AMERICAN TRANSMISSION SYSTEMS, INCORPORATED A FIRSTENERGY COMPANY

LETTER OF NOTIFICATION

PERRY-ASHTABULA-ERIE WEST 345 kV TRANSMISSION LINE REBUILD AND ASHTABULA SUBSTATION EXPANSION PROJECT

OPSB CASE NO.: 19-1939-EL-BLN

November 26, 2019

LETTER OF NOTIFICATION PERRY-ASHTABULA-ERIE WEST 345 KV TRANSMISSION LINE REBUILD AND ASHTABULA SUBSTATION EXPANSION PROJECT

The following information is being provided in accordance with the requirements in the Ohio Administrative Code (OAC) Chapter 4906-6 for the review of Accelerated Certificate Applications. Based upon the requirements found in Appendix A to OAC Rule 4906-1-01, this Project qualifies for Submittal to the Ohio Power Siting Board ("OPSB") as a Letter of Notification application.

4906-6-05: ACCELERATED APPLICATION REQUIREMENTS

4906-6-05: Name and Reference Number

Name of Project:Perry-Ashtabula-Erie West 345 kV Transmission Line
Rebuild and Ashtabula Substation Expansion Project
("Project")

4906-6-05 (B)(1): Brief Description of Project

American Transmission Systems, Incorporated ("ATSI"), a FirstEnergy company, proposes the first phase of a two-phase project that will eliminate a 3-terminal line and convert an existing substation into a 6-breaker ring bus. This Project includes:

- The installation of an approximately 700-foot-long temporary transmission line bypass to keep the 345 kV transmission line from Perry Substation to Erie West Substation energized during the below-referenced rebuild.
- The rebuilding of the existing 1.3-mile-long Perry-Ashtabula-Erie West 345 kV Transmission Line Tap to Ashtabula 345 kV Substation and converting the transmission line from a tap configuration into a 345 kV double-circuit transmission line ultimately creating the Ashtabula-Perry 345 kV and Ashtabula-Erie West 345 kV Transmission Lines. Once the rebuild is complete, the east circuit (future Ashtabula-Erie West 345 kV Transmission Line) will be

energized. The bypass will stay in place to maintain a 3-terminal connection until the second phase is complete.

The expansion of the existing Ashtabula 345 kV Substation by an additional 2.22 acres to facilitate the installation of new equipment to convert the existing substation to a 6-breaker ring bus and adding a second 345/138 kV transformer. The additional area needed represents a 74.8 percent expansion of the substation.

The second phase of the work will be the subject of a separate filing in 2020 and will include:

- The reconductoring/rebuilding the Ashtabula-Leroy Center Q1, Q2, and Q4
 138 kV Transmission Lines and a portion of the Ashtabula-Leroy Center Q3
 138 kV Transmission Line (from Ashtabula Substation to Stacy Substation).
- The removal of the temporary by-pass which will split the line creating the Ashtabula-Perry 345 kV and Ashtabula-Erie West 345 kV Transmission Lines.

The Project includes the installation of an approximately 700-foot-long temporary transmission line bypass on four (4) multi-pole wood structures between the existing Perry-Ashtabula-Erie West 345 kV Transmission Line structures, in the existing west-east transmission corridor. This temporary bypass will keep the 345 kV transmission line from Perry Substation to Erie West Substation energized during the rebuild and maintain a 3-terminal connection at the Ashtabula 345 kV Substation. The transmission line bypass will be removed at the completion of the second phase of the project.

The transmission line portion of the proposed Project will include rebuilding of the existing Perry-Ashtabula-Erie West 345 kV Transmission Line Tap to Ashtabula 345 kV Substation and converting this tap into a 345 kV Loop. Eight (8) existing single circuit lattice towers will be replaced with double-circuit steel monopole structures on drilled foundations in approximately the same locations as the existing structures. In

addition, one (1) existing wood H-frame structure will be removed, one (1) new singlecircuit steel monopole structure on drilled foundation will be installed at the north end of the Project to support connecting the new Ashtabula-Erie West 345 kV Transmission Line to the Ashtabula Substation, and one (1) additional double-circuit steel monopole structure on drilled foundation will be installed at the south end of the Project to support converting the existing tap to a loop configuration.

Finally, the substation portion of the proposed Project will expand the existing Ashtabula 345 kV Substation by an additional 2.22 acres to facilitate the installation of new equipment in the substation for a six (6) breaker ring bus. This represents a 74.8 percent expansion of the substation. To accommodate the addition of this new expansion area, approximately 1025 linear feet of additional fence will be installed.

