upgrade the existing fence at the 345kV yard of the existing Vassell Substation due to the expansion of the 345kV substation yard. The Project study area is located on USGS Sunbury, Ohio U.S. Geologic Survey 7.5' topographical quadrangle as displayed on the Project Topographic Overview Map (Figure 1).

AECOM completed a desktop review of publicly available data to identify underground voids which could be potential hibernation sites for overwintering bats (hibernacula) within 0.25-miles of the Project area. The data sources utilized include USGS topographical maps, aerial photography, and ODNR's Division of Mineral Resources and Geological Survey Data for Known Mining Activity and Karst Geology/Sinkholes as shown on Figure 1 and 2. Based on the available desktop resources, there are no underground and historic surface mines or karst features located within 0.25-mile of the Project. Therefore, potential hibernacula is not anticipated to occur within the range of the Project area.

Please provide us with the results of the ODNR's environmental review, including results of the ODNR Natural Heritage Database search, at your earliest convenience. If you have questions or need additional information regarding the Project, please contact me at the phone number or email below. Thank you for your assistance with this request.

Sincerely,

BOUNDLESS ENERGY™

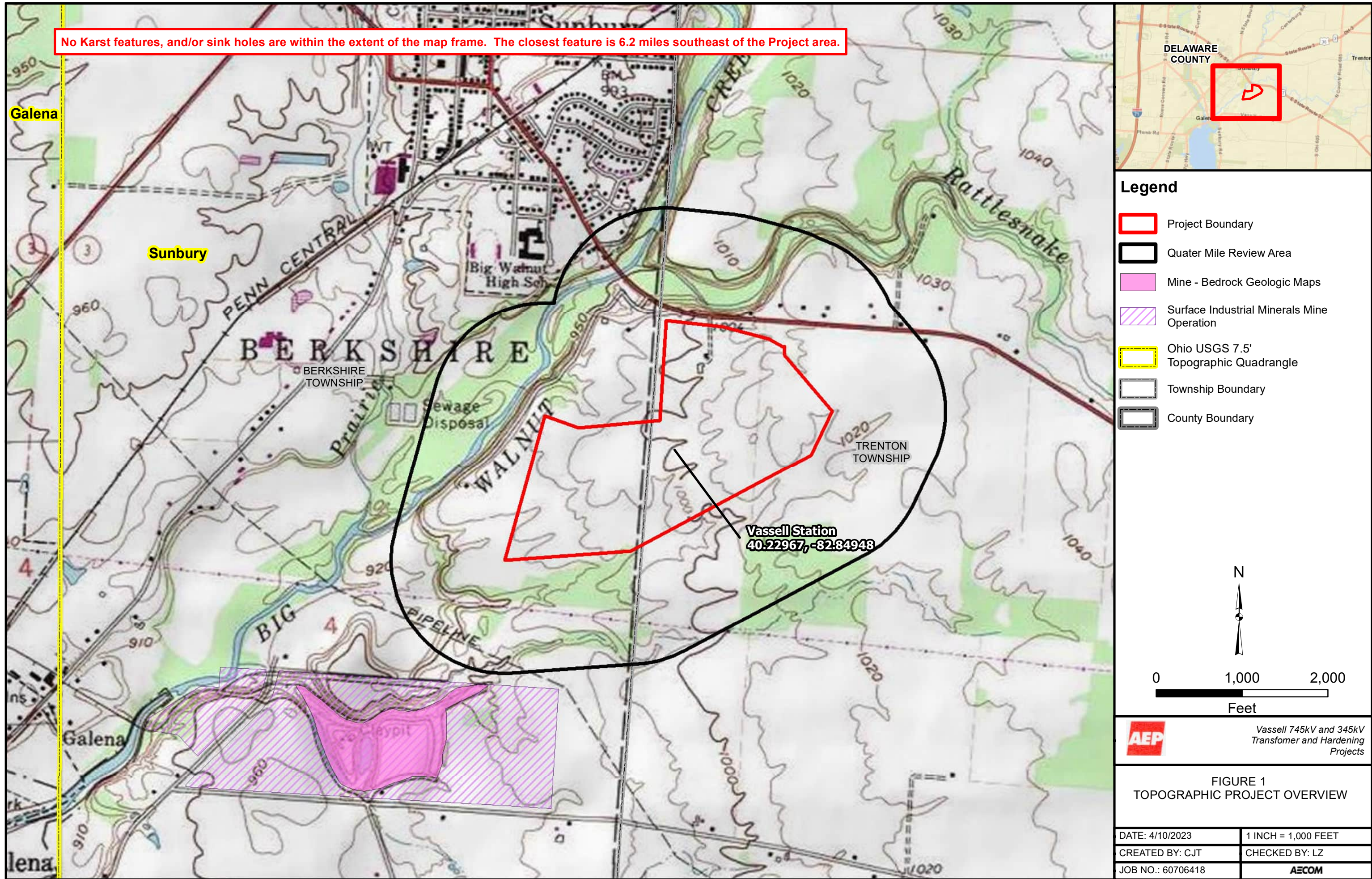


Brian Miller
Environmental Project Manager
Phone: (412-667-9172)
brian.miller1@aecom.com

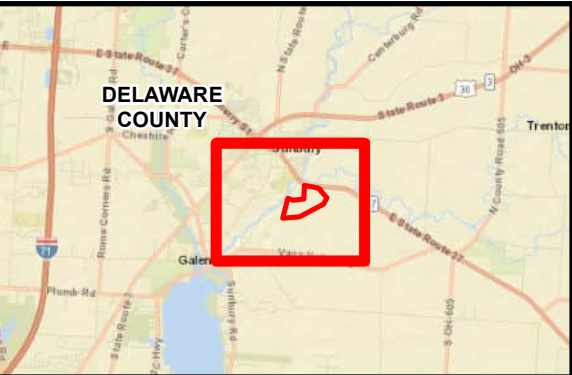
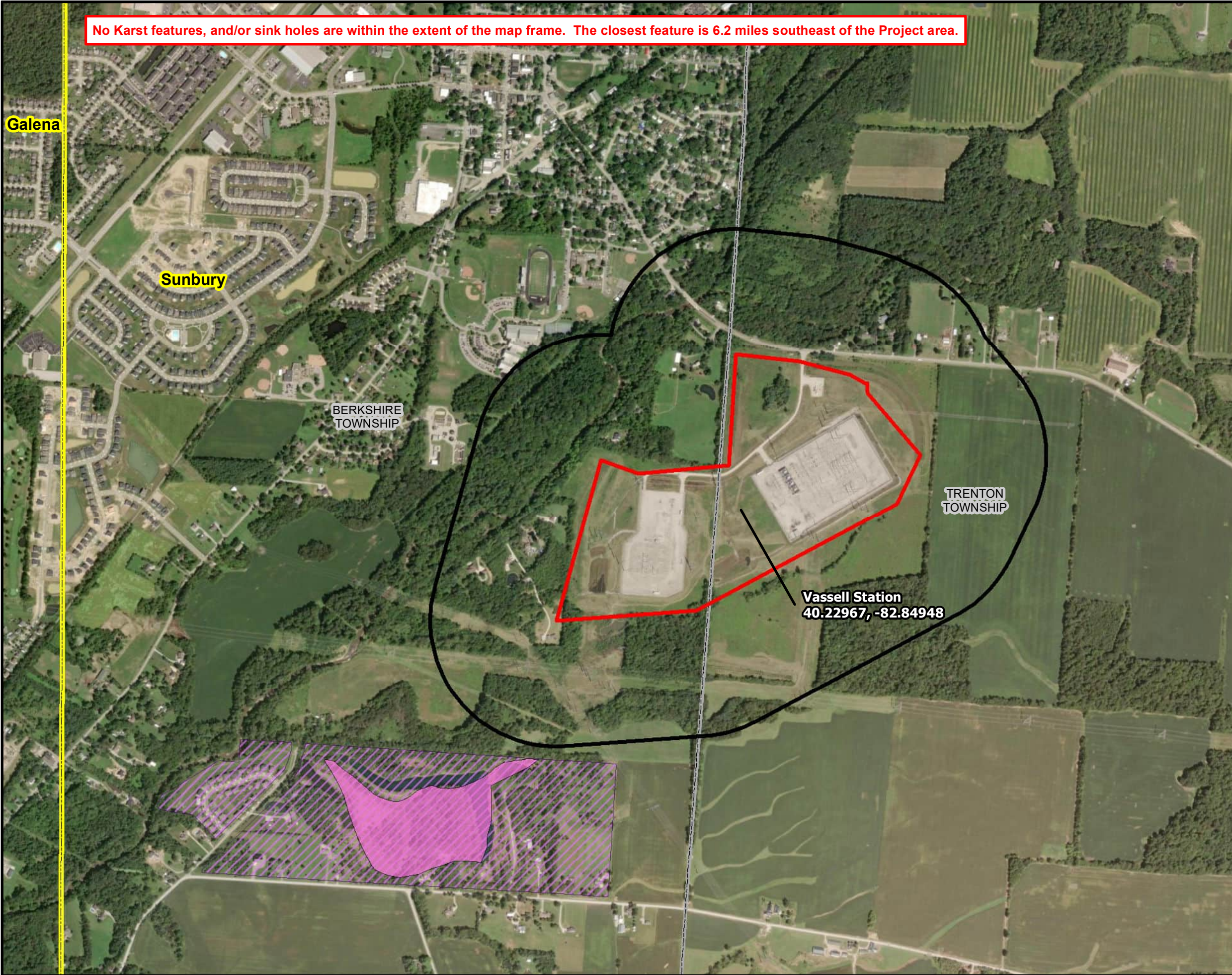
Attachments: Figure 1 – Topographic Project Overview
Figure 2 – Aerial Project Overview
Natural Heritage Data Request Form
Electronic Shapefiles (.shp)

Cc: Amy J. Toohey
Environmental Specialist-Consultant
Phone: (614-565-1480)
ajtoohey@aep.com

BOUNDLESS ENERGY™



Date Saved: 4/10/2023
Document Path: Z:\Cincinnati-USCNC02\DCS\GIS\ArcMap_GeoDB_Projects\ENV\60706418_AEP_Vassell_Station2_MXD\Station2_MXD\Agency\Vassell_Station2_Aerial_Overview.mxd



Legend

- Project Boundary
- Quarter Mile Review Area
- Mine - Bedrock Geologic Maps
- Surface Industrial Minerals Mine Operation
- Ohio USGS 7.5' Topographic Quadrangle
- Township Boundary
- County Boundary

N

0 1,000 2,000
Feet

Vassell 765kV and 345kV Transformer and Site Hardening Projects	
FIGURE 2 AERIAL PROJECT OVERVIEW	
DATE: 4/10/2023	1 INCH = 1,000 FEET
CREATED BY: CJT	CHECKED BY: LZ
JOB NO.: 60706418	AECOM

APPENDIX B**U.S. ARMY CORPS OF ENGINEERS WETLAND DETERMINATION DATA FORMS****OEPA WETLAND ORAM FORMS****DELINEATED FEATURES PHOTOGRAPHS (WETLANDS)**

APPENDIX C**OEPA STREAM DATA FORMS / DELINEATED FEATURES PHOTOGRAPHS (STREAMS)**

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 12-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-001 PEM**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 17W
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave
 Slope: 3.0% / 1.7° Lat.: 40.230845 Long.: -82.854914 Datum: NAD83
 Soil Map Unit Name: Cen1B1: Centerburg silt loam, 2 to 6 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: This PEM wetland is located within a hillside swale that is collecting surface runoff. The wetland extends beyond the current study area and the boundary follows edge of swale.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	0		
	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)				Prevalence Index worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>30</u> x 1 = <u>30</u>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>75</u> x 2 = <u>150</u>	
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>25</u> x 3 = <u>75</u>	
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>0</u> x 4 = <u>0</u>	
	0	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
Herb Stratum (Plot size: 5' radius)				Column Totals: <u>130</u> (A) <u>255</u> (B)	
1. <u>Phalaris arundinacea</u>	75	<input checked="" type="checkbox"/> 57.7%	FACW	Prevalence Index = B/A = <u>1.962</u>	
2. <u>Scirpus atrovirens</u>	25	<input type="checkbox"/> 19.2%	OBL		
3. <u>Poa pratensis</u>	25	<input type="checkbox"/> 19.2%	FAC		
4. <u>Juncus effusus</u>	5	<input type="checkbox"/> 3.8%	OBL		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
	130	= Total Cover			
Woody Vine Stratum (Plot size: 30' radius)				Hydrophytic Vegetation Indicators:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%	_____		<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 ¹	
				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-001 PEM**

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils ³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | |

Field Observations:

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

Water Table Present? Yes ☒ No ☐ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

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

NA

Remarks:

The source of hydrology is surface runoff.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 12-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-001 UPL**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 17W
 Landform (hillslope, terrace, etc.): Ridgetop Local relief (concave, convex, none): convex
 Slope: 1.0% / 0.6 ° Lat.: 40.230682 Long.: -82.854797 Datum: NAD83
 Soil Map Unit Name: Cen1B1: Centerburg silt loam, 2 to 6 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland data point for W-MRK-001. Upland data was collected within a fallow/old field.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			
Herb Stratum (Plot size: 5' radius)			
1. <u>Dactylis glomerata</u>	60	<input checked="" type="checkbox"/> 57.1%	FACU
2. <u>Poa pratensis</u>	25	<input checked="" type="checkbox"/> 23.8%	FAC
3. <u>Daucus carota</u>	10	<input type="checkbox"/> 9.5%	UPL
4. <u>Trifolium pratense</u>	10	<input type="checkbox"/> 9.5%	FACU
5. _____	0	<input type="checkbox"/> 0.0%	_____
6. _____	0	<input type="checkbox"/> 0.0%	_____
7. _____	0	<input type="checkbox"/> 0.0%	_____
8. _____	0	<input type="checkbox"/> 0.0%	_____
9. _____	0	<input type="checkbox"/> 0.0%	_____
10. _____	0	<input type="checkbox"/> 0.0%	_____
105 = Total Cover			
Woody Vine Stratum (Plot size: 30' radius)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>25</u>	x 3 = <u>75</u>
FACU species <u>70</u>	x 4 = <u>280</u>
UPL species <u>10</u>	x 5 = <u>50</u>
Column Totals: <u>105</u> (A)	<u>405</u> (B)

 Prevalence Index = B/A = 3.857

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is > 50%
☐ 3 - Prevalence Index is ≤ 3.0 ¹
☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation ¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-001 UPL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-16	10YR	3/3	100				Silt Loam	25% mixed rock	

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

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Iron Manganese Masses (F12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		

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

Restrictive Layer (if observed):	Hydric Soil Present?
Type: _____ Depth (inches): _____	Yes <input type="radio"/> No <input checked="" type="radio"/>

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	

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

NA

Remarks:

No source of hydrology was observed.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 12-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-002 PEM**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 17W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave
 Slope: 1.0% / 0.6 ° Lat.: 40.228557 Long.: -82.854923 Datum: NAD83
 Soil Map Unit Name: BeA: Bennington silt loam, 0 to 2 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: This PEM wetland is a man-made sediment trap located on the existing sub station property. Rock-lined ditches direct surface runoff to the depression which also drains to W-MRK-003. Wetland boundary follows edge of depression.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	0		
	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)				Prevalence Index worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>60</u> x 1 = <u>60</u>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>25</u> x 2 = <u>50</u>	
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>40</u> x 3 = <u>120</u>	
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>0</u> x 4 = <u>0</u>	
	0	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
Herb Stratum (Plot size: 5' radius)				Column Totals: <u>125</u> (A) <u>230</u> (B)	
1. <u>Typha angustifolia</u>	50	<input checked="" type="checkbox"/> 40.0%	OBL	Prevalence Index = B/A = <u>1.840</u>	
2. <u>Panicum virgatum</u>	40	<input checked="" type="checkbox"/> 32.0%	FAC		
3. <u>Carex vulpinoidea</u>	25	<input checked="" type="checkbox"/> 20.0%	FACW		
4. <u>Juncus effusus</u>	10	<input type="checkbox"/> 8.0%	OBL		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
	125	= Total Cover			
Woody Vine Stratum (Plot size: 30' radius)				Hydrophytic Vegetation Indicators:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%	_____		<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 ¹	
				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-002 PEM**

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils ³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒

Depth (inches):

Water Table Present? Yes ☒ No ☐

Depth (inches): 0

Saturation Present?
(includes capillary fringe) Yes ☒ No ☐

Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

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

NA

Remarks:

The source of hydrology is surface runoff.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 12-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-002-003 UPL**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 17W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): convex
 Slope: 1.0% / 0.6 ° Lat.: 40.228431 Long.: -82.854454 Datum: NAD83
 Soil Map Unit Name: BeA: Bennington silt loam, 0 to 2 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland data point for W-MRK-002 and W-MRK-003. Upland data was collected within a fallow/old field.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Number of Dominant Species That are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>33.3%</u> (A/B)	
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	0		
	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)				Prevalence Index worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>0</u> x 2 = <u>0</u>	
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>25</u> x 3 = <u>75</u>	
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>100</u> x 4 = <u>400</u>	
	0	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
Herb Stratum (Plot size: 5' radius)				Column Totals: <u>125</u> (A) <u>475</u> (B)	
1. <u>Dactylis glomerata</u>	50	<input checked="" type="checkbox"/> 40.0%	FACU	Prevalence Index = B/A = <u>3.800</u>	
2. <u>Festuca arundinacea</u>	40	<input checked="" type="checkbox"/> 32.0%	FACU		
3. <u>Poa pratensis</u>	25	<input checked="" type="checkbox"/> 20.0%	FAC		
4. <u>Andropogon virginicus</u>	10	<input type="checkbox"/> 8.0%	FACU		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
	125	= Total Cover			
Woody Vine Stratum (Plot size: 30' radius)				Hydrophytic Vegetation Indicators:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%	_____		<input type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 ¹	
				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-002-003 UPL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-16	10YR	3/3	100				Silt Loam		

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

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Iron Manganese Masses (F12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		

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

Restrictive Layer (if observed):	Hydric Soil Present?
Type: _____ Depth (inches): _____	Yes <input type="radio"/> No <input checked="" type="radio"/>

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> FAC-Neutral Test (D5)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	
Saturation Present? (includes capillary fringe) Yes <input type="radio"/> No <input checked="" type="radio"/>	Depth (inches): _____	

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

NA

Remarks:

No source of hydrology was observed.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 12-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-003 PEM**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 17W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave
 Slope: 1.0% / 0.6 ° Lat.: 40.228288 Long.: -82.854882 Datum: NAD83
 Soil Map Unit Name: BeA: Bennington silt loam, 0 to 2 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: This PEM section of a PEM/PUB wetland complex is a man-made sediment trap located on the existing sub station property. Rock-lined ditches direct surface runoff to the depression. Wetland boundary follows edge of depression.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Number of Dominant Species That are OBL, FACW, or FAC: <u>3</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	0		
	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)				Prevalence Index worksheet:	
1. Salix nigra	5	<input checked="" type="checkbox"/> 100.0%	OBL		Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>85</u> x 1 = <u>85</u>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>10</u> x 2 = <u>20</u>	
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>50</u> x 3 = <u>150</u>	
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>0</u> x 4 = <u>0</u>	
	5	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
Herb Stratum (Plot size: 5' radius)				Column Totals: <u>145</u> (A) <u>255</u> (B)	
1. Panicum virgatum	40	<input checked="" type="checkbox"/> 28.6%	FAC	Prevalence Index = B/A = <u>1.759</u>	
2. Scirpus cyperinus	35	<input checked="" type="checkbox"/> 25.0%	OBL		
3. Typha angustifolia	25	<input type="checkbox"/> 17.9%	OBL		
4. Juncus effusus	20	<input type="checkbox"/> 14.3%	OBL		
5. Carex vulpinoidea	10	<input type="checkbox"/> 7.1%	FACW		
6. Apocynum cannabinum	10	<input type="checkbox"/> 7.1%	FAC		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
	140	= Total Cover			
Woody Vine Stratum (Plot size: 30' radius)				Hydrophytic Vegetation Indicators:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%	_____		<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 ¹	
				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-003 PEM**

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils ³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches):

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- | | | |
|--|---|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | |

Field Observations:

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

Water Table Present? Yes ☒ No ☐ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

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

NA

Remarks:

The source of hydrology is surface runoff.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 12-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-003 PUB**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 17W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave
 Slope: 1.0% / 0.6 ° Lat.: 40.227708 Long.: -82.854827 Datum: NAD83
 Soil Map Unit Name: BeB: Bennington silt loam, 2 to 6 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: This PUB section of a PEM/PUB wetland complex is a man-made sediment trap located on the existing sub station property. Rock-lined ditches direct surface runoff to the depression. Wetland boundary follows edge of open water.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			
Herb Stratum (Plot size: 5' radius)			
1. <u>Panicum virgatum</u>	25	<input checked="" type="checkbox"/> 100.0%	FAC
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
6. _____	0	<input type="checkbox"/> 0.0%	_____
7. _____	0	<input type="checkbox"/> 0.0%	_____
8. _____	0	<input type="checkbox"/> 0.0%	_____
9. _____	0	<input type="checkbox"/> 0.0%	_____
10. _____	0	<input type="checkbox"/> 0.0%	_____
25 = Total Cover			
Woody Vine Stratum (Plot size: 30' radius)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>25</u>	x 3 = <u>75</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>25</u> (A)	<u>75</u> (B)

 Prevalence Index = B/A = 3.000

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is > 50%
☒ 3 - Prevalence Index is ≤ 3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)
 Hydrophytic vegetation is limited to edge of open water.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-003 PUB**

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils ³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|---|---|
| <input checked="" type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input checked="" type="checkbox"/> Aquatic Fauna (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) |
| <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☒ No ☐

Water Table Present? Yes ☒ No ☐

Saturation Present?
(includes capillary fringe) Yes ☒ No ☐

Depth (inches): 36

Depth (inches): 0

Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

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

NA

Remarks:

The source of hydrology is surface runoff.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 12-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-004 PEM**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 17W
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): concave
 Slope: 3.0% / 1.7° Lat.: 40.228031 Long.: -82.855801 Datum: NAD83
 Soil Map Unit Name: BeB: Bennington silt loam, 2 to 6 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: This PEM wetland is located within a hillside swale that is collecting surface runoff. The wetland extends beyond the current study area and the boundary follows edge of swale.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	0
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			
Herb Stratum (Plot size: 5' radius)			
1. <u>Scirpus atrovirens</u>	30	<input checked="" type="checkbox"/> 26.1%	OBL
2. <u>Typha angustifolia</u>	25	<input checked="" type="checkbox"/> 21.7%	OBL
3. <u>Juncus effusus</u>	25	<input checked="" type="checkbox"/> 21.7%	OBL
4. <u>Juncus tenuis</u>	25	<input checked="" type="checkbox"/> 21.7%	FAC
5. <u>Poa pratensis</u>	10	<input type="checkbox"/> 8.7%	FAC
6. _____	0	<input type="checkbox"/> 0.0%	_____
7. _____	0	<input type="checkbox"/> 0.0%	_____
8. _____	0	<input type="checkbox"/> 0.0%	_____
9. _____	0	<input type="checkbox"/> 0.0%	_____
10. _____	0	<input type="checkbox"/> 0.0%	_____
115 = Total Cover			
Woody Vine Stratum (Plot size: 30' radius)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
 Total Number of Dominant Species Across All Strata: 4 (B)
 Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>80</u>	x 1 = <u>80</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>35</u>	x 3 = <u>105</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>115</u> (A)	<u>185</u> (B)

 Prevalence Index = B/A = 1.609

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is > 50%
☒ 3 - Prevalence Index is ≤ 3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: W-MRK-004 PEM

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils ³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | |

Field Observations:

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

Water Table Present? Yes ☒ No ☐ Depth (inches): 6

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 4

Wetland Hydrology Present? Yes ☒ No ☐

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

NA

Remarks:

The source of hydrology is surface runoff.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 12-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-004-005 UPL**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 17W
 Landform (hillslope, terrace, etc.): Hillside Local relief (concave, convex, none): convex
 Slope: 3.0% / 1.7° Lat.: 40.227894 Long.: -82.85585 Datum: NAD83
 Soil Map Unit Name: BeB: Bennington silt loam, 2 to 6 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland data point for W-MRK-004 and W-MRK-005. Upland data was collected within a fallow/old field.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			
Herb Stratum (Plot size: 5' radius)			
1. <u>Dactylis glomerata</u>	80	<input checked="" type="checkbox"/> 61.5%	FACU
2. <u>Daucus carota</u>	20	<input type="checkbox"/> 15.4%	UPL
3. <u>Trifolium pratense</u>	20	<input type="checkbox"/> 15.4%	FACU
4. <u>Solidago canadensis</u>	10	<input type="checkbox"/> 7.7%	FACU
5. _____	0	<input type="checkbox"/> 0.0%	_____
6. _____	0	<input type="checkbox"/> 0.0%	_____
7. _____	0	<input type="checkbox"/> 0.0%	_____
8. _____	0	<input type="checkbox"/> 0.0%	_____
9. _____	0	<input type="checkbox"/> 0.0%	_____
10. _____	0	<input type="checkbox"/> 0.0%	_____
130 = Total Cover			
Woody Vine Stratum (Plot size: 30' radius)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>110</u>	x 4 = <u>440</u>
UPL species <u>20</u>	x 5 = <u>100</u>
Column Totals: <u>130</u> (A)	<u>540</u> (B)

 Prevalence Index = B/A = 4.154

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is > 50%
☐ 3 - Prevalence Index is ≤ 3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-004-005 UPL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-8	10YR	3/3	100				Silt Loam		
8-16	10YR	3/4	100				Silty Clay Loam		

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

Hydric Soil Indicators: <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Muck Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)	<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)	Indicators for Problematic Hydric Soils ³: <input type="checkbox"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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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 <input type="radio"/> No <input checked="" type="radio"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <div style="display: flex; justify-content: space-between;"> <div style="width: 60%;"> Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) </div> <div style="width: 40%;"> <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks) </div> </div>			
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WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 12-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-005 PEM**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 17W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave
 Slope: 1.0% / 0.6 ° Lat.: 40.227116 Long.: -82.855778 Datum: NAD83
 Soil Map Unit Name: PwA: Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: This PEM section of a PEM/PFO wetland complex is located in a depression collecting surface runoff. The wetland extends into a forested area that drains outside of the current study area. Wetland boundary follows edge of depression.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Number of Dominant Species That are OBL, FACW, or FAC:	<u>1</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata:	<u>1</u> (B)
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC:	<u>100.0%</u> (A/B)
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	0		
	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	Total % Cover of:	Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>110</u>	x 1 = <u>110</u>
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>25</u>	x 2 = <u>50</u>
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>0</u>	x 3 = <u>0</u>
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>0</u>	x 4 = <u>0</u>
	0	= Total Cover		UPL species <u>0</u>	x 5 = <u>0</u>
Herb Stratum (Plot size: <u>5'</u> radius)				Column Totals:	<u>135</u> (A) <u>160</u> (B)
1. <u>Typha angustifolia</u>	75	<input checked="" type="checkbox"/> 55.6%	OBL	Prevalence Index = B/A = <u>1.185</u>	
2. <u>Scirpus atrovirens</u>	25	<input type="checkbox"/> 18.5%	OBL		
3. <u>Phalaris arundinacea</u>	25	<input type="checkbox"/> 18.5%	FACW		
4. <u>Juncus effusus</u>	10	<input type="checkbox"/> 7.4%	OBL		
5. _____	0	<input type="checkbox"/> 0.0%	_____		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
	135	= Total Cover			
Woody Vine Stratum (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:	
1. _____	0	<input type="checkbox"/> 0.0%	_____	<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
2. _____	0	<input type="checkbox"/> 0.0%	_____	<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%	
	0	= Total Cover		<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 ¹	
				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: W-MRK-005 PEM

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input checked="" type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils ³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | |

Field Observations:

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

Water Table Present? Yes ☒ No ☐ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

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

NA

Remarks:

The source of hydrology is surface runoff.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 12-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-005 PFO**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 17W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave
 Slope: 1.0% / 0.6 ° Lat.: 40.2267 Long.: -82.855743 Datum: NAD83
 Soil Map Unit Name: BeA: Bennington silt loam, 0 to 2 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: This PFO section of a PEM/PFO wetland complex is located in a depression collecting surface runoff. The wetland extends into a forested area that drains outside of the current study area. Wetland boundary follows edge of depression.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: <u>30'</u> radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. <u>Quercus palustris</u>	30	<input checked="" type="checkbox"/> 54.5%	FACW	Number of Dominant Species That are OBL, FACW, or FAC:	<u>2</u> (A)
2. <u>Acer negundo</u>	25	<input checked="" type="checkbox"/> 45.5%	FAC	Total Number of Dominant Species Across All Strata:	<u>2</u> (B)
3. <u> </u>	0	<input type="checkbox"/> 0.0%		Percent of dominant Species That Are OBL, FACW, or FAC:	<u>100.0%</u> (A/B)
4. <u> </u>	0	<input type="checkbox"/> 0.0%			
5. <u> </u>	0	<input type="checkbox"/> 0.0%	0		
	55	= Total Cover			
Sapling/Shrub Stratum (Plot size: <u>15'</u> radius)				Prevalence Index worksheet:	
1. <u> </u>	0	<input type="checkbox"/> 0.0%		Total % Cover of:	Multiply by:
2. <u> </u>	0	<input type="checkbox"/> 0.0%		OBL species <u>0</u>	x 1 = <u>0</u>
3. <u> </u>	0	<input type="checkbox"/> 0.0%		FACW species <u>30</u>	x 2 = <u>60</u>
4. <u> </u>	0	<input type="checkbox"/> 0.0%		FAC species <u>25</u>	x 3 = <u>75</u>
5. <u> </u>	0	<input type="checkbox"/> 0.0%		FACU species <u>0</u>	x 4 = <u>0</u>
	0	= Total Cover		UPL species <u>0</u>	x 5 = <u>0</u>
Herb Stratum (Plot size: <u>5'</u> radius)				Column Totals:	<u>55</u> (A) <u>135</u> (B)
1. <u> </u>	0	<input type="checkbox"/> 0.0%		Prevalence Index = B/A = <u>2.455</u>	
2. <u> </u>	0	<input type="checkbox"/> 0.0%			
3. <u> </u>	0	<input type="checkbox"/> 0.0%			
4. <u> </u>	0	<input type="checkbox"/> 0.0%			
5. <u> </u>	0	<input type="checkbox"/> 0.0%			
6. <u> </u>	0	<input type="checkbox"/> 0.0%			
7. <u> </u>	0	<input type="checkbox"/> 0.0%			
8. <u> </u>	0	<input type="checkbox"/> 0.0%			
9. <u> </u>	0	<input type="checkbox"/> 0.0%			
10. <u> </u>	0	<input type="checkbox"/> 0.0%			
	0	= Total Cover			
Woody Vine Stratum (Plot size: <u>30'</u> radius)				Hydrophytic Vegetation Indicators:	
1. <u> </u>	0	<input type="checkbox"/> 0.0%		<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation	
2. <u> </u>	0	<input type="checkbox"/> 0.0%		<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%	
	0	= Total Cover		<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 ¹	
				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	

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

No understory within the PFO section of the wetland.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-005 PFO**

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils ³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|---|---|
| <input type="checkbox"/> Surface Water (A1) | <input checked="" type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) |
| <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒

Water Table Present? Yes ☒ No ☐

Saturation Present?
(includes capillary fringe) Yes ☒ No ☐

Depth (inches):

Depth (inches): 0

Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

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

NA

Remarks:

The source of hydrology is surface runoff.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 12-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-006 PEM**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 16W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave
 Slope: 1.0% / 0.6 ° Lat.: 40.22806 Long.: -82.850033 Datum: NAD83
 Soil Map Unit Name: PwA: Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: This PEM section of a PEM/PUB wetland is a man-made sediment trap located on the existing sub station property. Rock-lined ditches direct surface runoff to the depression which also drains from W-MRK-007. Wetland boundary follows edge of depression.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			
Herb Stratum (Plot size: 5' radius)			
1. <u>Panicum virgatum</u>	75	<input checked="" type="checkbox"/> 57.7%	FAC
2. <u>Typha angustifolia</u>	25	<input type="checkbox"/> 19.2%	OBL
3. <u>Scirpus cyperinus</u>	20	<input type="checkbox"/> 15.4%	OBL
4. <u>Juncus effusus</u>	10	<input type="checkbox"/> 7.7%	OBL
5. _____	0	<input type="checkbox"/> 0.0%	_____
6. _____	0	<input type="checkbox"/> 0.0%	_____
7. _____	0	<input type="checkbox"/> 0.0%	_____
8. _____	0	<input type="checkbox"/> 0.0%	_____
9. _____	0	<input type="checkbox"/> 0.0%	_____
10. _____	0	<input type="checkbox"/> 0.0%	_____
130 = Total Cover			
Woody Vine Stratum (Plot size: 30' radius)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That are OBL, FACW, or FAC: 1 (A)
 Total Number of Dominant Species Across All Strata: 1 (B)
 Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>55</u>	x 1 = <u>55</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>75</u>	x 3 = <u>225</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>130</u> (A)	<u>280</u> (B)
Prevalence Index = B/A = <u>2.154</u>	

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☒ 2 - Dominance Test is > 50%
☒ 3 - Prevalence Index is ≤ 3.0 ¹
☐ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation ¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: W-MRK-006 PEM

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils ³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input checked="" type="checkbox"/> Aquatic Fauna (B13) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒

Depth (inches):

Water Table Present? Yes ☒ No ☐

Depth (inches): 6

Saturation Present?
(includes capillary fringe) Yes ☒ No ☐

Depth (inches): 4

Wetland Hydrology Present? Yes ☒ No ☐

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

NA

Remarks:

The source of hydrology is surface runoff.

SOIL

Sampling Point: **W-MRK-006 PUB**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		

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

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Iron Manganese Masses (F12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		

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

Restrictive Layer (if observed):	Hydric Soil Present?
Type: _____ Depth (inches): _____	Yes <input checked="" type="radio"/> No <input type="radio"/>

Remarks:
Unable to dig a soil pit due to water depth and rock lining the edge of open water around the pond. Hydric soils are assumed due to inundation.

HYDROLOGY

Wetland Hydrology Indicators:			
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input checked="" type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input checked="" type="checkbox"/> High Water Table (A2)	<input checked="" type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Drainage Patterns (B10)	
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)		
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)		

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Yes <input checked="" type="radio"/> No <input type="radio"/>
Water Table Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Saturation Present? (includes capillary fringe)	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Depth (inches): 24		
Depth (inches): 0		
Depth (inches): 0		

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

Remarks:
The source of hydrology is surface runoff.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 12-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-006-007 UPL**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 16W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): convex
 Slope: 1.0% / 0.6 ° Lat.: 40.228899 Long.: -82.849398 Datum: NAD83
 Soil Map Unit Name: Cen1C2: Centerburg silt loam, 6 to 12 percent slopes, eroded NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland data point for W-MRK-006 and W-MRK-007. Upland data was collected within a fallow/old field.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	0
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			
Herb Stratum (Plot size: 5' radius)			
1. <u>Dactylis glomerata</u>	50	<input checked="" type="checkbox"/> 32.3%	FACU
2. <u>Festuca arundinacea</u>	50	<input checked="" type="checkbox"/> 32.3%	FACU
3. <u>Trifolium pratense</u>	25	<input type="checkbox"/> 16.1%	FACU
4. <u>Andropogon virginicus</u>	10	<input type="checkbox"/> 6.5%	FACU
5. <u>Daucus carota</u>	10	<input type="checkbox"/> 6.5%	UPL
6. <u>Solidago canadensis</u>	10	<input type="checkbox"/> 6.5%	FACU
7. _____	0	<input type="checkbox"/> 0.0%	_____
8. _____	0	<input type="checkbox"/> 0.0%	_____
9. _____	0	<input type="checkbox"/> 0.0%	_____
10. _____	0	<input type="checkbox"/> 0.0%	_____
155 = Total Cover			
Woody Vine Stratum (Plot size: 30' radius)			
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)
 Total Number of Dominant Species Across All Strata: 2 (B)
 Percent of dominant Species That Are OBL, FACW, or FAC: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>145</u>	x 4 = <u>580</u>
UPL species <u>10</u>	x 5 = <u>50</u>
Column Totals: <u>155</u> (A)	<u>630</u> (B)

 Prevalence Index = B/A = 4.065

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is > 50%
☐ 3 - Prevalence Index is ≤ 3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-006-007 UPL**

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)									
Depth (inches)	Matrix		Redox Features				Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²			
0-10	10YR	3/3	100				Silt Loam		
10-16	10YR	3/4	100				Silty Clay Loam		

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

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Coast Prairie Redox (A16)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Iron Manganese Masses (F12)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10)	<input type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Sandy Muck Mineral (S1)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		

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

Restrictive Layer (if observed):	Hydric Soil Present?
Type: _____	Yes <input type="radio"/> No <input checked="" type="radio"/>
Depth (inches): _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:	
<u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Dry Season Water Table (C2)	
<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations:		Wetland Hydrology Present?
Surface Water Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Yes <input type="radio"/> No <input checked="" type="radio"/>
Water Table Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Saturation Present? (includes capillary fringe)	Yes <input type="radio"/> No <input checked="" type="radio"/>	

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

NA

Remarks:

No source of hydrology was observed.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 13-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-007 PEM**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 16W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave
 Slope: 1.0% / 0.6 ° Lat.: 40.229097 Long.: -82.850136 Datum: NAD83
 Soil Map Unit Name: PwA: Pewamo silty clay loam, 0 to 1 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: This PEM wetland is a man-made sediment trap located on the existing sub station property. Rock-lined ditches direct surface runoff to the depression which also drains to W-MRK-006. Wetland boundary follows edge of depression.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	0		
	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)				Prevalence Index worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>115</u> x 1 = <u>115</u>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>0</u> x 2 = <u>0</u>	
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>20</u> x 3 = <u>60</u>	
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>5</u> x 4 = <u>20</u>	
	0	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
Herb Stratum (Plot size: 5' radius)				Column Totals: <u>140</u> (A) <u>195</u> (B)	
1. Juncus effusus	60	<input checked="" type="checkbox"/> 42.9%	OBL	Prevalence Index = B/A = <u>1.393</u>	
2. Typha angustifolia	50	<input checked="" type="checkbox"/> 35.7%	OBL		
3. Panicum virgatum	20	<input type="checkbox"/> 14.3%	FAC		
4. Scirpus cyperinus	5	<input type="checkbox"/> 3.6%	OBL		
5. Cichorium intybus	5	<input type="checkbox"/> 3.6%	FACU		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
	140	= Total Cover			
Woody Vine Stratum (Plot size: 30' radius)				Hydrophytic Vegetation Indicators:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%	_____		<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 ¹	
				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-007 PEM**