The Project is located in Ashtabula Township, Ashtabula County, Ohio.

The general location of the proposed Project is shown in Exhibits 1 and 2. Exhibit 1 is a partial copy of the United States Geologic Survey, Ashtabula County, Ohio, Quad Maps. Exhibit 2 provides a partial copy of ESRI aerial imagery. The general layout of the proposed Project, along with the construction footprint, are shown in Exhibit 3.

4906-6-05 (B)(1): Letter of Notification Requirements

The Project falls within Item (2)(a) and Item (4)(b) of the Application Requirement Matrix for Electric Power Transmission Lines, in Appendix A of OAC Rule 4906-1-01. These sections state that an applicant may use the Letter of Notification application process if the Project is for:

(2) Adding new circuits on existing structures designed for multiple circuit use, replacing conductors on existing structures with larger or bundled conductors, adding structures to an existing transmission line, or replacing structures with a different type of structures, for a distance of:

(a)Two miles or less.

American Transmission System, Incorporated 3 A FirstEnergy company (4) Constructing additions to existing electric power transmission stations or converting distribution stations to transmission stations where:

(b) There is a greater than twenty percent expansion of the fenced area.

This Project meets requirement (2)(a) because it involves adding new circuits on existing structures and replacing structures with a different type of structures for approximately 1.3 miles. This Project also meets requirement (4)(b) because the existing Ashtabula 345 kV Substation will be expanded by approximately 96,705 square feet to a total post-Project size of 225,650 square feet. This represents an approximate 74.8 percent increase in the footprint of the substation.

4906-6-05 (B)(2): Need for the Project

ATSI needs to remove the three-terminal line connection on the Perry-Ashtabula-Erie West 345 kV line. This will be accomplished by expanding the existing Ashtabula 345 kV Substation, rebuilding the existing 345 kV transmission line tap to a double circuit 345 kV transmission line, and reconductoring/rebuilding the Ashtabula–Leroy Center Q1, Q2, and Q4 138 kV Transmission Lines and a portion of the Ashtabula–Leroy Center Q3 138 kV Transmission Line (from Ashtabula Substation to Stacy Substation) in Ashtabula, Ohio. Due to restrictions on construction, outage schedules, and the need to minimize service disruptions, the improvements required to complete the removal of the three terminal connection cannot be completed in a single project and must be broken into two phases:

- Eliminate the three terminal 345 kV transmission line configuration at Ashtabula Substation.
- 2. Reconductor/Rebuild the Ashtabula-Leroy Center 138 kV Transmission Lines.

This application is for the first of these two interrelated projects.

A three terminal line configuration is when there exists three independent line exits from different substations that support system network power flows and connect at a common node on the system. The most common line configuration on the Bulk Electric System would be a two terminal line which has a single line that terminates at two independent substations. Three terminal line configurations increase the complexity of the line protection due to the fault current flow from a third terminal affecting the voltage and current present at the other two terminals. Three-terminal line configurations are considered sub-optimal and are not consistent with current transmission system standards of operation or ATSI's internal engineering standards. Generally, eliminating three terminal line configurations improves reliability by simplifying the Transmission Protection scheme, improving relay coordination and reducing the likelihood of misoperations. Furthermore, the three terminal line elimination will reduce the mileage of transmission line exposure, and in this case, provide for additional resiliency and operational flexibility with two 345 kV sources into the Ashtabula 345/138 kV substation which further supports and strengthens the 138 kV system.

In order to eliminate the three terminal line configuration in this case, ATSI will need to improve multiple elements of the electrical system in the project area broken into two phases. The first phase improvements include: (1) rebuilding the existing 345 kV line tap to a double circuit 345 kV transmission line loop/network line; (2) expanding the Ashtabula Substation into a six breaker 345 kV ring bus; and (3) adding a second 345/138 kV transformer to the Ashtabula Substation. The second phase improvements include: (1) reconductoring/rebuilding the thermally overloaded and aged copper conductor on the Ashtabula-Leroy Center Q1, Q2, and Q4 138 kV Transmission Lines and (2) the reconductoring/rebuilding a portion of the Ashtabula-Leroy Center Q3 138 kV Transmission Line.

The Ashtabula Substation expansion to a 345 kV ring bus will allow the existing threeterminal line to be removed. With the rebuild of the existing 345 kV transmission line to a double circuit looped configuration, the substation expansion is required to provide the terminal end connections to loop/network the rebuilt Perry-Ashtabula-Erie West 345 kV Transmission Line and provide additional connections for two 345/138 kV transformers (one existing and one new transformer). At the completion of both phases of the project, the new line names will be the Ashtabula–Perry and Ashtabula–Erie West 345 kV Transmission Lines.

Although the primary benefit of the Project is to improve system protection and coordination, system reliability, operating flexibility, and system resiliency by removing the three-terminal configuration, the substation expansion also supports future load growth in the area for new and existing customers. The proposed project creates two 345 kV sources and transformation at the substation which strengthens 138 kV system short circuit for industrial customer equipment operation, improves system power quality, and improves the overall system protection coordination, reliability, resiliency, and operational flexibility for system restoration and maintenance. The ability to support future load growth in the immediate Project area is supported by ATSI's planning for a new industrial load of 96 MWs (the Project solution was presented to PJM during the western sub-regional RTEP meeting on July 24, 2019) that will need transmission service from the Ashtabula 138 kV Substation and the added system support from this Project.

The construction of the second phase of the overall project, the reconductoring of the Ashtabula-Leroy Center Q1, Q2, and Q4 138 kV Transmission Lines and a portion of the Ashtabula-Leroy Center Q3 138 kV Transmission Line is necessary due to significant overloads (ranging from 100.4% to 147.5%) on all four Ashtabula-Leroy Center 138 kV Transmission Lines with the 345 kV system reconfiguration as identified by FirstEnergy and PJM. This reconductoring represents a significant planning challenge because of restrictions on construction, outage schedules, and the need to minimize service disruptions. The reconductoring of the Ashtabula–Leroy Center 138 kV Transmission Lines may need to include structure(s) replacement depending on a complete structural analysis to determine the final overall scope of work (analysis is to be completed at the beginning of 2020). A complete structural analysis

based on FirstEnergy's design criteria is required to determine if the existing physical structures and their components are able to handle the new loading after reconductoring. Due to the number of circuits, the overall miles of reconductoring, outage coordination, and the need to avoid significant service disruptions, the reconductoring cannot be completed at the same time as the first phase of this project. Consequently, until the reconductoring/ rebuilding work can be completed for the Ashtabula-Leroy Center Q1, Q2, Q3 and Q4 138 kV Transmission Lines, a temporary bypass configuration will be utilized at the existing three terminal line point to facilitate the 345 kV transmission line rebuild and maintain the continuity of the existing three-terminal line by energizing only one of the new double circuit 345 kV lines until the second phase (reconductoring) is complete.

The Perry-Ashtabula-Erie West 345 kV Three-Terminal Line Elimination Project was presented to PJM during the PJM TEAC meeting on March 7, 2019; a Supplemental RTEP number will be provided once assigned by PJM. The scheduled in-service date for this Project (phase one) is December 31, 2020.

4906-6-05 (B)(3): Location of the Project Relative to Existing or Proposed Lines

The location of the Project relative to existing or proposed lines is shown in the ATSI Transmission Network Map, included as part of the confidential portion of the FirstEnergy Corp 2019 Long Term Forecast Report. This map was submitted to the PUCO in Case No. 19-0806-EL-FOR under OAC Rule 4901:5-5:04 (C). This map is incorporated by reference only. This map shows ATSI's 345 kV and 138 kV transmission lines and transmission substations including the Ashtabula Substation and the Perry-Ashtabula-Erie West 345 kV Transmission Line. The Project area is located approximately 1 ¹/₂ inches (11" X 17" printed version) from the right edge of the map and ¹/₂ inches (11" X 17" printed version) from the project layout is shown in Exhibit 3.

4906-6-05 (B)(4): Alternatives Considered

There were no practical alternatives for the three-terminal elimination project and therefore none were considered. If no action is taken, the possibility of the simultaneous outage of three or more elements on the system would remain as well as the risk of system misoperations, longer system restoration times, and a limited ability to provide the required transmission service to existing and future customers.

4906-6-05 (B)(5): Public Information Program

ATSI will issue a public notice in a newspaper of general circulation in the Project area within 7 days of filing this Letter of Notification application. The notice will comply with OAC Rules 4906-6-08(A) (1) through (6). In addition to the public notice, ATSI will mail letters explaining the Project to affected landowners and tenants within and contiguous to the planned expansion area. ATSI has also established a project website: <u>https://www.firstenergycorp.com/about/transmission_projects/ohio.html</u>.

ATSI's manager of External Affairs will advise local officials of features and the status of the proposed Project as necessary.