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input checked="" type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils ³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☒ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☒ No ☐

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

NA

Remarks:

The source of hydrology is surface runoff.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 13-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-008 PEM**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 17W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave
 Slope: 1.0% / 0.6 ° Lat.: 40.23036 Long.: -82.850678 Datum: NAD83
 Soil Map Unit Name: BeA: Bennington silt loam, 0 to 2 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="radio"/> No <input type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Remarks: This PEM wetland is located in a depression on the existing sub station property. The depression is collecting surface runoff from the surrounding area. The wetland boundary follows edge of depression.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	0
0 = Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
3. _____	0	<input type="checkbox"/> 0.0%	_____
4. _____	0	<input type="checkbox"/> 0.0%	_____
5. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			
Herb Stratum (Plot size: 5' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. <u>Phragmites australis</u>	30	<input checked="" type="checkbox"/> 21.4%	FACW
2. <u>Phalaris arundinacea</u>	30	<input checked="" type="checkbox"/> 21.4%	FACW
3. <u>Juncus effusus</u>	25	<input checked="" type="checkbox"/> 17.9%	OBL
4. <u>Eleocharis palustris</u>	25	<input checked="" type="checkbox"/> 17.9%	OBL
5. <u>Typha angustifolia</u>	10	<input type="checkbox"/> 7.1%	OBL
6. <u>Scirpus cyperinus</u>	10	<input type="checkbox"/> 7.1%	OBL
7. <u>Setaria pumila</u>	10	<input type="checkbox"/> 7.1%	FAC
8. _____	0	<input type="checkbox"/> 0.0%	_____
9. _____	0	<input type="checkbox"/> 0.0%	_____
10. _____	0	<input type="checkbox"/> 0.0%	_____
140 = Total Cover			
Woody Vine Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
1. _____	0	<input type="checkbox"/> 0.0%	_____
2. _____	0	<input type="checkbox"/> 0.0%	_____
0 = Total Cover			

Dominance Test worksheet:
 Number of Dominant Species That are OBL, FACW, or FAC: 4 (A)
 Total Number of Dominant Species Across All Strata: 4 (B)
 Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>70</u>	x 1 = <u>70</u>
FACW species <u>60</u>	x 2 = <u>120</u>
FAC species <u>10</u>	x 3 = <u>30</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>140</u> (A)	<u>220</u> (B)

 Prevalence Index = B/A = 1.571

Hydrophytic Vegetation Indicators:
☒ **1 - Rapid Test for Hydrophytic Vegetation**
☒ **2 - Dominance Test is > 50%**
☒ **3 - Prevalence Index is ≤ 3.0¹**
☐ **4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)**
☐ **Problematic Hydrophytic Vegetation¹ (Explain)**
¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ☒ No ☐

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-008 PEM**

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils ³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

Secondary Indicators (minimum of two required)

- | | | |
|--|---|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input checked="" type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Dry Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input checked="" type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) | |

Field Observations:

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

Water Table Present? Yes ☒ No ☐ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0

Wetland Hydrology Present? Yes ☒ No ☐

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

NA

Remarks:

The source of hydrology is surface runoff.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 13-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-008 UPL
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 16W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): convex
 Slope: 1.0% / 0.6 ° Lat.: 40.230441 Long.: -82.850371 Datum: NAD83
 Soil Map Unit Name: BeA: Bennington silt loam, 0 to 2 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland data point for W-MRK-008. Upland data was collected within a fallow/old field.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	0		
	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)				Prevalence Index worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>0</u> x 2 = <u>0</u>	
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>120</u> x 4 = <u>480</u>	
	0	= Total Cover		UPL species <u>10</u> x 5 = <u>50</u>	
Herb Stratum (Plot size: 5' radius)				Column Totals: <u>130</u> (A) <u>530</u> (B)	
1. <u>Dactylis glomerata</u>	50	<input checked="" type="checkbox"/> 38.5%	FACU	Prevalence Index = B/A = <u>4.077</u>	
2. <u>Festuca arundinacea</u>	50	<input checked="" type="checkbox"/> 38.5%	FACU		
3. <u>Solidago canadensis</u>	10	<input type="checkbox"/> 7.7%	FACU		
4. <u>Andropogon virginicus</u>	10	<input type="checkbox"/> 7.7%	FACU		
5. <u>Daucus carota</u>	10	<input type="checkbox"/> 7.7%	UPL		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
	130	= Total Cover			
Woody Vine Stratum (Plot size: 30' radius)				Hydrophytic Vegetation Indicators:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%	_____		<input type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 ¹	
				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-008 UPL**

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils ³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? (includes capillary fringe) Yes ☐ No ☒ Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

NA

Remarks:

No source of hydrology was observed.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 13-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: **W-MRK-009 PEM**
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 16W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): concave
 Slope: 1.0% / 0.6 ° Lat.: 40.23133 Long.: -82.843972 Datum: NAD83
 Soil Map Unit Name: Cen1B1: Centerburg silt loam, 2 to 6 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input checked="" type="radio"/> No <input type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: This PEM wetland is located in a depression on the existing sub station property. The depression is collecting surface runoff from the surrounding area. The wetland boundary follows edge of depression.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	0		
	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)				Prevalence Index worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>30</u> x 1 = <u>30</u>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>90</u> x 2 = <u>180</u>	
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>0</u> x 4 = <u>0</u>	
	0	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
Herb Stratum (Plot size: 5' radius)				Column Totals: <u>120</u> (A) <u>210</u> (B)	
1. Phalaris arundinacea	60	<input checked="" type="checkbox"/> 50.0%	FACW	Prevalence Index = B/A = <u>1.750</u>	
2. Phragmites australis	30	<input checked="" type="checkbox"/> 25.0%	FACW		
3. Juncus effusus	10	<input type="checkbox"/> 8.3%	OBL		
4. Typha angustifolia	10	<input type="checkbox"/> 8.3%	OBL		
5. Scirpus atrovirens	10	<input type="checkbox"/> 8.3%	OBL		
6. _____	0	<input type="checkbox"/> 0.0%	_____		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
	120	= Total Cover			
Woody Vine Stratum (Plot size: 30' radius)				Hydrophytic Vegetation Indicators:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%	_____		<input checked="" type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 ¹	
				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/>	

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-009 PEM**

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- | | |
|--|--|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input checked="" type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils ³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒

Depth (inches):

Water Table Present? Yes ☐ No ☒

Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒

Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

NA

Remarks:

The source of hydrology is surface runoff.

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: Vassell Station City/County: Delaware Sampling Date: 13-Apr-23
 Applicant/Owner: AEP State: OH Sampling Point: W-MRK-009 UPL
 Investigator(s): MRK, ACB Section, Township, Range: S T 4N R 16W
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): flat
 Slope: 1.0% / 0.6 ° Lat.: 40.231435 Long.: -82.843878 Datum: NAD83
 Soil Map Unit Name: Cen1B1: Centerburg silt loam, 2 to 6 percent slopes NWI classification: NA

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

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

Hydrophytic Vegetation Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland? Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/> No <input checked="" type="radio"/>	
Remarks: Upland data point for W-MRK-009. Upland data was collected within a fallow/old field.		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: 30' radius)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	Dominance Test worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	0	<input type="checkbox"/> 0.0%	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
3. _____	0	<input type="checkbox"/> 0.0%	_____	Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)	
4. _____	0	<input type="checkbox"/> 0.0%	_____		
5. _____	0	<input type="checkbox"/> 0.0%	0		
	0	= Total Cover			
Sapling/Shrub Stratum (Plot size: 15' radius)				Prevalence Index worksheet:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		Total % Cover of: Multiply by:
2. _____	0	<input type="checkbox"/> 0.0%	_____	OBL species <u>0</u> x 1 = <u>0</u>	
3. _____	0	<input type="checkbox"/> 0.0%	_____	FACW species <u>0</u> x 2 = <u>0</u>	
4. _____	0	<input type="checkbox"/> 0.0%	_____	FAC species <u>0</u> x 3 = <u>0</u>	
5. _____	0	<input type="checkbox"/> 0.0%	_____	FACU species <u>145</u> x 4 = <u>580</u>	
	0	= Total Cover		UPL species <u>5</u> x 5 = <u>25</u>	
Herb Stratum (Plot size: 5' radius)				Column Totals: <u>150</u> (A) <u>605</u> (B)	
1. <u>Dactylis glomerata</u>	50	<input checked="" type="checkbox"/> 33.3%	FACU	Prevalence Index = B/A = <u>4.033</u>	
2. <u>Festuca arundinacea</u>	50	<input checked="" type="checkbox"/> 33.3%	FACU		
3. <u>Solidago canadensis</u>	20	<input type="checkbox"/> 13.3%	FACU		
4. <u>Trifolium pratense</u>	20	<input type="checkbox"/> 13.3%	FACU		
5. <u>Daucus carota</u>	5	<input type="checkbox"/> 3.3%	UPL		
6. <u>Andropogon virginicus</u>	5	<input type="checkbox"/> 3.3%	FACU		
7. _____	0	<input type="checkbox"/> 0.0%	_____		
8. _____	0	<input type="checkbox"/> 0.0%	_____		
9. _____	0	<input type="checkbox"/> 0.0%	_____		
10. _____	0	<input type="checkbox"/> 0.0%	_____		
	150	= Total Cover			
Woody Vine Stratum (Plot size: 30' radius)				Hydrophytic Vegetation Indicators:	
1. _____	0	<input type="checkbox"/> 0.0%	_____		<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	0	<input type="checkbox"/> 0.0%	_____		<input type="checkbox"/> 2 - Dominance Test is > 50%
	0	= Total Cover		<input type="checkbox"/> 3 - Prevalence Index is ≤ 3.0 ¹	
				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
				Hydrophytic Vegetation Present? Yes <input type="radio"/> No <input checked="" type="radio"/>	

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

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

SOIL

Sampling Point: **W-MRK-009 UPL**

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.

²Location: PL=Pore Lining. M=Matrix.

Hydric Soil Indicators:

- | | |
|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Gleyed Matrix (S4) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Sandy Redox (S5) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Stripped Matrix (S6) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Mucky Mineral (F1) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) |
| <input type="checkbox"/> 2 cm Muck (A10) | <input type="checkbox"/> Depleted Matrix (F3) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Redox Dark Surface (F6) |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Depleted Dark Surface (F7) |
| <input type="checkbox"/> Sandy Muck Mineral (S1) | <input type="checkbox"/> Redox Depressions (F8) |
| <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) | |

Indicators for Problematic Hydric Soils ³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron Manganese Masses (F12)
☐ Very Shallow Dark Surface (TF12)
☐ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ☐ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- | | |
|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Water-Stained Leaves (B9) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Aquatic Fauna (B13) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> True Aquatic Plants (B14) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Presence of Reduced Iron (C4) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Gauge or Well Data (D9) |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | <input type="checkbox"/> Other (Explain in Remarks) |

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒

Depth (inches):

Water Table Present? Yes ☐ No ☒

Depth (inches):

Saturation Present? (includes capillary fringe) Yes ☐ No ☒

Depth (inches): _____

Wetland Hydrology Present? Yes ☐ No ☒

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

NA

Remarks:

No source of hydrology was observed.

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet

Ohio EPA, Division of Surface Water Final:
February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland may be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

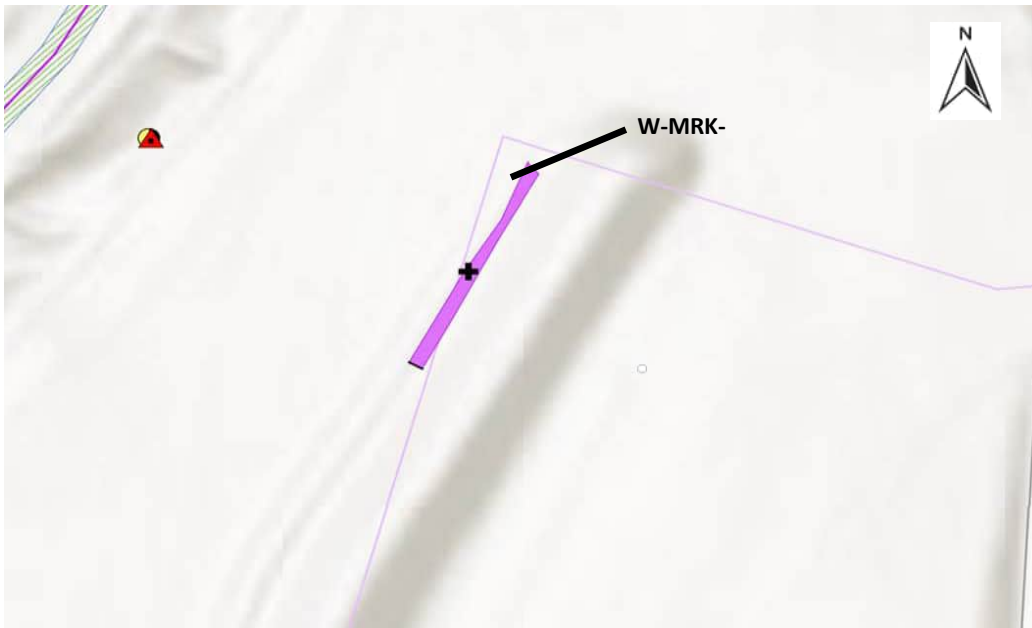
It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To properly answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at:
<http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>


Background Information

Name:	MRK, ACB
Date:	4/12/2023
Affiliation:	AECOM
Address:	707 Grant Street, 5th Floor, Pittsburgh, PA 15219
Phone Number:	814-516-1130
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	W-MRK-001 PEM
Vegetation Communit(ies):	PEM
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	40.230841, -82.854909
USGS Quad Name:	Sunbury
County:	Delaware
Township:	Berkshire
Section and Subsection:	N/A
Hydrologic Unit Code:	HUC12 050600011306
Site Visit:	4/12/2023
National Wetland Inventory Map:	See Figure 2
Ohio Wetland Inventory Map:	See Figure 2
Soil Survey:	See Figure 2
Delineation report/map:	See Figure 3

Name of Wetland:	W-MRK-001 PEM		
Wetland Size (delineated acres):	0.05	Wetland Size (Estimated total acres):	0.15
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.			
			
Comments, Narrative Discussion, Justification of Category Changes:			
<p>This PEM wetland is located within a hillside swale that is collecting surface runoff. The wetland extends beyond the current study area and the boundary follows edge of swale.</p>			
Final score:	12	Category:	1

Wetland ID:	W-MRK-001 PEM
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Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		X

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

Wetland ID: W-MRK-001 PEM

Narrative Rating

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

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	*NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	*NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	*NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	*NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	*NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	*NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral ph (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

Wetland ID: W-MRK-001 PEM

<p>8b Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?</p>	<p>YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a</p>	<p>*NO Go to Question 9a</p>
<p>9a Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?</p>	<p>YES Go to Question 9b</p>	<p>*NO Go to Question 10</p>
<p>9b Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?</p>	<p>YES Wetland should be evaluated for possible Category 3 status Go to Question 10</p>	<p>*NO Go to Question 9c</p>
<p>9c Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.</p>	<p>YES Go to Question 9d</p>	<p>*NO Go to Question 10</p>
<p>9d Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?</p>	<p>YES Wetland is a Category 3 wetland Go to Question 10</p>	<p>NO Go to Question 9e</p>
<p>9e Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?</p>	<p>YES Wetland should be evaluated for possible Category 3 status Go to Question 10</p>	<p>NO Go to Question 10</p>
<p>10 Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.</p>	<p>YES Wetland is a Category 3 wetland. Go to Question 11</p>	<p>*NO Go to Question 11</p>
<p>11 Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).</p>	<p>YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating</p>	<p>*NO Complete Quantitative Rating</p>

Wetland ID:	W-MRK-001 PEM
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Table 1. Characteristic plant species.				
invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID:	W-MRK-001 PEM
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Site:	AEP Vassell Station	Rater(s):	MRK, ACB	Date:	4/12/2023
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1.0	1.0
max 6 pts	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (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)

Field ID:

W-MRK-001 PEM

Delineated acres:	0.05
Total acres:	0.15

1.0	2.0
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

7.0	9.0
max 30 pts.	subtotal

Metric 3. Hydrology.