Finally, during all phases of this Project, ATSI will maintain the transmission projects hotline at 1-800-589-2873 or via email at: <u>transmissionprojects@firstenergycorp.com</u> where the public may ask questions or leave comments on the Project for ATSI.

4906-6-05 (B)(6): Construction Schedule

Construction for the substation expansion is anticipated to begin on February 3, 2020. The proposed in-service date for the Project is December 31, 2020.

4906-6-05 (B)(7): Area Map

Exhibit 1 and 2 depict the general location of the Project. Exhibit 1 provides a partial copy of the United States Geologic Survey, Ashtabula County, Ohio, Quad Map. Exhibit 2 provides a partial copy of ESRI aerial imagery.

4906-6-05 (B)(8): Property Owner List

The Project is located on new and existing right-of-way. The property information for this Project is listed below in Table 1 and was obtained through the Ashtabula County Auditor's website.

Parcel Number	Property Owner	Property Address	Easement Status
03-000-00-140-00	FirstEnergy Generation	2133 Lake SR 531 E. Rd Ashtabula OH 44004	Will be Obtained
03-000-00-140-02 03-000-00-140-03 03-000-00-183-00 03-000-00-182-00 03-000-00-180-00 03-000-00-181-00 03-000-00-177-00 03-000-00-175-00 03-000-00-154-00 03-000-00-153-00	Illuminating Company	2133 Lake SR 531 E. Rd, Ashtabula OH 44004	Owned in Fee
03-000-00-195-00	New York Central Lines & LLC	Ashtabula OH 44004	Previously Obtained
03-052-00-005-00	Sure Fire Group LLC	North Ridge USR 20 Rd, Ashtabula OH 44004	Will be Obtained

Table 1. List of Affected Property Owners

4906-6-05 (B) (9): TECHNICAL FEATURES OF THE PROJECT

4906-6-05 (B)(9)(a): Operating Characteristics

The equipment and facilities described below will be located within the expanded

fenced area of the Ashtabula 345 kV Substation.

345/138 kV Transformer – (1) 345-kV Gas Circuit Breaker – (6) 345-kV Capacitive Voltage Transformer ("CCVT") – (12) 345-kV Wave Trap - (2) 345-kV Switches – (14) Control Enclosure (58' x 28') with Twenty New Relay Panels – (1) Firewall – (2) 138-kV Gas Circuit Breaker – (1) 138-kV Gas Circuit Breaker – (1) 138-kV Switch – (1) 138-kV Switch – (1)

American Transmission System, Incorporated 9 A FirstEnergy company The equipment and facilities described below are associated with the rebuild of the Perry-Ashtabula-Erie West 345 kV Transmission Line Tap into a double-circuit.

Voltage:	345 kV
Conductors:	954 kcmil 48/7 ACSR (bundle)
Static Wire:	7#8 Alumoweld and OPGW
Insulators:	Porcelain/Glass Suspension
ROW Width:	150 feet
Structure Types:	DC Tangent Steel Monopole (Exhibit 4) – (6) required DC DE Steel Monopole (Exhibit 5) – (3) required SC DE Steel Monopole (Exhibit 6) – (1) required Temporary 2-Pole Wood – (1) required Temporary 3-Pole Wood – (3) required

4906-6-05 (B)(9)(b): Calculated Electric and Magnetic Field

As no part of the expanded substation as well as the transmission line centerline is within 100 feet of an occupied residence or institution, Electric and Magnetic Field ("EMF") calculations have not been made.

4906-6-05 (B)(9)(c): Estimated Cost

The estimated capital cost for Project is approximately \$26,000,000 to be paid by ATSI.

4906-6-05 (B)(10): SOCIAL AND ECOLOGICAL IMPACTS

4906-6-05 (B)(10)(a): Land Uses

The Project is located in Ashtabula Township, Ashtabula County Ohio. Based on the US Bureau of Census estimates the 2018 population of Ashtabula Township was 20,131 and the 2018 population of Ashtabula County was 97,493.

The Project area is in a heavy manufacturing district. As the proposed Project only involves the expansion of an existing substation, addition of a second circuit, and replacing existing structures within the existing transmission corridor, no changes or impacts to the current land use are anticipated.

4906-6-05 (B)(10)(b): Agricultural Land

Agricultural district land does not exist within the Project footprint.

4906-6-05 (B)(10)(c): Archaeological or Cultural Resources

A search of Ohio Historic Preservation Office's ("OHPO") National Register of Historic Places ("NRHP") online database was conducted to identify the existence of any significant archaeological or cultural resource sites within 0.5 mile of the Project area. A map of the results of the search is shown in Exhibit 7. The OHPO database includes all Ohio listings on the NRHP, including districts, sites, buildings, structures, and objects that are significant in American history, architecture, archaeology, engineering, and culture.

The results of the search indicate that there are no Listed NRHP properties and no OHPO eligible properties identified within 0.5 mile of the Project's potential disturbance area.

The OHPO database also includes listing of the Ohio Archaeological Inventory ("OAI"), the Ohio Historic Inventory ("OHI"), previous cultural resource surveys, and the Ohio Genealogical Society ("OGS") cemetery inventory. No OAI listed archeological resources have been previously inventoried within 0.5 mile of the Project area. Three (3) OHI listed structural resources are located within 0.5 mile of the Project area and are shown in Table 2.

OHI Number	Present Name	Historic Use	County	Municipality
ATB0025203	Ashtabula Generating Plant AB	Energy Facility	Ashtabula	Ashtabula Twp.
ATB0025303	Ashtabula C Generating Plant	Energy Facility	Ashtabula	Ashtabula Twp.
ATB0026403	Lakeshore Park Pavilion	N/A	Ashtabula	Ashtabula Twp.

 Table 2. List of OHI Listed Structural Resources

No previous archaeological resource surveys were conducted within 0.5 mile of the Project area. There are no OAI sites located within 0.5 mile of the Project's potential disturbance area. No OSG cemeteries are located within 0.5 mile of the Project area.

As proposed, the Project involves expansion of the substation fence within previously disturbed area as well as addition of a second circuit and replacing existing structures within the existing corridor, no changes or impacts to archaeological and cultural resources are anticipated.

4906-6-05 (B)(10)(d): Local, State and Federal Government Requirements

The Project will require the development of a Storm Water Pollution Prevention Plan because planned earthwork will include the disturbance of more than 1 acre. This plan will be developed in accordance with the Ohio Environmental Protection Agency (OEPA) National Pollution Discharge Elimination System (NPDES) General Permit OCH000004 – Stormwater Discharges Associated with Construction Activity (General Permit). Submittal of a Notice of Intent (NOI) to the OEPA is required for coverage under the General Permit. Consultation with appropriate county officials will be conducted if warranted during the development of the SWPPP to ensure compliance with any county regulations.

Temporary impacts to wetlands and streams have been minimized to the maximum extent practicable. Permanent impacts to delineated wetlands as a result of structure placement will not exceed thresholds that would require pre-construction authorization from the U.S. Army Corps of Engineers. No delineated wetlands or streams will be permanently impacted by construction activities. Therefore, the Project will not require pre-construction authorization pursuant to Section 404 of the Clean Water Act or a Section 401 Water Quality Certification from the OEPA. There are no additional known local, state, or federal requirements that must be met prior to commencement of construction on the Project.

Table 3 shows the list of government agency requirements and the application status at the time of filing.

Agency	Permit Requirement	Status
Ohio Environmental Protection Agency (OEPA)	General NPDES Construction Storm Water Permit	Will Be Filed
Ashtabula County, Ohio, Soil and Water Conservation District, and Ashtabula Township	Storm Water Pollution Prevention Plan (SWP3) – Review Application	Will Be Filed if required

 Table 3. List of Government Agency Requirements to be Secured Prior to Construction

4906-6-05 (B)(10)(e): Endangered, Threatened, and Rare Species Investigation

As part of the investigation, a request was submitted to the Ohio Department of Natural Resources-Division of Wildlife ("ONDR") to research the presence of any endangered, threatened, or rare species within the Project area. The ODNR response received on December 19, 2018, is attached as Exhibit 8.

The ODNR response indicated that the Project is within the range of the federally and state endangered Indiana Bat (*Myotis sodalis*).

The ONDR's response also indicated records of the following aquatic species within one mile of the Project area:

- Great lakes crayfish (Orconectes propinquus) state species of concern.
- Channel Darter (Percina copelandi) state threatened fish.
- Clubshell (*Pleurobema clava*) state endangered and federally endangered mussel.
- Snuffbox (*Epioblasma triquetra*) state endangered and federally endangered mussel.
- Black Sandshell (*Ligumia recta*) state threatened mussel.
- Northern brook lamprey (Ichtyomyzon fossor) state endangered fish.

The ODNR comments indicate that the Project is not likely to impact these species due to location, and that no in-water work is proposed in a perennial stream.