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)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <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)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (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 (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|---|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input checked="" type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> Other: |

6.0	15.0
max 30 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

- | | |
|--|---|
| <input checked="" type="checkbox"/> mowing | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

15.0
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-MRK-001 PEM
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Site:	AEP Vassell Station	Rater(s):	MRK, ACB	Date:	4/12/2023
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15.0
subtotal this page

Field ID:
W-MRK-001 PEM

0.0	15.0
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-3.0	12.0
max 20pts.	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☐ Low (1)
- ☒ None (0)

6c. Coverage of invasive plants. Refer

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

- ☒ x Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ 1 Vegetated hummocks/tussocks
- ☐ 0 Coarse woody debris >15cm (6in)
- ☐ 0 Standing dead >25cm (10in) dbh
- ☐ 0 Amphibian breeding pools

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod 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 to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present 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

12.0	TOTAL (Max 100 pts)
1	Category

Wetland ID:	W-MRK-001 PEM
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ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1		
	Metric 2. Buffers and surrounding land use	1		
	Metric 3. Hydrology	7		
	Metric 4. Habitat	6		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersed, microtopography	-3		
	TOTAL SCORE	12		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	W-MRK-001 PEM
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Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	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 over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	*NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	*NO	Is quantitative rating score <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?	*YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall 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	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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	*NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	*Category 1	Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet

Ohio EPA, Division of Surface Water Final:
February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland may be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

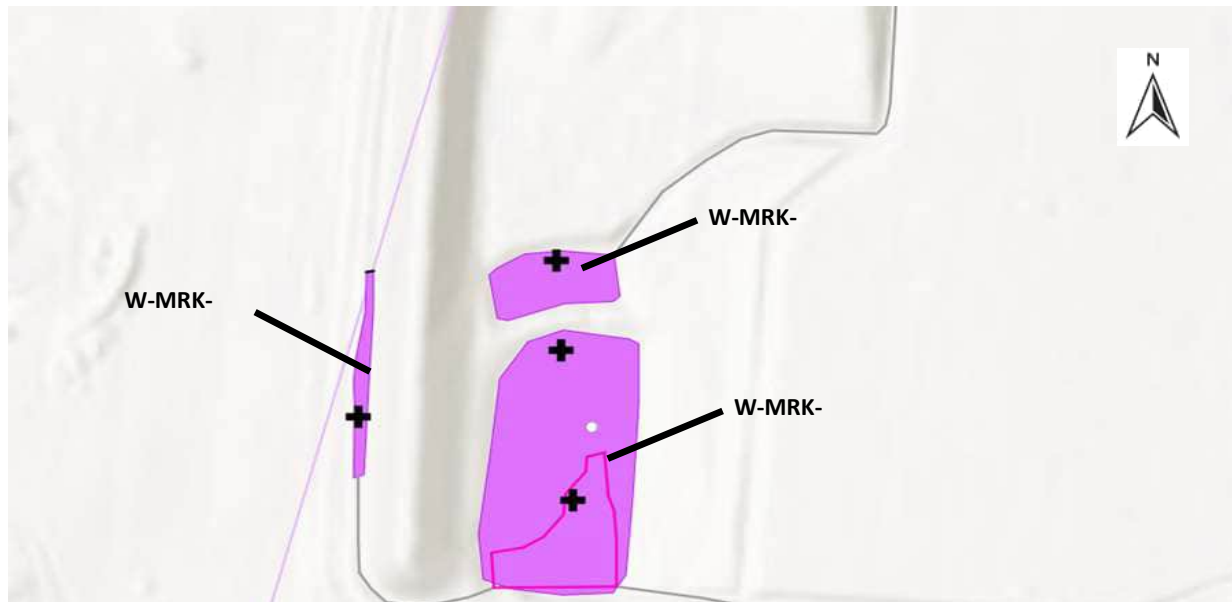
It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To properly answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at:
<http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

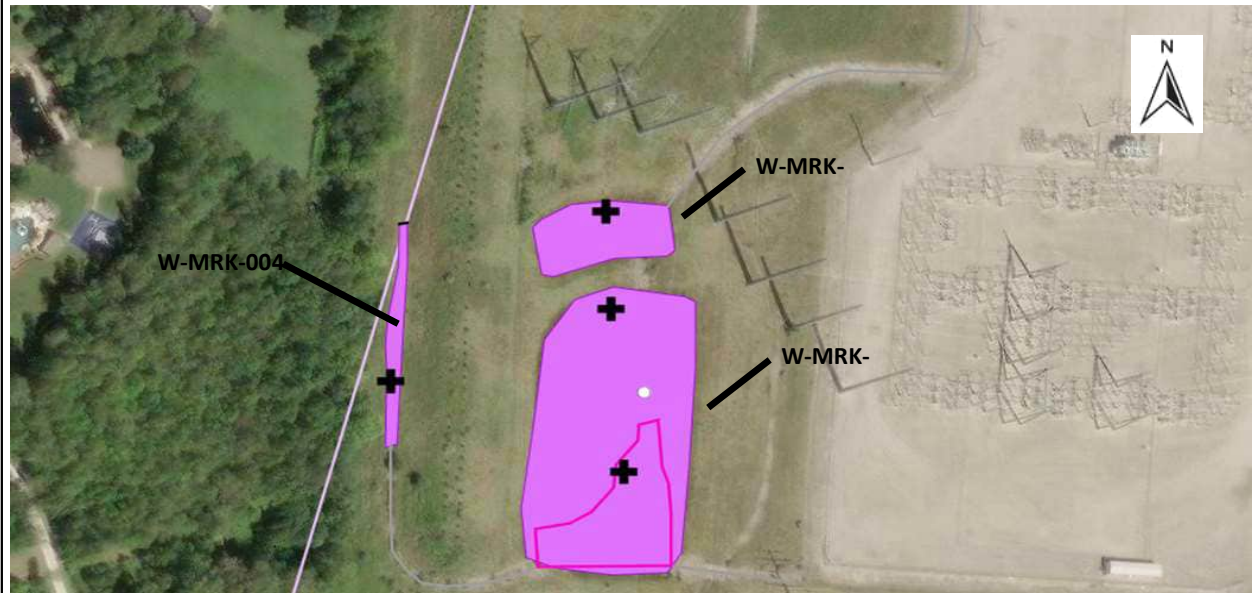
Background Information

Name:	MRK, ACB
Date:	4/12/2023
Affiliation:	AECOM
Address:	707 Grant Street, 5th Floor, Pittsburgh, PA 15219
Phone Number:	814-516-1130
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	W-MRK-002, W-MRK-003, W-MRK-004
Vegetation Communit(ies):	PEM/PUB
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	40.228557, -82.854923; 40.227936, -82.854888; 40.228173, -82.855786
USGS Quad Name:	Sunbury
County:	Delaware
Township:	Berkshire
Section and Subsection:	N/A
Hydrologic Unit Code:	HUC12 050600011306
Site Visit:	4/12/2023
National Wetland Inventory Map:	See Figure 2
Ohio Wetland Inventory Map:	See Figure 2
Soil Survey:	See Figure 2
Delineation report/map:	See Figure 3

Name of Wetland:	W-MRK-002, W-MRK-003, W-MRK-004		
Wetland Size (delineated acres):	1.88	Wetland Size (Estimated total acres):	1.92
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.			
			
Comments, Narrative Discussion, Justification of Category Changes:			
These PEM/PUB wetland complexes are a man-made sediment traps located on the existing sub station property. Rock-lined ditches direct surface runoff to the depressions. Wetland boundary follows edge of depressions.			
Final score:	21	Category:	1

Wetland ID:	W-MRK-002, W-MRK-003, W-MRK-004
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Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		X

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

Wetland ID: W-MRK-002, W-MRK-003, W-MRK-004

Narrative Rating

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

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	*NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	*NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	*NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	*NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	*NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	*NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (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

Wetland ID:	W-MRK-002, W-MRK-003, W-MRK-004
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8b Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	*NO Go to Question 9a
9a Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	*NO Go to Question 10
9b Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	*NO Go to Question 9c
9c Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	*NO Go to Question 10
9d Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10 Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	*NO Go to Question 11
11 Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	*NO Complete Quantitative Rating

Wetland ID:	W-MRK-002, W-MRK-003, W-MRK-004
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Table 1. Characteristic plant species.				
invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicaratum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID: W-MRK-002, W-MRK-003, W-MRK-004

Site: AEP Vassell Station Rater(s): MRK, ACB Date: 4/12/2023

2.0 2.0
max 6 pts subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (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)

Field ID:

W-MRK-002 PEM, W-MRK-003 PEM/PUB, W-MRK-004 PEM

Delineated acres:	1.88
Total acres:	1.92

1.0 3.0
max 14 pts. subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

7.0 10.0
max 30 pts. subtotal

Metric 3. Hydrology.

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)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <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)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (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 (4)
☐ Regularly inundated/saturated (3)
☐ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|--|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input checked="" type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input checked="" type="checkbox"/> stormwater input | <input type="checkbox"/> Other: |

7.0 17.0
max 20 pts. subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
☐ 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

- | | |
|--|---|
| <input checked="" type="checkbox"/> mowing | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting | <input checked="" type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

17.0
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID: W-MRK-002, W-MRK-003, W-MRK-004

Site: AEP Vassell Station Rater(s): MRK, ACB Date: 4/12/2023

17.0
subtotal this page

Field ID:
W-MRK-002 PEM, W-MRK-003 PEM/PUB, W-MRK-004 PEM

0.0 17.0
max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

4.0 21.0
max 20pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☒ 1 Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☒ 1 Open water
☐ Other

6b. horizontal (plan view) Interspersions.

Select only one.

- ☐ High (5)
☐ Moderately high(4)
☐ Moderate (3)
☐ Moderately low (2)
☒ x Low (1)
☐ None (0)

6c. Coverage of invasive plants. Refer

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

- ☐ Extensive >75% cover (-5)
☐ Moderate 25-75% cover (-3)
☒ x Sparse 5-25% cover (-1)
☐ Nearly absent <5% cover (0)
☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ 1 Vegetated hummocks/tussucks
☐ 0 Coarse woody debris >15cm (6in)
☐ 0 Standing dead >25cm (10in) dbh
☒ 1 Amphibian breeding pools

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 Present and either comprises significant part of wetland's 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod 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 to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
1 Low 0.1 to <1ha (0.247 to 2.47 acres)
2 Moderate 1 to <4ha (2.47 to 9.88 acres)
3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
1 Present very small amounts or if more common of marginal quality
2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 Present in moderate or greater amounts and of highest quality

21.0 TOTAL (Max 100 pts)
1 Category

Wetland ID:	W-MRK-002, W-MRK-003, W-MRK-004
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ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2		
	Metric 2. Buffers and surrounding land use	1		
	Metric 3. Hydrology	7		
	Metric 4. Habitat	7		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersions, microtopography	4		
	TOTAL SCORE	21		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	W-MRK-002, W-MRK-003, W-MRK-004
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Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	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 over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	*NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	*NO	Is quantitative rating score <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?	*YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall 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	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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	*NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	*Category 1	Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet

Ohio EPA, Division of Surface Water Final:
February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland may be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

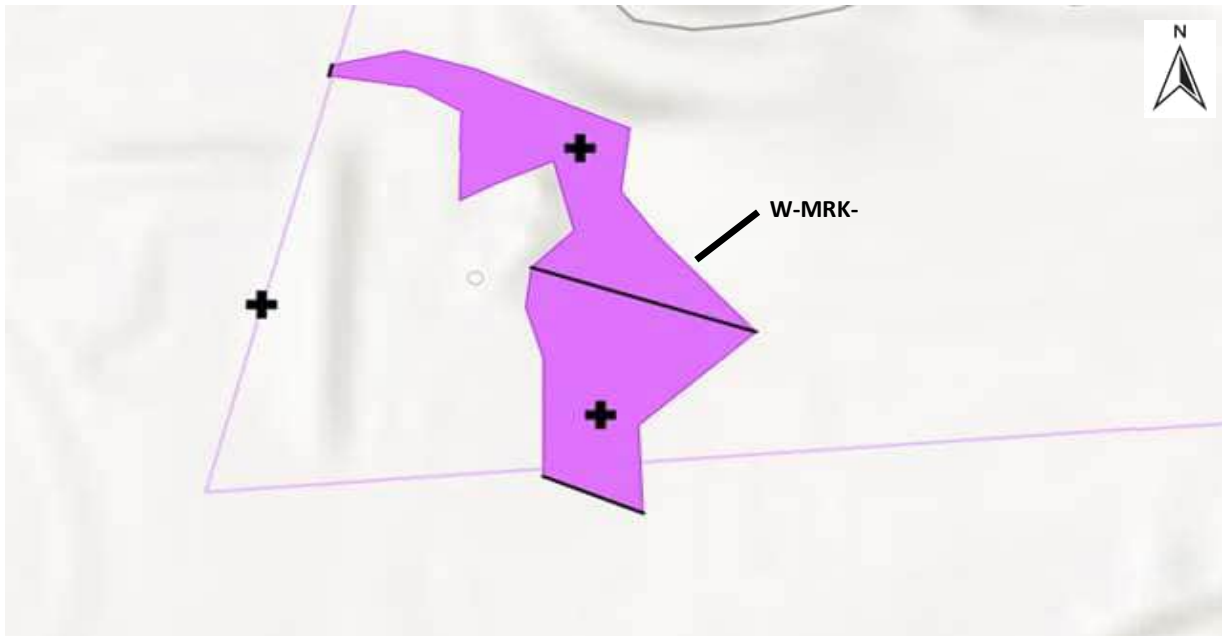
It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To properly answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at:
<http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

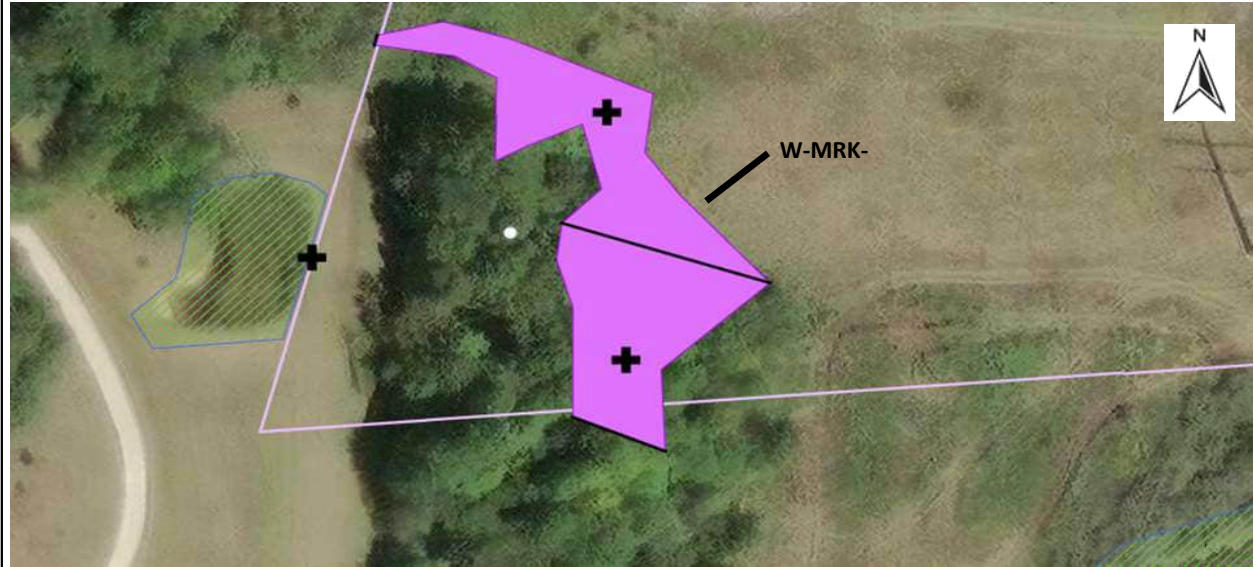
Background Information

Name:	MRK, ACB
Date:	4/12/2023
Affiliation:	AECOM
Address:	707 Grant Street, 5th Floor, Pittsburgh, PA 15219
Phone Number:	814-516-1130
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	W-MRK-005 PEM/PFO
Vegetation Communit(ies):	PEM/PFO
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	40.227070, -82.855824
USGS Quad Name:	Sunbury
County:	Delaware
Township:	Berkshire
Section and Subsection:	N/A
Hydrologic Unit Code:	HUC12 050600011306
Site Visit:	4/12/2023
National Wetland Inventory Map:	See Figure 2
Ohio Wetland Inventory Map:	See Figure 2
Soil Survey:	See Figure 2
Delineation report/map:	See Figure 3

Name of Wetland:		W-MRK-005 PEM/PFO	
Wetland Size (delineated acres):		0.40	Wetland Size (Estimated total acres): 2.85
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.			
			
Comments, Narrative Discussion, Justification of Category Changes: This PEM/PFO wetland complex is located in a depression collecting surface runoff. The wetland extends into a forested area that drains outside of the current study area. Wetland boundary follows edge of depression.			
Final score:	21	Category:	1

Wetland ID:	W-MRK-005 PEM/PFO
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Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		X

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

Wetland ID: W-MRK-005 PEM/PFO

Narrative Rating

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

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	*NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	*NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	*NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	*NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	*NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	*NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (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

Wetland ID:	W-MRK-005 PEM/PFO
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8b Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?	YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a	<div>*NO</div> Go to Question 9a
9a Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?	YES Go to Question 9b	<div>*NO</div> Go to Question 10
9b Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	<div>*NO</div> Go to Question 9c
9c Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.	YES Go to Question 9d	<div>*NO</div> Go to Question 10
9d Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?	YES Wetland is a Category 3 wetland Go to Question 10	NO Go to Question 9e
9e Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?	YES Wetland should be evaluated for possible Category 3 status Go to Question 10	NO Go to Question 10
10 Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.	YES Wetland is a Category 3 wetland. Go to Question 11	<div>*NO</div> Go to Question 11
11 Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).	YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating	<div>*NO</div> Complete Quantitative Rating

Wetland ID:	W-MRK-005 PEM/PFO
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Table 1. Characteristic plant species.				
invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinatum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID:	W-MRK-005 PEM/PFO
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Site:	AEP Vassell Station	Rater(s):	MRK, ACB	Date:	4/12/2023
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2.0	2.0
max 6 pts	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (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)

Field ID:

W-MRK-005 PEM/PFO

Delineated acres:	0.40
Total acres:	2.85

4.0	6.0
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☒ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☐ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

7.0	13.0
max 20 pts.	subtotal

Metric 3. Hydrology.

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)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <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)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (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 (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|--|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input checked="" type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input checked="" type="checkbox"/> stormwater input | <input type="checkbox"/> Other: |

8.0	21.0
max 30 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

- | | |
|--|---|
| <input checked="" type="checkbox"/> mowing | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

21.0
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID: W-MRK-005 PEM/PFO

Site: AEP Vassell Station Rater(s): MRK, ACB Date: 4/12/2023

21.0
subtotal this page

Field ID:
W-MRK-005 PEM/PFO

0.0 21.0
max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

0.0 21.0
max 20pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☐ 1 Emergent
☐ Shrub
☐ 1 Forest
☐ Mudflats
☐ Open water
☐ Other

6b. horizontal (plan view) Interspersions.

Select only one.