The ONDR's response also indicated records of the following species within one mile of the Project area:

- Easterm massasauga *(Sistrurus catinatus)* state endangered species and a federally threatened snake species.
- Smooth greensnake (Opheodrys vernalis) state endangered species.
- Spotted Turtle (*Clemmys guttata*) state threatened species.

The ODNR comments indicate that this Project is not likely to impact these species due to location, the type of habitat at the Project site and surrounding area, and the type of work proposed,

The ONDR's response also indicated records of the following bird species within one mile of the Project area:

- Northern harrier (Circus cyaneus) state endangered bird.
- Upland Sandpiper (*Bartramia longicauda*) state endangered bird.

The ODNR's comments indicate that the Project is not likely to impact these species due to location, the type of habitat at the Project site, and the type of work proposed.

The ODNR's response also indicated that the Project area is within the range of the Kirtland's Warbler *(Setophaga kirtlandii)* state endangered bird¹ and the Piping Plover *(Charadrius melodus)*, a state endangered and federally endangered bird. These species do not nest in the state but do utilize stopover habitat as they migrate through the region. ODNR indicated that since no tree removal was proposed, the Project is not likely to impact these species. However, it has since been determined that some tree clearing will be required to facilitate the Project within the vicinity of structure 13009. This tree clearing will occur in February 2020. As the Piping Plover migrates in March² and Kirtland's Warbler in early Spring³, the Project is not anticipated to negatively affect these species.

As part of the investigation, a request for comments was submitted to the United States Fish and Wildlife Services ("USFWS"). The USFWS's November 1, 2018 response is attached as Exhibit 9.

The USFWS response indicates that due to the Project type, size and location there are no adverse effects anticipated to federally endangered, threatened, proposed, or candidate species.

¹ Kirtland's Warbler federally delisted as of October 2019.

https://www.fws.gov/Midwest/endangered/birds/Kirtland/index.html

² <u>https://www.fws.gov/plover/facts.html</u>

³ <u>https://www.fws.gov/verobeach/MSRPPDFs/Kirtlandswarbler.pdf</u>

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4906-6-05 (B)(10)(f): Areas of Ecological Concern

As part of its investigation, requests were submitted to the ONDR and USFWS to research the presence of any unique ecological sites, geological features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forest, national wildlife refuges, or other protected natural areas within one mile of the Project area.

The ODNR's December 19, 2018 response, attached as Exhibit 8 indicated that there is one (1) area of ecological concern. The area of ecological concern is the Ashtabula State Scenic River. The Project area is approximately 1.4 miles away from the nearest part of Ashtabula River; therefore, the Project will have no effect on the Ashtabula River.

The USFWS's response on November 1, 2018, attached as Exhibit 9, indicated that there are no records of any areas of ecological concern within one (1) mile of the proposed Project area.

As part of the investigation, ATSI hired Jacobs Engineering Group, Inc. ("Jacobs")to conduct a wetland and stream assessment of the Project area. The Jacobs investigation focused on an approximately 121-acre study area around the proposed Project centerline, access roads, substation expansion area and additional workspace areas.

During the study, Jacobs identified 10 PEM Category 1 wetlands, 1 PEM/POW Category 1 wetland, and 1 PEM Category 2 wetland totaling approximately 27.83 acres delineated within the study area. Three streams identified within the Project survey corridor including two perennial streams and one ephemeral stream. A map of the delineated wetland and streams is shown in Appendix A.

Wetland ID	Locat	tion	Wetland	A man (n n)2	ORAM Score/Category	
	Latitude	Longitude	Type ¹	Area (ac)-		
Wetland AEWP-01	41.906100	-80.767900	PEM	0.85	19 / Category 1	
Wetland AEWP-02	41.900100	-80.764100	PEM	0.93	25 / Category 1	
Wetland AEWP-03	41.896700	-80.762900	PEM	8.73	25 / Category 1	
Wetland AEWP-04	41.891300	-80.760000	PEM	4.53	33.5 / Category 2	