- ☐ High (5)
☐ Moderately high(4)
☐ Moderate (3)
☐ Moderately low (2)
☐ Low (1)
☒ None (0)

6c. Coverage of invasive plants. Refer

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)
☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 0 Vegetated hummocks/tussocks
☐ 1 Coarse woody debris >15cm (6in)
☐ 0 Standing dead >25cm (10in) dbh
☐ 0 Amphibian breeding pools

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 Present and either comprises significant part of wetland's 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod 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 to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
1 Low 0.1 to <1ha (0.247 to 2.47 acres)
2 Moderate 1 to <4ha (2.47 to 9.88 acres)
3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
1 Present very small amounts or if more common of marginal quality
2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality
3 Present in moderate or greater amounts and of highest quality

21.0 TOTAL (Max 100 pts)
1 Category

Wetland ID:	W-MRK-005 PEM/PFO
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ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2		
	Metric 2. Buffers and surrounding land use	4		
	Metric 3. Hydrology	7		
	Metric 4. Habitat	8		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersions, microtopography	0		
	TOTAL SCORE	21		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID: W-MRK-005 PEM/PFO

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 over-categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	*NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	*NO	Is quantitative rating score <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?	*YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall 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	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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	*NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	*Category 1	Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet

Ohio EPA, Division of Surface Water Final:
February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland may be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

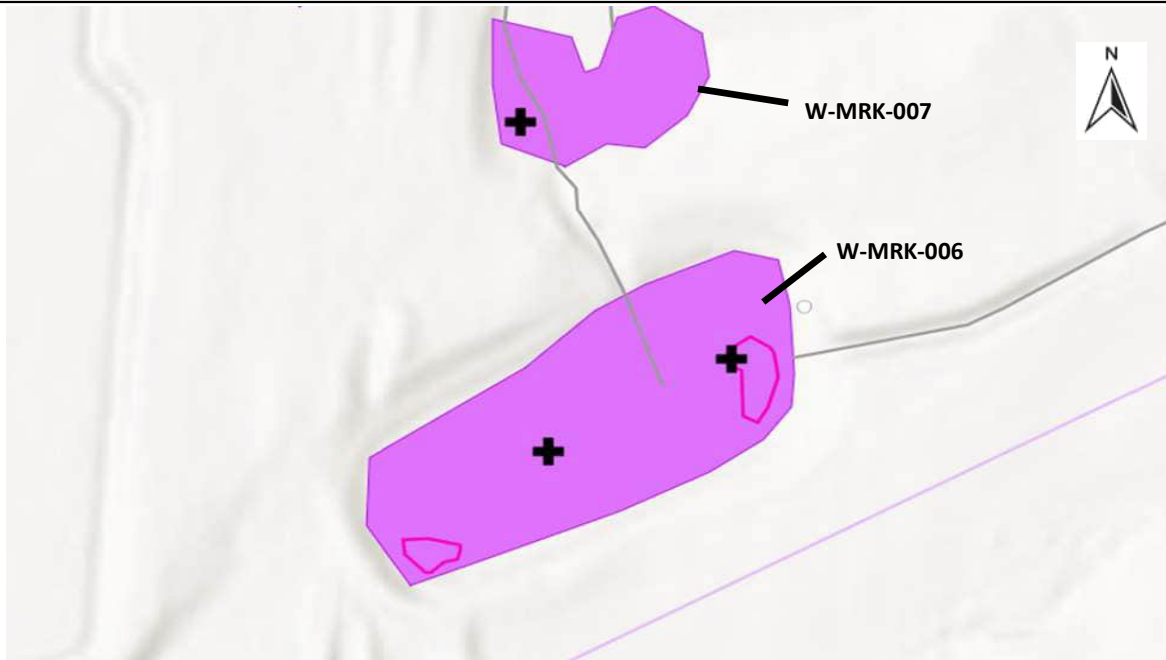
It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To properly answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at:
<http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

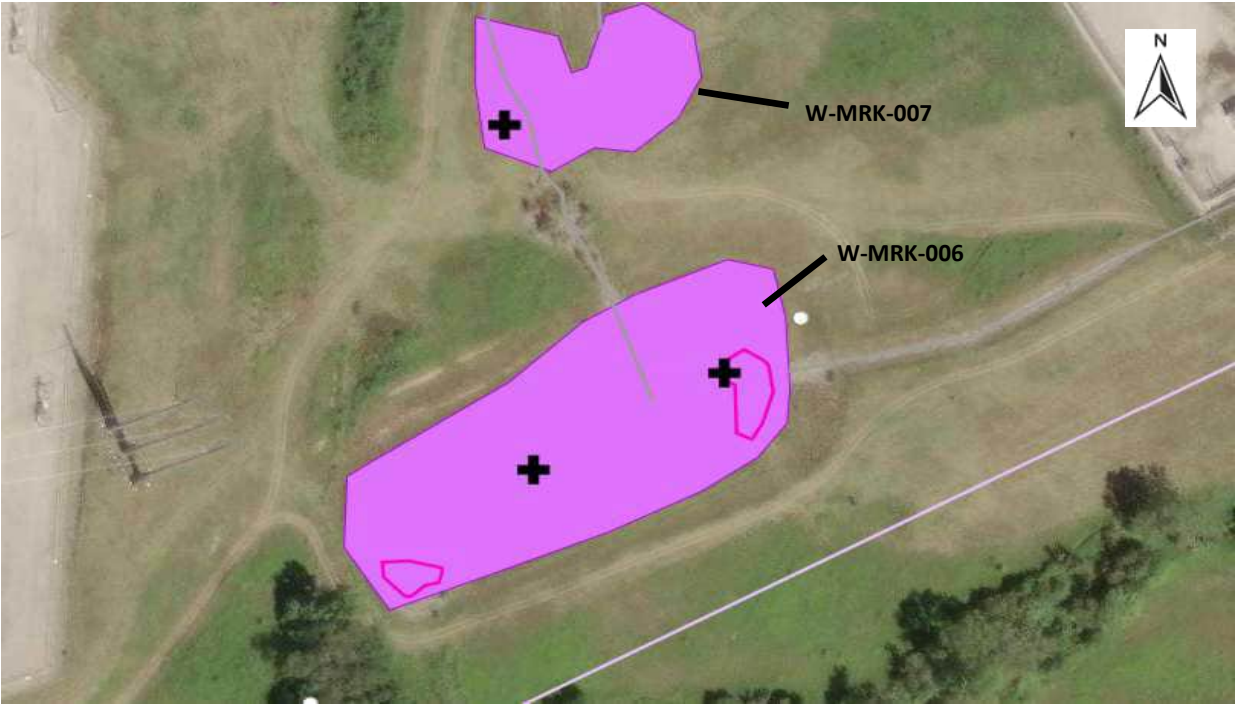
Background Information

Name:	MRK, ACB
Date:	4/12/2023
Affiliation:	AECOM
Address:	707 Grant Street, 5th Floor, Pittsburgh, PA 15219
Phone Number:	814-516-1130
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	W-MRK-006, W-MRK-007
Vegetation Communit(ies):	PEM/PUB
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	40.22806, -82.850033; 40.229097, -82.850136
USGS Quad Name:	Sunbury
County:	Delaware
Township:	Berkshire
Section and Subsection:	N/A
Hydrologic Unit Code:	HUC12 050600011306
Site Visit:	4/13/2023
National Wetland Inventory Map:	See Figure 2
Ohio Wetland Inventory Map:	See Figure 2
Soil Survey:	See Figure 2
Delineation report/map:	See Figure 3

Name of Wetland:	W-MRK-006, W-MRK-007		
Wetland Size (delineated acres):	2.71	Wetland Size (Estimated total acres):	2.71
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.			
			
Comments, Narrative Discussion, Justification of Category Changes:			
These PEM/PUB wetlands are man-made sediment trap located on the existing sub station property. Rock-lined ditches direct surface runoff to the depressions. Wetland boundary follows edge of depression.			
Final score:	18	Category:	1

Wetland ID:	W-MRK-006, W-MRK-007
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Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		X

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

Wetland ID: W-MRK-006, W-MRK-007

Narrative Rating

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

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	*NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	*NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	*NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	*NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	*NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	*NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (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

Wetland ID: W-MRK-006, W-MRK-007

<p>8b Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?</p>	<p>YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a</p>	<p>*NO Go to Question 9a</p>
<p>9a Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?</p>	<p>YES Go to Question 9b</p>	<p>*NO Go to Question 10</p>
<p>9b Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?</p>	<p>YES Wetland should be evaluated for possible Category 3 status Go to Question 10</p>	<p>*NO Go to Question 9c</p>
<p>9c Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.</p>	<p>YES Go to Question 9d</p>	<p>*NO Go to Question 10</p>
<p>9d Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?</p>	<p>YES Wetland is a Category 3 wetland Go to Question 10</p>	<p>NO Go to Question 9e</p>
<p>9e Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?</p>	<p>YES Wetland should be evaluated for possible Category 3 status Go to Question 10</p>	<p>NO Go to Question 10</p>
<p>10 Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.</p>	<p>YES Wetland is a Category 3 wetland. Go to Question 11</p>	<p>*NO Go to Question 11</p>
<p>11 Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).</p>	<p>YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating</p>	<p>*NO Complete Quantitative Rating</p>

Wetland ID:	W-MRK-006, W-MRK-007
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Table 1. Characteristic plant species.				
invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID: W-MRK-006, W-MRK-007

Site: AEP Vassell Station Rater(s): MRK, ACB Date: 4/12/2023

2.0 2.0
max 6 pts subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
☐ 10 to <25 acres (4 to <10.1ha) (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)

Field ID:

W-MRK-006 PEM/PUB, W-MRK-007 PEM

Delineated acres:	2.71
Total acres:	2.71

1.0 3.0
max 14 pts. subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

7.0 10.0
max 30 pts. subtotal

Metric 3. Hydrology.

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)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
☒ <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)
☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
☐ Between stream/lake and other human use (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 (4)
☐ Regularly inundated/saturated (3)
☐ Seasonally inundated (2)
☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|--|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input checked="" type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input checked="" type="checkbox"/> stormwater input | <input type="checkbox"/> Other: |

7.0 17.0
max 20 pts. subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
☐ 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

- | | |
|--|---|
| <input checked="" type="checkbox"/> mowing | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

17.0
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID: W-MRK-006, W-MRK-007

Site: AEP Vassell Station Rater(s): MRK, ACB Date: 4/12/2023

17.0
subtotal this page

Field ID:
W-MRK-006 PEM/PUB, W-MRK-007 PEM

0.0 17.0
max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

1.0 18.0
max 20pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☒ 1 Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☒ 1 Open water
☐ Other

6b. horizontal (plan view) Interspersions.

Select only one.

- ☐ High (5)
☐ Moderately high(4)
☐ Moderate (3)
☐ Moderately low (2)
☒ x Low (1)
☐ None (0)

6c. Coverage of invasive plants. Refer

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

- ☐ Extensive >75% cover (-5)
☒ x Moderate 25-75% cover (-3)
☐ Sparse 5-25% cover (-1)
☐ Nearly absent <5% cover (0)
☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ 0 Vegetated hummocks/tussucks
☐ 0 Coarse woody debris >15cm (6in)
☐ 0 Standing dead >25cm (10in) dbh
☒ 1 Amphibian breeding pools

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 Present and either comprises significant part of wetland's 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod 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 to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
1 Low 0.1 to <1ha (0.247 to 2.47 acres)
2 Moderate 1 to <4ha (2.47 to 9.88 acres)
3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
1 Present 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

18.0 TOTAL (Max 100 pts)
1 Category

Wetland ID:	W-MRK-006, W-MRK-007
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ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2		
	Metric 2. Buffers and surrounding land use	1		
	Metric 3. Hydrology	7		
	Metric 4. Habitat	7		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersions, microtopography	1		
	TOTAL SCORE	18		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	W-MRK-006, W-MRK-007
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Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	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 over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	*NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	*NO	Is quantitative rating score <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?	*YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall 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	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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	*NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	*Category 1	Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet

Ohio EPA, Division of Surface Water Final:
February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland may be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

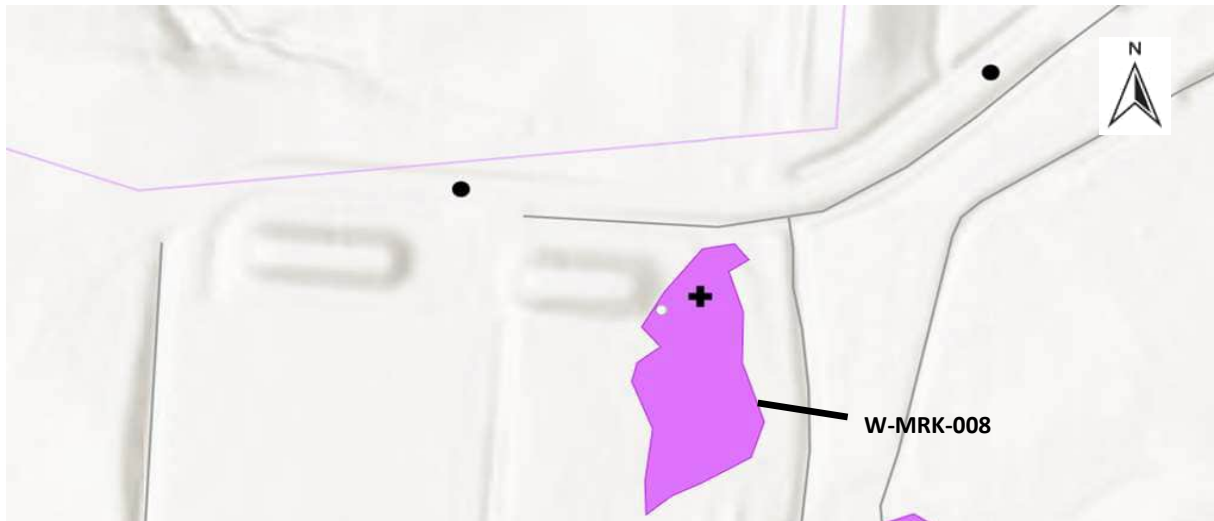
It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To properly answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at:
<http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>


Background Information

Name:	MRK, ACB
Date:	4/13/2023
Affiliation:	AECOM
Address:	707 Grant Street, 5th Floor, Pittsburgh, PA 15219
Phone Number:	814-516-1130
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	W-MRK-008 PEM
Vegetation Communit(ies):	PEM
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	40.23036, -82.850678
USGS Quad Name:	Sunbury
County:	Delaware
Township:	Berkshire
Section and Subsection:	N/A
Hydrologic Unit Code:	HUC12 050600011306
Site Visit:	4/13/2023
National Wetland Inventory Map:	See Figure 2
Ohio Wetland Inventory Map:	See Figure 2
Soil Survey:	See Figure 2
Delineation report/map:	See Figure 3

Name of Wetland:	W-MRK-008 PEM		
Wetland Size (delineated acres):	1.04	Wetland Size (Estimated total acres):	1.04
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.			
			
Comments, Narrative Discussion, Justification of Category Changes:			
This PEM wetland is located in a depression on the existing sub station property. The depression is collecting surface runoff from the surrounding area. The wetland boundary follows edge of depression.			
Final score:	15	Category:	1

Wetland ID:	W-MRK-008 PEM
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Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		X

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

Wetland ID: W-MRK-008 PEM

Narrative Rating

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

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	*NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	*NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	*NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	*NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	*NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	*NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (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

Wetland ID: W-MRK-008 PEM

<p>8b Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?</p>	<p>YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a</p>	<p>*NO Go to Question 9a</p>
<p>9a Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?</p>	<p>YES Go to Question 9b</p>	<p>*NO Go to Question 10</p>
<p>9b Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?</p>	<p>YES Wetland should be evaluated for possible Category 3 status Go to Question 10</p>	<p>*NO Go to Question 9c</p>
<p>9c Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.</p>	<p>YES Go to Question 9d</p>	<p>*NO Go to Question 10</p>
<p>9d Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?</p>	<p>YES Wetland is a Category 3 wetland Go to Question 10</p>	<p>NO Go to Question 9e</p>
<p>9e Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?</p>	<p>YES Wetland should be evaluated for possible Category 3 status Go to Question 10</p>	<p>NO Go to Question 10</p>
<p>10 Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.</p>	<p>YES Wetland is a Category 3 wetland. Go to Question 11</p>	<p>*NO Go to Question 11</p>
<p>11 Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).</p>	<p>YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating</p>	<p>*NO Complete Quantitative Rating</p>

Wetland ID:	W-MRK-008 PEM
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Table 1. Characteristic plant species.				
invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicaratum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID:	W-MRK-008 PEM
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Site:	AEP Vassell Station	Rater(s):	MRK, ACB	Date:	4/13/2023
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2.0	2.0
max 6 pts	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (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)

Field ID:

W-MRK-008 PEM

Delineated acres:	1.04
Total acres:	1.04

1.0	3.0
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

7.0	10.0
max 30 pts.	subtotal

Metric 3. Hydrology.

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)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <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)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (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 (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|--|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input checked="" type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input checked="" type="checkbox"/> stormwater input | <input type="checkbox"/> Other: |

7.0	17.0
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

- ☐ None or none apparent (4)
- ☐ 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

- | | |
|--|---|
| <input checked="" type="checkbox"/> mowing | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting | <input checked="" type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

17.0
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-MRK-008 PEM
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Site:	AEP Vassell Station	Rater(s):	MRK, ACB	Date:	4/13/2023
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17.0
subtotal this page

Field ID:
W-MRK-008 PEM

0.0	17.0
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-2.0	15.0
max 20pts.	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☒ 1 Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
☐ Moderately high(4)
☐ Moderate (3)
☐ Moderately low (2)
☒ Low (1)
☐ None (0)

6c. Coverage of invasive plants. Refer

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

- ☒ x Extensive >75% cover (-5)
☐ Moderate 25-75% cover (-3)
☐ Sparse 5-25% cover (-1)
☐ Nearly absent <5% cover (0)
☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ 1 Vegetated hummocks/tussocks
☐ 0 Coarse woody debris >15cm (6in)
☐ 0 Standing dead >25cm (10in) dbh
☐ 0 Amphibian breeding pools

Vegetation Community Cover Scale

- | | |
|---|---|
| 0 | Absent or comprises <0.1ha (0.2471 acres) contiguous area |
| 1 | Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality |
| 2 | Present and either comprises significant part of wetland's 2 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 3 vegetation and is of high quality |

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod 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 to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- | | |
|---|---|
| 0 | Absent <0.1ha (0.247 acres) |
| 1 | Low 0.1 to <1ha (0.247 to 2.47 acres) |
| 2 | Moderate 1 to <4ha (2.47 to 9.88 acres) |
| 3 | High 4ha (9.88 acres) or more |

Microtopography Cover Scale

- | | |
|---|--|
| 0 | Absent |
| 1 | Present 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 |

15.0	TOTAL (Max 100 pts)
1	Category

Wetland ID:	W-MRK-008 PEM
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ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	2		
	Metric 2. Buffers and surrounding land use	1		
	Metric 3. Hydrology	7		
	Metric 4. Habitat	7		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersions, microtopography	-2		
	TOTAL SCORE	15		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID:	W-MRK-008 PEM
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Wetland Categorization Worksheet

Choices	Circle one		Evaluation of Categorization Result of ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 2, 3, 4, 6, 7, 8a, 9d, 10	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 over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	*NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	*NO	Is quantitative rating score <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?	*YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall 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	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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	*NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	*Category 1	Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet

Ohio EPA, Division of Surface Water Final:
February 1, 2001

Instructions

The investigator is *STRONGLY URGED* to read the Manual for Using the Ohio Rapid Assessment Method for Wetlands for further elaboration and discussion of the questions below prior to using the rating forms.

The Narrative Rating is designed to categorize a wetland or to provide alerts to the Rater based on the presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as presence or possible presence of threatened or endangered species. The presence or proximity of such species is often an indicator of the quality and lack of disturbance of the wetland being evaluated. In addition, it is designed to categorize certain wetlands as very low quality (Category 1) or very high quality (Category 3) regardless of the wetland's score on the Quantitative Rating. In addition, the Narrative Rating also alerts the investigator that a particular wetland may be a Category 3 wetland, again, regardless of the wetland's score on the Quantitative Rating.

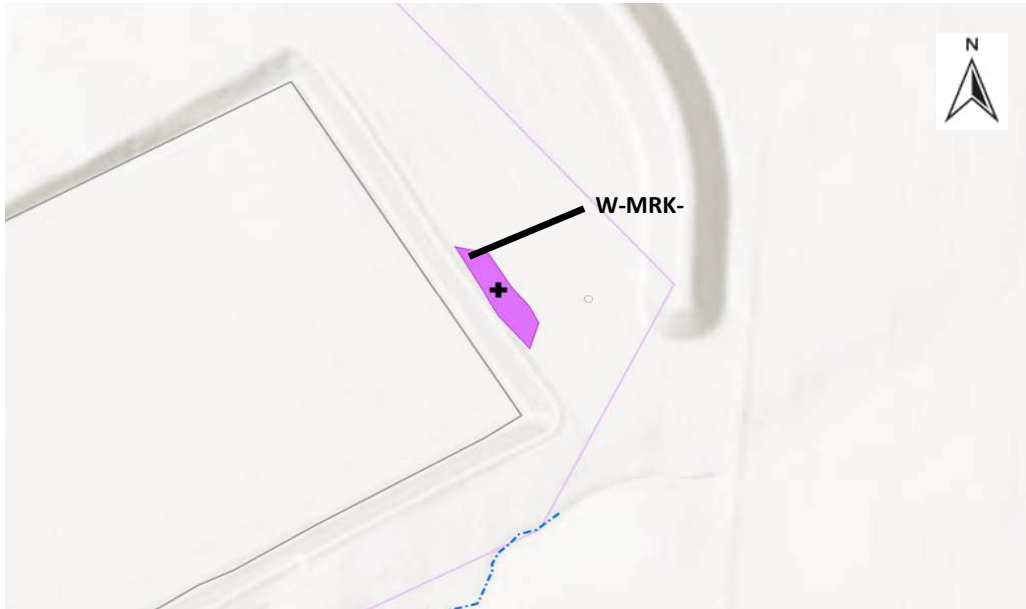
It is *VERY IMPORTANT* to properly and thoroughly answer each of the questions in the ORAM in order to properly categorize a wetland. To properly answer all the questions, the boundaries of the wetland being assessed must be correctly identified. Refer to Scoring Boundary worksheet and the User's Manual for a discussion of how to determine the "scoring boundaries." In some instances, the scoring boundaries may differ from the "jurisdictional boundaries."

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories. The most recent version of this document is posted on Ohio EPA's Division of Surface Water web page at:
<http://www.epa.ohio.gov/dsw/wetlands/WetlandEcologySection.aspx>

Background Information

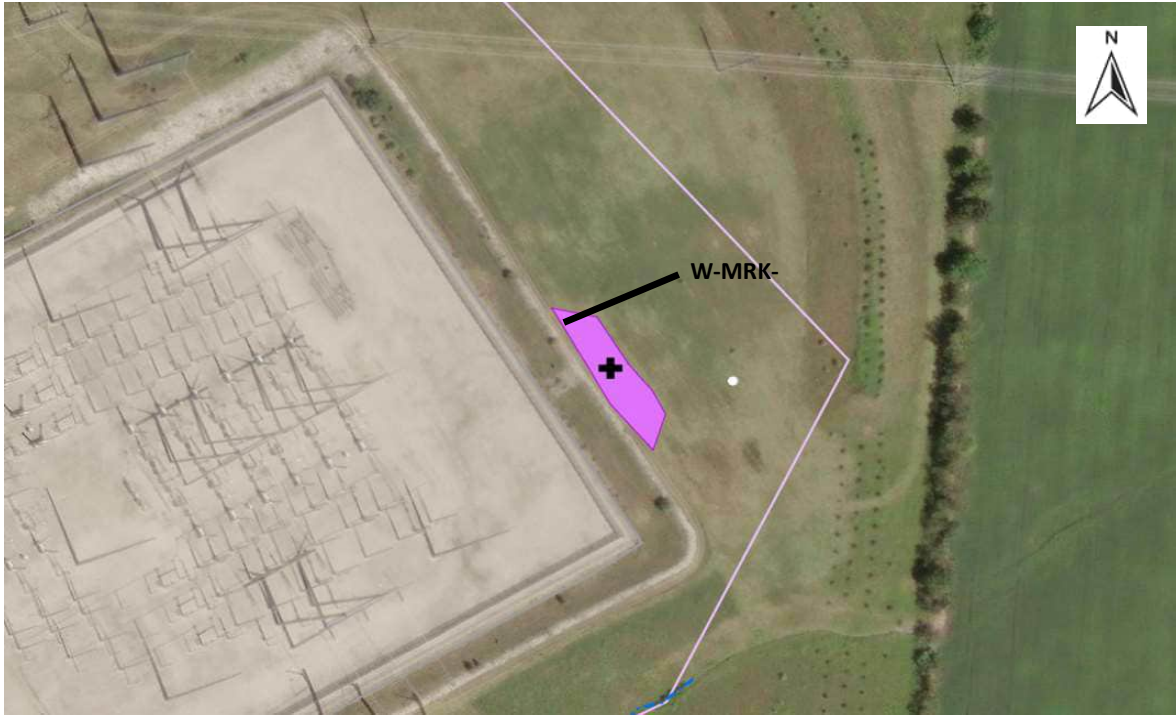
Name:	MRK, ACB
Date:	4/13/2023
Affiliation:	AECOM
Address:	707 Grant Street, 5th Floor, Pittsburgh, PA 15219
Phone Number:	814-516-1130
e-mail address:	matthew.kline@aecom.com
Name of Wetland:	W-MRK-009 PEM
Vegetation Communit(ies):	PEM
HGM Class(es):	Depressional

Location of Wetland: include map, address, north arrow, landmarks, distances, roads, etc.



Lat/Long or UTM Coordinate:	40.23133, -82.843972
USGS Quad Name:	Sunbury
County:	Delaware
Township:	Berkshire
Section and Subsection:	N/A
Hydrologic Unit Code:	HUC12 050600011306
Site Visit:	4/13/2023
National Wetland Inventory Map:	See Figure 2
Ohio Wetland Inventory Map:	See Figure 2
Soil Survey:	See Figure 2
Delineation report/map:	See Figure 3

Name of Wetland:	W-MRK-009 PEM		
Wetland Size (delineated acres):	0.25	Wetland Size (Estimated total acres):	0.25
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.			



Comments, Narrative Discussion, Justification of Category Changes:

This PEM wetland is located in a depression on the existing sub station property. The depression is collecting surface runoff from the surrounding area. The wetland boundary follows edge of depression.

Final score:	13	Category:	1
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Wetland ID:	W-MRK-009 PEM
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Scoring Boundary Worksheet

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

#	Steps in properly establishing scoring boundaries	done?	not applicable
Step 1	Identify the wetland area of interest. This may be the site of a proposed impact, a reference site, conservation site, etc.	X	
Step 2	Identify the locations where there is physical evidence that hydrology changes rapidly. Such evidence includes both natural and human- induced changes including, constrictions caused by berms or dikes, points where the water velocity changes rapidly at rapids or falls, points where significant inflows occur at the confluence of rivers, or other factors that may restrict hydrologic interaction between the wetlands or parts of a single wetland.	X	
Step 3	Delineate the boundary of the wetland to be rated such that all areas of interest that are contiguous to and within the areas where the hydrology does not change significantly, i.e. areas that have a high degree of hydrologic interaction are included within the scoring boundary.	X	
Step 4	Determine if artificial boundaries, such as property lines, state lines, roads, railroad embankments, etc., are present. These should not be used to establish scoring boundaries unless they coincide with areas where the hydrologic regime changes.	X	
Step 5	In all instances, the Rater may enlarge the minimum scoring boundaries discussed here to score together wetlands that could be scored separately.		X
Step 6	Consult ORAM Manual Section 5.0 for how to establish scoring boundaries for wetlands that form a patchwork on the landscape, divided by artificial boundaries, contiguous to streams, lakes or rivers, or for dual classifications.		X

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

Wetland ID: W-MRK-009 PEM

Narrative Rating

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

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	*NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	*NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	*NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	*NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	*NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	*NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (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

Wetland ID: W-MRK-009 PEM

<p>8b Mature forested wetlands. Is the wetland a forested wetland with 50% or more of the cover of upper forest canopy consisting of deciduous trees with large diameters at breast height (dbh), generally diameters greater than 45cm (17.7in) dbh?</p>	<p>YES Wetland should be evaluated for possible Category 3 status. Go to Question 9a</p>	<p>*NO Go to Question 9a</p>
<p>9a Lake Erie coastal and tributary wetlands. Is the wetland located at an elevation less than 575 feet on the USGS map, adjacent to this elevation, or along a tributary to Lake Erie that is accessible to fish?</p>	<p>YES Go to Question 9b</p>	<p>*NO Go to Question 10</p>
<p>9b Does the wetland's hydrology result from measures designed to prevent erosion and the loss of aquatic plants, i.e. the wetland is partially hydrologically restricted from Lake Erie due to lakeward or landward dikes or other hydrological controls?</p>	<p>YES Wetland should be evaluated for possible Category 3 status Go to Question 10</p>	<p>*NO Go to Question 9c</p>
<p>9c Are Lake Erie water levels the wetland's primary hydrological influence, i.e. the wetland is hydrologically unrestricted (no lakeward or upland border alterations), or the wetland can be characterized as an "estuarine" wetland with lake and river influenced hydrology. These include sandbar deposition wetlands, estuarine wetlands, river mouth wetlands, or those dominated by submersed aquatic vegetation.</p>	<p>YES Go to Question 9d</p>	<p>*NO Go to Question 10</p>
<p>9d Does the wetland have a predominance of native species within its vegetation communities, although non-native or disturbance tolerant native species can also be present?</p>	<p>YES Wetland is a Category 3 wetland Go to Question 10</p>	<p>NO Go to Question 9e</p>
<p>9e Does the wetland have a predominance of non-native or disturbance tolerant native plant species within its vegetation communities?</p>	<p>YES Wetland should be evaluated for possible Category 3 status Go to Question 10</p>	<p>NO Go to Question 10</p>
<p>10 Lake Plain Sand Prairies (Oak Openings) Is the wetland located in Lucas, Fulton, Henry, or Wood Counties and can the wetland be characterized by the following description: the wetland has a sandy substrate with interspersed organic matter, a water table often within several inches of the surface, and often with a dominance of the gramineous vegetation listed in Table 1 (woody species may also be present). The Ohio Department of Natural Resources Division of Natural Areas and Preserves can provide assistance in confirming this type of wetland and its quality.</p>	<p>YES Wetland is a Category 3 wetland. Go to Question 11</p>	<p>*NO Go to Question 11</p>
<p>11 Relict Wet Prairies. Is the wetland a relict wet prairie community dominated by some or all of the species in Table 1. Extensive prairies were formerly located in the Darby Plains (Madison and Union Counties), Sandusky Plains (Wyandot, Crawford, and Marion Counties), northwest Ohio (e.g. Erie, Huron, Lucas, Wood Counties), and portions of western Ohio Counties (e.g. Darke, Mercer, Miami, Montgomery, Van Wert etc.).</p>	<p>YES Wetland should be evaluated for possible Category 3 status Complete Quantitative Rating</p>	<p>*NO Complete Quantitative Rating</p>

Wetland ID:	W-MRK-009 PEM
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Table 1. Characteristic plant species.				
invasive/exotic spp	fen species	bog species	oak opening species	wet prairie species
<i>Lythrum salicaria</i>	<i>Zygadenus elegans</i> var. <i>glaucus</i>	<i>Calla palustris</i>	<i>Carex cryptolepis</i>	<i>Calamagrostis canadensis</i>
<i>Myriophyllum spicatum</i>	<i>Cacalia plantaginea</i>	<i>Carex atlantica</i> var. <i>capillacea</i>	<i>Carex lasiocarpa</i>	<i>Calamagrostis stricta</i>
<i>Najas minor</i>	<i>Carex flava</i>	<i>Carex echinata</i>	<i>Carex stricta</i>	<i>Carex atherodes</i>
<i>Phalaris arundinacea</i>	<i>Carex sterilis</i>	<i>Carex oligosperma</i>	<i>Cladium mariscoides</i>	<i>Carex buxbaumii</i>
<i>Phragmites australis</i>	<i>Carex stricta</i>	<i>Carex trisperma</i>	<i>Calamagrostis stricta</i>	<i>Carex pellita</i>
<i>Potamogeton crispus</i>	<i>Deschampsia caespitosa</i>	<i>Chamaedaphne calyculata</i>	<i>Calamagrostis canadensis</i>	<i>Carex sartwellii</i>
<i>Ranunculus ficaria</i>	<i>Eleocharis rostellata</i>	<i>Decodon verticillatus</i>	<i>Quercus palustris</i>	<i>Gentiana andrewsii</i>
<i>Rhamnus frangula</i>	<i>Eriophorum viridicarinarum</i>	<i>Eriophorum virginicum</i>		<i>Helianthus grosseserratus</i>
<i>Typha angustifolia</i>	<i>Gentianopsis</i> spp.	<i>Larix laricina</i>		<i>Liatris spicata</i>
<i>Typha xglauca</i>	<i>Lobelia kalmii</i>	<i>Nemopanthus mucronatus</i>		<i>Lysimachia quadriflora</i>
	<i>Parnassia glauca</i>	<i>Scheuchzeria palustris</i>		<i>Lythrum alatum</i>
	<i>Potentilla fruticosa</i>	<i>Sphagnum</i> spp.		<i>Pycnanthemum virginianum</i>
	<i>Rhamnus alnifolia</i>	<i>Vaccinium macrocarpon</i>		<i>Silphium terebinthinaceum</i>
	<i>Rhynchospora capillacea</i>	<i>Vaccinium corymbosum</i>		<i>Sorghastrum nutans</i>
	<i>Salix candida</i>	<i>Vaccinium oxycoccos</i>		<i>Spartina pectinata</i>
	<i>Salix myricoides</i>	<i>Woodwardia virginica</i>		<i>Solidago riddellii</i>
	<i>Salix serissima</i>	<i>Xyris difformis</i>		
	<i>Solidago ohioensis</i>			
	<i>Tofieldia glutinosa</i>			
	<i>Triglochin maritimum</i>			
	<i>Triglochin palustre</i>			

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

Wetland ID:	W-MRK-009 PEM
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Site:	AEP Vassell Station	Rater(s):	MRK, ACB	Date:	4/13/2023
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1.0	1.0
max 6 pts	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- ☐ >50 acres (>20.2ha) (6 pts)
- ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- ☐ 10 to <25 acres (4 to <10.1ha) (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)

Field ID:

W-MRK-009 PEM

Delineated acres:	0.25
Total acres:	0.25

1.0	2.0
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

2a. Calculate average buffer width. Select only one and assign score. Do not double check.

- ☐ WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- ☐ MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- ☐ NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- ☒ VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

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

7.0	9.0
max 30 pts.	subtotal

Metric 3. Hydrology.

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)

3c. Maximum water depth. Select one.

- ☐ >0.7 (27.6in) (3)
- ☐ 0.4 to 0.7m (15.7 to 27.6in) (2)
- ☒ <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)
- ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- ☐ 100 year floodplain (1)
- ☐ Between stream/lake and other human use (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 (4)
- ☐ Regularly inundated/saturated (3)
- ☐ Seasonally inundated (2)
- ☒ Seasonally saturated in upper 30cm (12in) (1)

Check all disturbances observed

- | | |
|--|---|
| <input checked="" type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input checked="" type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input checked="" type="checkbox"/> stormwater input | <input type="checkbox"/> Other: |

6.0	15.0
max 30 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

- | | |
|--|---|
| <input checked="" type="checkbox"/> mowing | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting | <input checked="" type="checkbox"/> sedimentation |
| <input type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

15.0
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Wetland ID:	W-MRK-009 PEM
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Site:	AEP Vassell Station	Rater(s):	MRK, ACB	Date:	4/13/2023
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15.0
subtotal this page

Field ID:
W-MRK-009 PEM

0.0	15.0
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-2.0	13.0
max 20pts.	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 1 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersions.

Select only one.

- ☐ High (5)
- ☐ Moderately high(4)
- ☐ Moderate (3)
- ☐ Moderately low (2)
- ☒ Low (1)
- ☐ None (0)

6c. Coverage of invasive plants. Refer

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

- ☒ x Extensive >75% cover (-5)
- ☐ Moderate 25-75% cover (-3)
- ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ 1 Vegetated hummocks/tussocks
- ☐ 0 Coarse woody debris >15cm (6in)
- ☐ 0 Standing dead >25cm (10in) dbh
- ☐ 0 Amphibian breeding pools

Vegetation Community Cover Scale

- 0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
- 1 Present and either comprises small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality
- 2 Present and either comprises significant part of wetland's 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species

Native spp are dominant component of the vegetation, mod 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 to

A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

- 0 Absent <0.1ha (0.247 acres)
- 1 Low 0.1 to <1ha (0.247 to 2.47 acres)
- 2 Moderate 1 to <4ha (2.47 to 9.88 acres)
- 3 High 4ha (9.88 acres) or more

Microtopography Cover Scale

- 0 Absent
- 1 Present 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

13.0	TOTAL (Max 100 pts)
1	Category

Wetland ID:	W-MRK-009 PEM
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ORAM Summary Worksheet

		Circle answer or insert score		Result
Narrative Rating	Question 1. Critical Habitat	YES	*NO	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES	*NO	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES	*NO	If yes, Category 3.
	Question 4. Significant bird habitat	YES	*NO	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES	*NO	If yes, Category 1.
	Question 6. Bogs	YES	*NO	If yes, Category 3.
	Question 7. Fens	YES	*NO	If yes, Category 3.
	Question 8a. Old Growth Forest	YES	*NO	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands – Unrestricted with native plants	YES	NO	If yes, Category 3
	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES	NO	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES	*NO	If yes, Category 3
	Question 11. Relict Wet Prairies	YES	*NO	If yes, evaluate for Category 3; may also be 1 or 2.
Quantitative Rating	Metric 1. Size	1		
	Metric 2. Buffers and surrounding land use	1		
	Metric 3. Hydrology	7		
	Metric 4. Habitat	6		
	Metric 5. Special Wetland Communities	0		
	Metric 6. Plant communities, interspersed, microtopography	-2		
	TOTAL SCORE	13		Category based on score breakpoints

Complete Wetland Categorization Worksheet.

Wetland ID: W-MRK-009 PEM

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 over- categorized by the ORAM
Did you answer "Yes" to any of the following questions: Narrative Rating Nos. 1, 8b, 9b, 9e, 11	YES Wetland should be evaluated for possible Category 3 status	*NO	Evaluate the wetland using the 1) narrative criteria in OAC Rule 3745-1-54(C) and 2) the quantitative rating score. If the wetland is determined to be a Category 3 wetland using either of these, it should be categorized as a Category 3 wetland. Detailed biological and/or functional assessments may also be used to determine the wetland's category.
Did you answer "Yes" to Narrative Rating No. 5	YES Wetland is categorized as a Category 1 wetland	*NO	Is quantitative rating score <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?	*YES Wetland is assigned to the appropriate category based on the scoring range	NO	If the score of the wetland is located within the scoring range for a particular category, the wetland should be assigned to that category. In all instances however, the narrative criteria described in OAC Rule 3745-1-54(C) can be used to clarify or change a categorization based on a quantitative score.
Does the quantitative score fall 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	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 <i>moderate OR superior</i> hydrologic OR habitat, OR recreational functions AND the wetland was <i>not</i> categorized as a Category 2 wetland (in the case of moderate functions) or a Category 3 wetland (in the case of superior functions) by this method?	YES Wetland was undercategorized by this method. A written justification for recategorization should be provided on Background Information Form	*NO Wetland is assigned to category as determined by the ORAM.	A wetland may be undercategorized using this method, but still exhibit one or more superior functions, e.g. a wetland's biotic communities may be degraded by human activities, but the wetland may still exhibit superior hydrologic functions because of its type, landscape position, size, local or regional significance, etc. In this circumstance, the narrative criteria in OAC Rule 3745-1-54(C)(2) and (3) are controlling, and the under-categorization should be corrected. A written justification with supporting reasons or information for this determination should be provided.

Final Category

Choose one	*Category 1	Category 2	Category 3
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End of Ohio Rapid Assessment Method for Wetlands.