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	Loca	tion	Wetland	A ()2	ORAM Score/Category		
wetland ID	Latitude	Longitude	Type ¹	Area (ac)-			
Wetland AEWP-05	41.890100	-80.758800	PEM	1.64	13.5 / Category 1		
Wetland AEWP-06	41.885900	-80.759900	PEM	9.11	24.5 / Category 1		
Wetland AEWP-07a	41.905000	-80.767600	PEM	0.31	28.5/ Category 1		
Wetland AEWP-07b	41.905000	-80.768400	POW	0.22	28.5/ Category 1		
Wetland AEWP-08	41.901700	-80.766600	PEM	0.05	13.5/ Category 1		
Wetland AEWP-09	41.905200	-80.769100	PEM	0.25	12/ Category 1		
Wetland AEWP-10	41.905600	-80.769400	PEM	0.14	9.5/ Category 1		
Wetland AEWP-11	41.906100	-80.770100	PEM	0.18	11.5/ Category 1		
Wetland AEWP-12	41.905300	-80.771300	PEM	0.89	11.5/ Category 1		
WETLAND ACREAGE WITHIN STUDY AREA 27.83							
¹ Cowardin et al. 1979. ² This acreage only corres	ponds to the area c	delineated within I	the environmer	ntal survey area	I.		

Star on D	Maaada da Namal	Loc	ation	Flow Regime ²	
Stream ID	waterbody Name.	Latitude	Longitude		
Stream AEWP-01	UNT to Fields Brook	41.892900	-80.761100	Perennial	
Stream AEWP-02	Fields Brook	41.893500	-80.761200	Perennial	
Stream AEWP-03	UNT to Fields Brook	41.886800	-80.759900	Ephemeral	
¹ UNT = unnamed tribute	ary.		•		
² Flow regime is defined	as perennial, intermitten	t, or ephemeral. T	This determination	was interpreted using	
field abcomunitions and I	ICC Champer and the many of				

Table 4-2: Detailed Delineated Stream Table

field observations and USGS topographic maps as appropriate.

Structure placement has been designed to minimize permanent wetland impacts to the maximum extent practicable. A construction access plan has been developed to avoid or minimize the temporary disturbance of jurisdictional wetland and streams to the maximum extent practicable by utilizing existing access routes throughout the Project area. If any streams or wetlands must be crossed during construction, appropriate Best Management Practices ("BMPs") such as temporary bridging with construction matting, will be implemented to avoid impacts. All construction activities will be implemented in accordance with all relevant construction storm water permit requirements. All applicable permits will be secured before construction.

4906-6-05(B)(10)(g): Other Information

Construction and operation of the proposed Project will be in accordance with the requirements specified in the latest revision of the National Electrical Safety Code as adopted by the PUCO and will meet all applicable safety standards established by the Occupational Safety and Health Administration.

No other or unusual conditions are expected that will result in significant environmental, social, health or safety impacts.

4906-6-07: Documentation of Letter of Notification Application Transmittal and Availability for Public Review

This Letter of Notification application is being provided concurrently to the following officials of Ashtabula Township and Ashtabula County, Ohio.

Ashtabula County

Ms. Kathryn L. Wittington, Board President Ashtabula Co. Commissioners 25 West Jefferson Street 2nd Floor Old Courthouse Jefferson, OH 44047

Mr. J. P. Ducro IV, Board Vice-President Ashtabula Co. Commissioners 25 West Jefferson Street 2nd Floor Old Courthouse Jefferson, OH 44047

Mr. Casey R. Kozlowskyi Ashtabula County Commissioner 25 West Jefferson Street 2nd Floor Old Courthouse Jefferson, OH 44047

Ashtabula Township

Mr. Steve McClure, Chairman Trustee, Ashtabula Township 2718 North Ridge Road East Ashtabula, OH 44004

Ms. Bambi Paulchel, Vice-Chairman Trustee, Ashtabula Township 2718 North Ridge Road East Ashtabula, OH 44004

American Transmission System, Incorporated 17 A FirstEnergy company Ms. Janet Discher, Ashtabula County Administrator Ashtabula Co. Commissioners 25 West Jefferson Street 2nd Floor Old Courthouse Jefferson, OH 44047

Ms. Janice Switzer, Director Ashtabula County Planning Commission 25 West Jefferson Street 1st Floor Old Courthouse Jefferson, OH 44047

Mr. Tim Martin, P.E., P.S. Ashtabula County Engineer 186 East Satin Street Courthouse Jefferson, OH 44047

Mr. Joseph J. Pete Trustee, Ashtabula Township 2718 North Ridge Road East Ashtabula, OH 44004

Mr. Robert S. Dille Fiscal Officer, Trustee, Ashtabula Township 2718 North Ridge Road East Ashtabula, OH 44004

> Perry-Ashtabula-Erie West 345 kV Transmission Line Rebuild and Ashtabula Substation Expansion Project

<u>Libraries</u> Mr. Joe Zappitello, Director Harbor-Topky Memorial Library 1633 Walnut Boulevard Ashtabula, OH 44004

Mr. William J. Tokarczyk, Director Ashtabula County District Library 4335 Park Avenue, Ashtabula, OH 44004

Copies of the transmittal letters to these officials have been included with the transmittal letter submitting this Letter of Notification application to the Ohio Power Sitting Board and are being provided to meet the requirement of OAC Rule 4906-6-07 (B) to submit proof of compliance with the notice requirement to local officials found in OAC Rule 4906-6-07 (A)(1).