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-001	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing North	

W-MRK-001	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing East	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-001	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing South	

W-MRK-001	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing West	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-001	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing Soil	

W-MRK-002	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing North	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-002	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing East	

W-MRK-002	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing South	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-002	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing West	

W-MRK-002	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing Soil	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-003	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing North	

W-MRK-003	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing East	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-003	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing South	

W-MRK-003	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing West	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-003	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing Soil	

W-MRK-003	
Date: April 12, 2023	
Description: PUB wetland Category 1 Facing North	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-003	
Date: April 12, 2023	
Description: PUB wetland Category 1 Facing East	

W-MRK-003	
Date: April 12, 2023	
Description: PUB wetland Category 1 Facing South	

Client Name:

AEP

Site Location:

Vassell 765 kV and 345kV Transformer and Site Hardening Projects

Project No.60706418, 60706424
and 60706428**W-MRK-003****Date:**

April 12, 2023

Description:

PUB wetland

Category 1

Facing West

**W-MRK-003****Date:**

April 12, 2023

Description:

PUB wetland

Category 1

Facing Soil



Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-004	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing North	

W-MRK-004	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing East	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-004	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing South	

W-MRK-004	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing West	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-004	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing Soil	

W-MRK-005	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing North	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-005	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing East	

W-MRK-005	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing South	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-005	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing West	

W-MRK-005	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing Soil	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-005	
Date: April 12, 2023	
Description: PFO wetland Category 1 Facing North	

W-MRK-005	
Date: April 12, 2023	
Description: PFO wetland Category 1 Facing East	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-005	
Date: April 12, 2023	
Description: PFO wetland Category 1 Facing South	

W-MRK-005	
Date: April 12, 2023	
Description: PFO wetland Category 1 Facing West	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-005	
Date: April 12, 2023	
Description: PFO wetland Category 1 Facing Soil	

W-MRK-006	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing North	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-006	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing East	


W-MRK-006	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing South	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-006	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing West	

W-MRK-006	
Date: April 12, 2023	
Description: PEM wetland Category 1 Facing Soil	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-006	
Date: April 12, 2023	
Description: PUB wetland Category 1 Facing North	

W-MRK-006	
Date: April 12, 2023	
Description: PUB wetland Category 1 Facing East	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-006	
Date: April 12, 2023	
Description: PUB wetland Category 1 Facing South	

W-MRK-006	
Date: April 12, 2023	
Description: PUB wetland Category 1 Facing West	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-006	
Date: April 12, 2023	
Description: PUB wetland Category 1 Facing Soil	

W-MRK-007	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing North	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-007	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing East	


W-MRK-007	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing South	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-007	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing West	

W-MRK-007	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing Soil	


Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-008	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing North	

W-MRK-008	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing East	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-008	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing South	

W-MRK-008	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing West	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-008	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing Soil	

W-MRK-009	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing North	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-009	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing East	

W-MRK-009	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing South	

Client Name: AEP	Site Location: Vassell 765 kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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W-MRK-009	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing West	

W-MRK-009	
Date: April 13, 2023	
Description: PEM wetland Category 1 Facing Soil	



SITE NAME/LOCATION _____
 _____ SITE NUMBER _____ RIVER BASIN _____ DRAINAGE AREA (mi²) _____
 LENGTH OF STREAM REACH (ft) _____ LAT. _____ LONG. _____ RIVER CODE _____ RIVER MILE _____
 DATE _____ SCORER _____ COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS:

☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	_____	<input type="checkbox"/> SILT [3 pt]	_____
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	_____	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	_____
<input type="checkbox"/> BEDROCK [16 pt]	_____	<input type="checkbox"/> FINE DETRITUS [3 pts]	_____
<input type="checkbox"/> COBBLE (65-256 mm) [12 pts]	_____	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	_____
<input type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	_____	<input type="checkbox"/> MUCK [0 pts]	_____
<input type="checkbox"/> SAND (<2 mm) [6 pts]	_____	<input type="checkbox"/> ARTIFICIAL [3 pts]	_____

Total of Percentages of
Bldr Slabs, Boulder, Cobble, Bedrock _____

(A)

Substrate Percentage
Check

(B)

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: _____

TOTAL NUMBER OF SUBSTRATE TYPES: _____

HHEI Metric Points

Substrate
Max = 40

A + B

2. **Maximum Pool Depth** (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check *ONLY* one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth
Max = 30

COMMENTS _____ MAXIMUM POOL DEPTH (Inches): _____

3. **BANK FULL WIDTH** (Measured as the average of 3-4 measurements) (Check *ONLY* one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]	

Bankfull
Width
Max=30

COMMENTS _____ AVERAGE BANKFULL WIDTH (Feet): _____

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY

☆NOTE: River Left (L) and Right (R) as looking downstream ☆

RIPARIAN WIDTH

L	R	(Per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Wide >10m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5m
<input type="checkbox"/>	<input type="checkbox"/>	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

FLOW REGIME (At Time of Evaluation) (Check *ONLY* one box):

<input type="checkbox"/> Stream Flowing	<input type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☐ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: _____ Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): _____ Date of last precipitation: _____ Quantity: _____

Photograph Information: _____

Elevated Turbidity? (Y/N): _____ Canopy (% open): _____ **Overall Stability of BOTH Stream Banks (check one):**
Stable Moderately Stable Unstable

Were samples collected for water chemistry? (Y/N): _____ (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

Is the sampling reach representative of the stream (Y/N) _____ If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

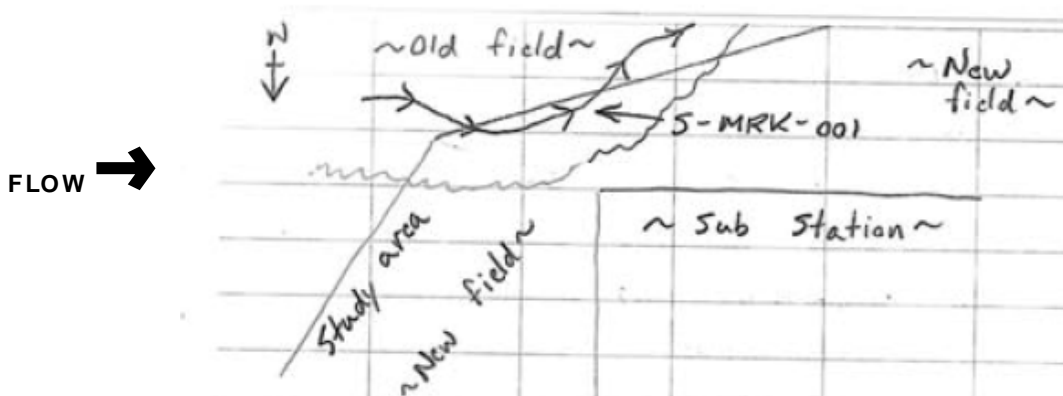
Performed? (Y/N): _____ (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____
Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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S-MRK-001	
Date: April 13, 2023	
Description: Intermittent Facing Upstream	

S-MRK-001	
Date: April 13, 2023	
Description: Intermittent Facing Downstream	

Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
----------------------------	--	--

S-MRK-001	
Date: April 13, 2023	
Description: Intermittent Substrate	

APPENDIX D**UPLAND DRAINAGE FEATURE PHOTOGRAPHIC RECORD****HABITAT PHOTOGRAPHIC RECORD**

Client Name:

AEP

Site Location:

Vassell 765kV and 345kV Transformer and Site Hardening Projects

Project No.

60706418, 60706424
and 60706428

UDF-MRK-001

Date:

April 13, 2023

Description:

Upland Drainage
Feature

Facing Upgradient



UDF-MRK-001

Date:

April 13, 2023

Description:

Upland Drainage
Feature

Facing Downgradient



Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
----------------------------	--	--

UDF-MRK-001	
Date: April 13, 2023	
Description: Upland Drainage Feature Facing Substrate	

UDF-MRK-002	
Date: April 13, 2023	
Description: Upland Drainage Feature Facing Upgradient	

Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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UDF-MRK-002	
Date: April 13, 2023	
Description: Upland Drainage Feature Facing Downgradient	

UDF-MRK-002	
Date: April 13, 2023	
Description: Upland Drainage Feature Facing Substrate	

Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
----------------------------	--	--

UDF-MRK-003	
Date: April 13, 2023	
Description: Upland Drainage Feature Facing Upgradient	

UDF-MRK-003	
Date: April 13, 2023	
Description: Upland Drainage Feature Facing Downgradient	

Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
----------------------------	--	--

UDF-MRK-003	
Date: April 13, 2023	
Description: Upland Drainage Feature Facing Substrate	

UDF-MRK-004	
Date: April 13, 2023	
Description: Upland Drainage Feature Facing Upgradient	

Client Name:

AEP

Site Location:

Vassell 765kV and 345kV Transformer and Site Hardening Projects

Project No.

60706418, 60706424
and 60706428

UDF-MRK-004

Date:

April 13, 2023

Description:

Upland Drainage
Feature

Facing Downgradient



UDF-MRK-004

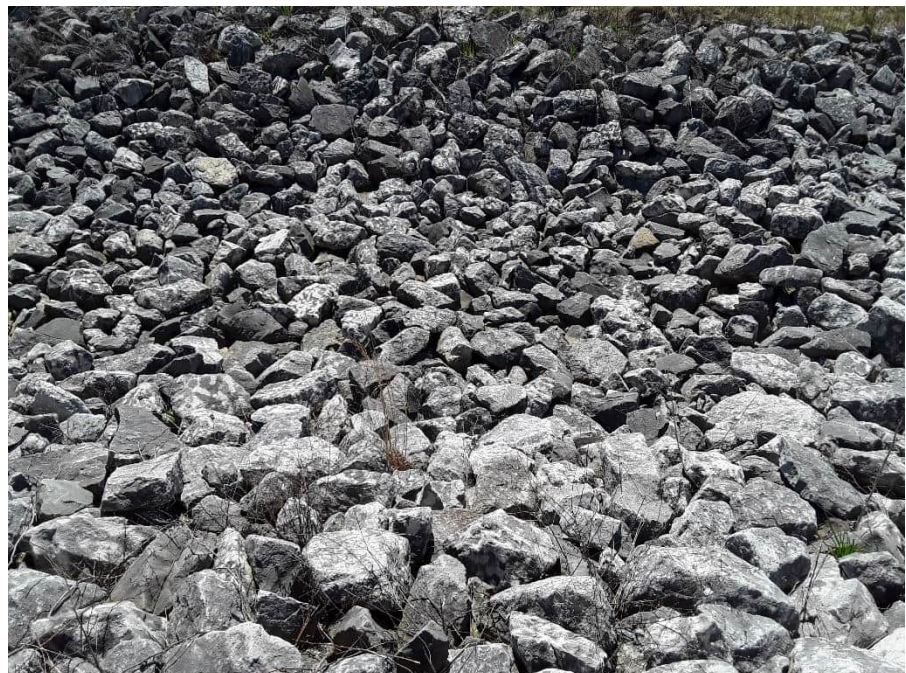
Date:

April 13, 2023

Description:

Upland Drainage
Feature

Facing Substrate



Client Name:

AEP

Site Location:

Vassell 765kV and 345kV Transformer and Site Hardening Projects

Project No.

60706418, 60706424
and 60706428

UDF-MRK-005

Date:

April 13, 2023

Description:

Upland Drainage
Feature

Facing Upgradient



UDF-MRK-005

Date:

April 13, 2023

Description:

Upland Drainage
Feature

Facing Downgradient



Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
----------------------------	--	--

UDF-MRK-005	
Date: April 13, 2023	
Description: Upland Drainage Feature Facing Substrate	

UDF-MRK-006	
Date: April 13, 2023	
Description: Upland Drainage Feature Facing Upgradient	

Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
----------------------------	--	--


UDF-MRK-006	
Date: April 13, 2023	
Description: Upland Drainage Feature Facing Downgradient	

UDF-MRK-006	
Date: April 13, 2023	
Description: Upland Drainage Feature Facing Substrate	

APPENDIX E
HABITAT PHOTOGRAPHIC RECORD

Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
----------------------------	--	--

PH-01	
Date: April 12, 2023	
Description: Old Field Facing South	

PH-02	
Date: April 12, 2023	
Description: Streams/Wetlands Facing North	

Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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PH-03	
Date: April 12, 2023	
Description: Woodlands Facing South	


PH-04	
Date: April 12, 2023	
Description: Woodlands Facing East	

Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
----------------------------	--	--

PH-05	
Date: April 12, 2023	
Description: Old Field Facing East	

PH-06	
Date: April 12, 2023	
Description: Streams/Wetlands Facing South	

Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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PH-07	
Date: April 13, 2023	
Description: Old Field Facing East	

PH-08	
Date: April 13, 2023	
Description: Woodlands Facing North	

Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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PH-09	
Date: April 13, 2023	
Description: Old Field Facing East	

PH-10	
Date: April 13, 2023	
Description: Old Field Facing North	




Imagine it.
Delivered.

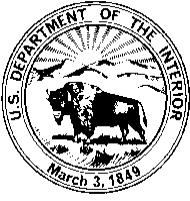
PHOTOGRAPHIC RECORD

Habitat Photograph Record

Client Name: AEP	Site Location: Vassell 765kV and 345kV Transformer and Site Hardening Projects	Project No. 60706418, 60706424 and 60706428
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PH-11	
Date: April 13, 2023	
Description: Urban Facing East	

APPENDIX F
AGENCY CORRESPONDENCE



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
4625 Morse Road, Suite 104
Columbus, Ohio 43230
(614) 416-8993 / FAX (614) 416-8994



April 14, 2023

Project Code: 2023-0066336

Dear Mr. Holmes:

The U.S Fish and Wildlife Service (Service) has received your recent correspondence requesting information about the subject proposal. We offer the following comments and recommendations to assist you in minimizing and avoiding adverse impacts to threatened, endangered, and proposed species pursuant to the Endangered Species Act of 1973 (16 U.S.C. 1531 et seq), as amended (ESA).

Federally Threatened and Endangered Species: The endangered Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) occur throughout the State of Ohio. The Indiana bat and northern long-eared bat may be found 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 breed that may also include adjacent and interspersed non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, woodlots, fallow fields, and pastures. Roost trees for both species include live and standing dead trees ≥ 3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities. These roost trees may be located in forested habitats as well as linear features such as fencerows, riparian forests, and other wooded corridors. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet 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, rock crevices and abandoned mines.

Federally Proposed Species: On September 14, 2022, the Service proposed to list the tricolored bat (*Perimyotis subflavus*) as endangered under the ESA. The bat faces extinction due to the impacts of white-nose syndrome, a deadly disease affecting cave-dwelling bats across the continent. During spring, summer, and fall, this species roosts primarily among leaf clusters of live or recently dead trees, emerging at dusk to hunt for insects over waterways and forest edges. While white-nose syndrome is by far the most serious threat to the tricolored bat, other threats now have an increased significance due to the dramatic decline in the species' population. These threats include disturbance to bats in roosting, foraging, commuting, and over-wintering habitats. Mortality due to collision with wind turbines, especially during migration, has also been documented across their range. Conservation measures for the Indiana bat and northern long-eared bat will also help to conserve the tricolored bat.

Seasonal Tree Clearing for Federally Listed Bat Species: Should the proposed project site contain trees ≥ 3 inches dbh, we recommend avoiding tree removal 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 removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats.

If implementation of this seasonal tree cutting recommendation is not possible, a summer presence/absence survey may be conducted for Indiana bats and northern long-eared bats. If Indiana bats and northern long-eared bats are not detected during the survey, then tree clearing may occur at any time of the year. Surveys must be conducted by an approved surveyor and be designed and conducted in coordination with the Ohio Field Office. Surveyors must have a valid federal permit. Please note that in Ohio summer mist net surveys may only be conducted between June 1 and August 15.

Section 7 Coordination: If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), then 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 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. This letter provides technical assistance only and does not serve as a completed section 7 consultation document.

Stream and Wetland Avoidance: Over 90% of the wetlands in Ohio have been drained, filled, or modified by human activities, thus is it important to conserve the functions and values of the remaining wetlands in Ohio (https://epa.ohio.gov/portals/47/facts/ohio_wetlands.pdf). We recommend avoiding and minimizing project impacts to all wetland habitats (e.g., forests, streams, vernal pools) to the maximum extent possible in order to benefit water quality and fish and wildlife habitat. Additionally, natural buffers around streams and wetlands should be preserved to enhance beneficial functions. If streams or wetlands will be impacted, the U.S. Army 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. Disturbed areas should be mulched and revegetated with native plant species. In addition, prevention of non-native, invasive plant establishment is critical in maintaining high quality habitats.

Due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, or proposed species, or proposed or designated critical habitat. Should the project design change, or 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, coordination with the Service should be initiated to assess any potential impacts.

Thank you for your efforts to conserve listed species and sensitive habitats in Ohio. We recommend coordinating with the Ohio Department of Natural Resources due to the potential for the proposed project to affect state listed species and/or state lands. Contact Mike Pettegrew, Environmental Services Administrator, at (614) 265-6387 or at mike.pettegrew@dnr.ohio.gov.

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,

A handwritten signature in blue ink, appearing to read "Patrice Ashfield". The signature is fluid and cursive, with the first name "Patrice" and last name "Ashfield" clearly distinguishable.

Patrice Ashfield
Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW
Eileen Wyza, ODNR-DOW



Ohio Department of Natural Resources

MIKE DEWINE, GOVERNOR

MARY MERTZ, DIRECTOR

Office of Real Estate

John Kessler, Chief

2045 Morse Road – Bldg. E-2

Columbus, OH 43229

Phone: (614) 265-6621

Fax: (614) 267-4764

May 15, 2023

Joshua Holmes
AECOM
707 Grant Street, 5th Floor
Pittsburgh, Pennsylvania 15219

Re: 23-0397; AEP Vassell 765kV and 345kV Transformer and Site Hardening Projects

Project: The proposed project involves expanding the existing 345kV yard and 765kV yard, installing a 0.3-mile greenfield 345kV transmission line to connect the existing 345kV and 765kV yards, and upgrading the existing fence at the 345kV yard.

Location: The proposed project is located in Trenton Township, Delaware County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. 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 National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state, or federal agency nor relieve the applicant of the obligation to comply with any local, state, or federal laws or regulations.

Natural Heritage Database: A review of the Ohio Natural Heritage Database indicates there are no records of state or federally listed plants or animals within one mile of the specified project area. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area.

Fish and Wildlife: The Division of Wildlife (DOW) has the following comments.

The DOW recommends that impacts to streams, wetlands and other water resources be avoided and minimized to the fullest extent possible, and that Best Management Practices be utilized to minimize erosion and sedimentation.

The entire state of Ohio is within the range of the Indiana bat (*Myotis sodalis*), a state endangered and federally endangered species, the northern long-eared bat (*Myotis septentrionalis*), a state endangered and federally endangered species, the little brown bat (*Myotis lucifugus*), a state endangered species, and the tricolored bat (*Perimyotis subflavus*), a state endangered species. During the spring and summer (April 1 through September 30), these species of bats

predominately roost in trees behind loose, exfoliating bark, in crevices and cavities, or in the leaves. However, these species are also dependent on the forest structure surrounding roost trees. If trees are present within the project area, and trees must be cut, the DOW recommends cutting only occur from October 1 through March 31, conserving trees with loose, shaggy bark and/or crevices, holes, or cavities, as well as trees with DBH ≥ 20 if possible. If trees are present within the project area, and trees must be cut during the summer months, the DOW recommends a mist net survey or acoustic survey be conducted from June 1 through August 15, prior to any cutting. Mist net and acoustic surveys should be conducted in accordance with the most recent version of the “[OHIO DIVISION OF WILDLIFE GUIDANCE FOR BAT SURVEYS AND TREE CLEARING](#)”. If state listed bats are documented, DOW recommends cutting only occur from October 1 through March 31. However, limited summer tree cutting may be acceptable after consultation with the DOW (contact Eileen Wyza at Eileen.Wyza@dnr.ohio.gov).

The DOW also recommends that a desktop habitat assessment is conducted, followed by a field assessment if needed, to determine if a potential hibernaculum is present within the project area. Direction on how to conduct habitat assessments can be found in the current USFWS “[RANGE-WIDE INDIANA BAT & NORTHERN LONG-EARED BAT SURVEY GUIDELINES](#).” If a habitat assessment finds that a potential hibernaculum is present within 0.25 miles of the project area, please send this information to Eileen Wyza for project recommendations. If a potential or known hibernaculum is found, the DOW recommends a 0.25-mile tree cutting and subsurface disturbance buffer around the hibernaculum entrance, however, limited summer or winter tree cutting may be acceptable after consultation with the DOW. If no tree cutting or subsurface impacts to a hibernaculum are proposed, this project is not likely to impact these species.

This project is within the range of the following listed mussel species.

Federally Endangered

rayed bean (*Villosa fabalis*)

snuffbox (*Epioblasma triquetra*)

Federally Threatened

rabbitsfoot (*Quadrula cylindrica cylindrica*)

State Threatened

Salamander Mussel (*Simpsonaias ambigua*)

pondhorn (*Unio merus tetralasmus*)

Due to the location, and that there is no in-water work proposed in a perennial stream, this project is not likely to impact these or other mussel species.

The project is within the range of the northern harrier (*Circus hudsonius*), a state endangered bird. This is a common migrant and winter species. Nesters are much rarer, although they occasionally breed in large marshes and grasslands. Harriers often nest in loose colonies. The female builds a nest out of sticks on the ground, often on top of a mound. Harriers hunt over grasslands. If this type of habitat will be impacted, construction should be avoided in this habitat during the species’ nesting period of April 15 through July 31. If this habitat will not be impacted, this project is not likely to impact this species.

Due to the potential of impacts to federally listed species, as well as to state listed species, we recommend that this project be coordinated with the US Fish & Wildlife Service.

Water Resources: The Division of Water Resources has the following comment.

The [local floodplain administrator](#) should be contacted concerning the possible need for any floodplain permits or approvals for this project.

ODNR appreciates the opportunity to provide these comments. Please contact Mike Pettegrew at mike.pettegrew@dnr.ohio.gov if you have questions about these comments or need additional information.

Mike Pettegrew
Environmental Services Administrator



OHIO DIVISION OF WILDLIFE AND U.S. FISH AND WILDLIFE SERVICE (OH-FIELD OFFICE) JOINT GUIDANCE FOR BAT SURVEYS AND TREE CLEARING MAY 2023

This document has been updated with new state guidance for the 2023 field season.

This guidance applies to state recommendations only. Contact the USFWS to determine if federal consultation is also necessary to comply with federal law.

Agency Contacts:

ODNR-DOW Permit Coordinator: Wildlife.Permits@dnr.ohio.gov, (614) 265-6315

ODNR-DOW Bat Survey Coordinator: Eileen Wyza, Eileen.Wyza@dnr.ohio.gov, (614) 265-6764

USFWS OHFO Endangered Species: Angela Boyer, angela_boyer@fws.gov, (614) 416-8993, ext.122

Covid-19 Guidance:

Surveyors should follow all covid protocols put in place by their agency. All surveyors should wear masks when handling bats and anyone exhibiting symptoms of covid-19 should not participate in bat surveys.

Ohio Mist-net Surveys:

This document serves as guidance for bat mist netting activities in Ohio and does not supersede any requirements listed on your permits or facility certificate. All permit conditions must be strictly adhered to for permits to be valid and for renewal of permits beyond the existing year.

Due to the presence of White-nose Syndrome (WNS), mist-netting in Ohio must be conducted between June 1 and August 15 unless stated otherwise in your state permit. The ODNR Division of Wildlife (ODNR-DOW) and U.S. Fish and Wildlife Service (USFWS) Ohio Field Office (OHFO) have determined that delaying netting activities until June 1 will provide additional recovery time for bats affected by WNS. For presence/probable absence surveys, netting will not be accepted outside of the June 1 - August 15 timeframe.

To assess project areas for presence or probable absence of the state and federally listed Indiana bat (*Myotis sodalis*) and northern long-eared bat (*Myotis septentrionalis*) during summer residency, the USFWS developed the USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines (March 2023). This protocol, **with minor modifications referenced below**, can also be used in Ohio for the 2023 field season and includes surveying for the state-listed little brown bat (*Myotis lucifugus*) and tricolored bat (*Perimyotis subflavus*).

According to the updated federal range-wide guidelines, presence/probable absence net surveys for northern long-eared bats shall incorporate either 10 net nights per square 0.5 kilometer (123 acres) of project area, or four net nights per kilometer for linear projects. Presence/probable absence net surveys for Indiana bats shall incorporate six net nights per square 0.5 kilometer (123 acres) of project area, or two net nights per kilometer for linear

projects. If a project area is eligible for a presence/probable absence survey for both Indiana bats and northern long-eared bats, following the northern long-eared bat level of effort will qualify as a presence/ probable absence survey for both species. However, if a project area is eligible for a presence/absence survey for both species, following the Indiana bat level of effort will not qualify the survey for a northern long-eared bat presence/ probable absence survey. Please note that the USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines (March 2023) requires that a minimum of two (2) biologists (e.g., one permitted and one technician) must be on-site for every four (4) net-sets being operated. Exceptions to on-site minimum staffing levels may be allowed under extenuating circumstances, provided written justification is included in the proposed survey study plan and subsequently approved by the OHFO and ODOW.

Due to the reclassification of the northern long-eared bat on March 31, 2023, the previous northern long-eared bat 4(d) rule has been nullified. There is a new online tool in the USFWS's Information for Planning and Consultation (IPaC) website that allows project proponents to utilize a determination key (Dkey) for the northern long-eared bat. **The Dkey cannot be used to replace consultation with ODNR-DOW.** Project proponents should coordinate directly with the ODNR-DOW and the OHFO for project technical assistance for all federally listed species, including the Indiana bat and northern long-eared bat.

The tricolored bat is listed as endangered by ODNR-DOW. Additionally, the USFWS published a proposed rule to list the tri-colored bat as endangered on September 14, 2022. The USFWS is scheduled to publish a final rule on the tricolored bat's status by the end of September 2023 which could affect future project development. Therefore, in anticipation of this listing we recommend that project proponents coordinate with the OHFO in addition to ODNR-DOW to determine if the project could benefit from formal coordination with USFWS for tricolored bat. The USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines (March 2023) allows presence/absence surveys for the tricolored bat that use the northern long-eared bat level of effort.

Exception for Ohio mist-net surveys: All presence/absence surveys conducted for state listed bat species (Indiana, northern long-eared, little brown, tricolored) should follow the maximum net nights set forth in the federal guidance to be considered valid by ODNR-DOW. Any modifications to this position will be communicated at the time of the site authorization approval.

Ohio Acoustic Surveys:

Acoustic bat surveys for presence/absence will be accepted by ODNR-DOW for the 2023 season. Surveys should follow guidelines laid out in the USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines (March 2023) with the following exceptions:

- Ohio survey dates are June 1 – August 15, 2022
- After conducting automated analyses using one or more of the currently available 'approved' acoustic bat ID programs¹, qualitative analysis (i.e., manual vetting) of any calls recorded from state-endangered species (*M. sodalis*, *M. septentrionalis*², *M. lucifugus*², and *P. subflavus*²) must be completed.
- **All presence/absence acoustic surveys conducted for state listed bat species (Indiana, northern long-eared, little brown, tricolored) should follow the maximum acoustic nights set forth in the federal guidance to be considered valid by ODNR-DOW. Any modifications to this position will be communicated at the time of the site authorization approval.**

At a minimum, for each detector site/night a program considered presence of state-listed bats likely, review all files (including no IDs) from that site/night. If more than one acoustic bat ID program is used, qualitative analysis must also include a comparison of the results of each program by site and night.

¹ <https://www.fws.gov/media/indiana-bat-summer-survey-guidance>

² State listing as endangered effective July 1, 2020

Combined Mist-netting and Acoustic Surveys:

ODNR-DOW will accept the USFWS pilot survey option of combining mist-netting and acoustic surveys for traditional survey sites (e.g., 123-acre area) detailed in Appendix I of the USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines (2023). All presence/absence combined mist-net and acoustic surveys conducted for state listed bat species should follow the maximum level of effort set forth by the federal guidance to be considered valid by ODNR-DOW. Any modifications to this position will be communicated at the time of the site authorization approval.

Before Field Season:

- Anyone surveying bats using mist-nets in the state of Ohio must obtain a federal permit as well as a state scientific collection permit. The federal permit should include both the Indiana bat and the northern long-eared bat.
- Your ODNR-DOW permit consists of two documents: a Scientific Collector (Wild Animal) Permit and an endangered species letter signed by the Chief of the Division of Wildlife (in addition to your federal permit). Both ODNR-DOW documents must be obtained prior to field work and kept with you and any sub-permittees during field work.

During Field Season:

- Prior to initiation of field work (a minimum of two weeks in advance), permittees must provide proposed mist netting plans to USFWS and ODNR-DOW in the form of an e-mail letter to the USFWS OHFO and copy to the ODNR-DOW Bat Survey Coordinator. Plans must be reviewed and approved by USFWS OHFO and ODNR-DOW before ANY surveys take place. Study plans must specify objectives, location details, dates of proposed work, and all other relevant details. **Study plans must also include a USFWS Project Code. Project Codes can only be obtained by requesting an official species list through the USFWS's Information for Planning and Consultation (IPaC) website (<https://ipac.ecosphere.fws.gov/>).** When handling bats, you must strictly adhere to the current WNS Decontamination Protocol (current version can be found at <https://www.whitenosesyndrome.org/topics/decontamination>). Clothing, boots, gear, and equipment should all be thoroughly decontaminated between nights, as well as between netting sites.
- Request bat bands at least two weeks in advance of needing them. Bat bands can be obtained by e-mailing the ODNR-DOW Bat Survey Coordinator with how many bands are needed, current permit number, sizes, and a mailing address. Bands will not be issued until your permits are valid. We have two sizes of bands—2.4 mm and 4.2 mm. The 2.4 mm split metal bat ring made of aluminum alloy is suitable for banding small bats. This band must be placed on all captured Indiana, northern long-eared, little brown, and tricolored bats. The larger 4.2 mm band is suitable for silver-haired (*Lasionycteris noctivagans*), big brown (*Eptesicus fuscus*), and hoary (*Lasiurus cinereus*) bats. You must band all Indiana, northern long-eared, little brown, and tricolored bats with ODNR-DOW bands; therefore, you should not be in the field without the 2.4 mm sized band.
- Only individuals who are named on the ODNR-DOW endangered species letter portion of the permit and on the corresponding federal bat permit may conduct and oversee mist-net surveys. Trained assistants may work on permitted bat activities under the direct and on-site supervision of a named permittee. All bat IDs must be verified by a named permittee. If an Indiana bat and/or northern long-eared bat is captured, the permittee shall notify the USFWS and the ODNR-DOW Bat Survey Coordinator referenced above within 48 hours via email. If a little brown bat or tricolored bat is captured, notify the ODNR-DOW Bat Survey Coordinator only within 48 hours via email. Reports of listed bat captures should include specific information such as spatial location of capture, band information, radio-transmitter frequency information, sex, reproductive status, and age of individual.
- For presence/absence surveys, ODNR-DOW requires all female and juvenile state endangered and threatened bat species (Indiana, northern long-eared, little brown, and tricolored bat) be radio-tracked if

caught, in accordance with methods outlined in Appendix D of USFWS 2022 Range-wide Indiana Bat Summer Survey Guidelines.

- If you are taking any biological samples (tissue, fur, blood, etc.), this must be specifically authorized in your state and federal permits and noted in your survey proposal.

After Field Season:

By March 15, you must submit your final ODNR-DOW report(s) from the previous summer. You are not required to fill out the ODNR-DOW Wildlife Diversity Bat Excel Spreadsheet; instead, please forward your USFWS Midwestern US Spreadsheet (found here: <https://www.fws.gov/media/bat-reporting-spreadsheets-2020-2021>) to the ODNR-DOW Bat Survey Coordinator and ODNR-DOW Permit Coordinator and include your state permit number along with an electronic copy of the project report. Electronic summaries emailed during the field season are NOT considered as full compliance of this reporting requirement.

Ohio Environmental Review Recommendations for projects involving disturbance near potential/known bat hibernacula (cliffs, caves, mines) or tree cutting:

Step 1: Coordinate with Ohio Division of Wildlife (DOW) regarding existing records for state-listed endangered bat summer and/or winter occurrence information. Potential hibernacula found during a habitat assessment must address possible suitability for Indiana bats, northern long-eared bats, tricolored bats, and little brown bats.

If project site contains a known bat hibernaculum(a) –

- For state-listed endangered species other than the Indiana bat and northern long-eared bat, a recommendation of 0.25-mile tree cutting buffer around all known entrances to protect existing conditions at the hibernaculum(a). The U.S. Fish and Wildlife Service (USFWS) should be contacted for guidance on projects occurring within 5 miles of known or potential Indiana bat and/or northern long-eared bat hibernacula. If the project involves subsurface disturbance, consultation with DOW is required.
- Limited tree cutting may be permitted within the buffer. Coordinate with DOW.

If a project site does not contain known bat hibernaculum(a)

- Conduct a desktop habitat assessment of the project area. Tools such as the [ODNR Mines of Ohio Viewer](#), [Karst Interactive Map](#), topographic maps, aerial photos, historical records, etc. should be used to determine if there are any potential caves, mines, karst features, rock ledges, or other features that may serve as potential hibernacula.

- If no such features are found, proceed to Step 2.

- If potential hibernacula are found during the desktop assessment:

- Assume bats are using these hibernacula and refrain from clearing trees from March 15-November 15

-Or-

- Conduct a field habitat assessment to determine if a potential hibernaculum(a) is present within the action area. We encourage impacts to ledges and rock outcroppings be avoided. If impacts cannot be avoided, features should be evaluated for potential roosting characteristics such as recesses, overhangs, and crevices.

- **NOTE:** The USFWS Range-wide Indiana Bat Guidelines, Appendix H, contains instructions for completing a habitat assessment, but only includes criteria for Indiana bat hibernacula.

Step 2: When conducted, a presence/absence survey must follow current DOW guidelines.

Step 3: If a state-listed endangered bat is captured or recorded during the survey:

- Recommendation of no summer tree cutting, or limited cutting following guidelines detailed below, within 5 miles (or 2.5 miles for tricolored bats) of the capture site if a roost is not located.
- Recommendation of no summer tree cutting, or limited cutting following guidelines detailed below, within 2.5 miles of a roost tree if located.

If no state-listed endangered bat is captured or recorded during the survey:

- Summer tree cutting may proceed for 5 years before a new survey is needed under state guidance.

Limited summer tree cutting guidance for bats that are only state-listed endangered: Limited tree cutting in summer may be permitted after consultation with DOW, but clearing trees with the following characteristics should be avoided unless they pose a hazard: dead or live trees of any size with loose, shaggy bark; crevices, holes, or cavities; clusters of dead leaves; live trees of any species with DBH $\geq 20''$.

FREQUENTLY ASKED QUESTIONS

When does the ODNR-DOW Bat Survey protocol have to be used?

This protocol should be used anytime Indiana bat, northern long-eared bat, little brown bat, or tricolored bat summer presence/probable absence surveys are conducted in the state of Ohio.

How many detector nights are required for presence/probable absence acoustic surveys?

As described in the current USFWS Range-wide Indiana Bat and Northern Long-eared Bat Summer Survey Guidelines:

Level of effort for all state-listed endangered bat species including Indiana bat and northern long-eared bats: Follow maximum detector nights as outlined in the federal guidance (for northern long-eared bat).

Northern Long-eared Bat Level of Effort:

Linear projects: a minimum of 4 detector nights per km (0.6 miles) of suitable summer habitat

Non-linear projects: a minimum of 14 detector nights per 123 acres (0.5 km²) of suitable summer habitat.

At least 2 detector locations per 123 acre "site" shall be sampled until at least 8 detector nights has been completed over the course of at least 2 calendar nights (may be consecutive). For example:

- 4 detectors for 3 nights and 1 detector for 2 nights each (can sample the same location or move within the site)
- 2 detectors for 7 nights each (can sample the same location or move within the site)
- 1 detector for 14 nights (must sample at least 2 locations and move within the site – we recommend evenly distributing LOE among locations)

Indiana Bat Level of Effort:

Linear projects: a minimum of 4 detector nights per km (0.6 miles) of suitable summer habitat

Non-linear projects: a minimum of 10 detector nights per 123 acres (0.5 km²) of suitable summer habitat.

At least 2 detector locations per 123 acre "site" shall be sampled until at least 8 detector nights has been completed over the course of at least 2 calendar nights (may be consecutive). For example:

- 5 detectors for 2 nights each (can sample the same location or move within the site)
- 2 detectors for 5 nights each (can sample the same location or move within the site)
- 1 detector for 10 nights (must sample at least 2 locations and move within the site – we recommend evenly distributing LOE among locations)

How many net surveys are required for presence/probable absence?

Level of effort for all state-listed endangered bat species including Indiana bat and northern long-eared bats: Follow maximum net nights as outlined in the federal guidance (for northern long-eared bat).

Net surveys for northern long-eared bat presence/probable absence shall incorporate, at a minimum, either 10 net nights per square 0.5 kilometer (123 acres) of project area, or four net nights per kilometer for linear projects. For linear projects, there must be at least one net night of survey on two different nights (minimum of two nights). This does not allow for two net nights on a single night for surveys.

Net surveys for Indiana bat presence/probable absence shall incorporate, at a minimum, either six net nights net nights per square 0.5 kilometer (123 acres) of project area, or two net nights per kilometer for linear projects. For linear projects, there must be at least one net night of survey on two different nights (minimum of two nights). This

does not allow for two net nights on a single night for surveys.

How long are the results of the surveys valid for an assessment of an area?

Mist-net or acoustic surveys documenting probable absence of state-listed endangered bats are valid for five years.

When can acoustic or net surveys occur in Ohio?

In Ohio, acoustic or net surveys may only be conducted from June 1 through August 15 unless indicated otherwise in your state permit. Any surveys outside of the June 1 - August 15 timeframe cannot be used in Ohio to assess the presence/probable absence of state-listed bats.

Can a presence/probable absence survey be conducted within a known Indiana bat and/or northern long-eared bat capture/detection buffer?

Surveys generally cannot be used to document presence/probable absence of state-listed endangered bats where presence of the species has already been confirmed by prior surveys.

What if a project is proposing to clear trees between April 1 and September 30 when bats may be present but no bat records exist in the project area?

Any Ohio project that is not within a known bat record buffer, and tree clearing between April 1 and September 31 is being proposed, may have a presence/probable absence survey conducted between June 1 and August 15 following the range-wide guidance. If a presence/probable absence survey is not performed, presence of listed bats is assumed.

How does take of northern long-eared bats differ from Indiana bats?

Under Ohio law, there is no exemption for take of any listed bat species.

Where do I get bands?

If you need bands, email the ODNR-DOW Bat Survey Coordinator at least two weeks in advance with your current ODNR permit number, how many bands in each size (2.4 and 4.2 mm) you will need this season, and a current address to ship the bands.

Do I have to band every bat?

No, currently this is optional. However, you are required as per your state permit to band all Indiana, northern long-eared, little brown, and tricolored bats.