Information concerning this Letter of Notification application is also posted at the link below and describes how to request an electronic or paper copy of this Letter of Notification application. The link to the website is being provided to meet the requirement of OAC 4906-6-07 Rule (B) and to provide the Board with proof of compliance with the notice requirements in OAC 4906-6-Rule 07 (A)(3). https://www.firstenergycorp.com/about/transmission_projects/ohio/perry-ashtabula-

erie west-project.html















EXHIBIT 8



Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR

JAMES ZEHRINGER, DIRECTOR

Office of Real Estate Paul R. Baldridge, Chief 2045 Morse Road – Bldg. E-2 Columbus, OH 43229 Phone: (614) 265-6649 Fax: (614) 267-4764

December 19, 2018

Ben Otto Jacobs 400 E. Business Way, Suite 400 Cincinnati, Ohio 45241

Re: 18-1162; Ashtabula 345 kV Transmission Line Rebuild Project

Project: The Project consists of replacing existing steel lattice towers of the 345kV electric transmission line with steel lattice towers within the existing and maintained 350 to 450- foot wide right-of-way (ROW).

Location: The proposed project is in the City of Ashtabula, Ashtabula 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: The Natural Heritage Database has the following records at or within a one-mile radius of the project area:

Great lakes crayfish (*Orconectes propinquus*), State species of concern Channel darter (*Percina copelandi*), State threatened Ashtabula State Scenic River

The review was performed on the project area you specified in your request as well as an additional one-mile radius. Records searched date from 1980. This information is provided to inform you of features present within your project area and vicinity. Additional comments on some of the features may be found in pertinent sections below.

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. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

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 project is within the vicinity of records for the Indiana bat (Myotis sodalis), a state endangered and federally endangered species. Presence of the Indiana bat has been established in the area, and therefore additional summer surveys would not constitute presence/absence in the area. The following species of trees have relatively high value as potential Indiana bat roost trees to include: shagbark hickory (Carva ovata), shellbark hickory (Carya laciniosa), bitternut hickory (Carya cordiformis), black ash (Fraxinus nigra), green ash (Fraxinus pennsylvanica), white ash (Fraxinus americana), shingle oak (Quercus imbricaria), northern red oak (Quercus rubra), slippery elm (Ulmus rubra), American elm (Ulmus americana), eastern cottonwood (Populus deltoides), silver maple (Acer saccharinum), sassafras (Sassafras albidum), post oak (Ouercus stellata), and white oak (Ouercus alba). Indiana bat roost trees consists of trees that include dead and dying trees with exfoliating bark, crevices, or cavities in upland areas or riparian corridors and living trees with exfoliating bark, cavities, or hollow areas formed from broken branches or tops. However, Indiana bats are also dependent on the forest structure surrounding roost trees. If suitable habitat occurs within the project area, the DOW recommends trees be conserved. If suitable habitat occurs within the project area and trees must be cut, the DOW recommends cutting occur between October 1 and March 31. If no tree removal is proposed, this project is not likely to impact this species.

The project is within the range of the clubshell (*Pleurobema clava*), a state endangered and federally endangered mussel, the snuffbox (*Epioblasma triquetra*), a state endangered and federally endangered mussel, and the black sandshell (*Ligumia recta*), a state threatened mussel. The DOW understands that there is no in-water work proposed in a perennial stream, therefore, this project is not likely to impact these species.

The project is within the range of the northern brook lamprey (*lchthyomyzon fossor*), a state endangered fish, and the channel darter (*Percina copelandi*), a state threatened fish. The DOW understands that there is no in-water work proposed in a perennial stream, therefore, this project is not likely to impact these or other aquatic species.

The project is within the range of the eastern massasauga (*Sistrurus catenatus*), a state endangered and a federally threatened snake species. The eastern massasauga uses a range of habitats including wet prairies, fens, and other wetlands, as well as drier upland habitat. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the smooth greensnake (*Opheodrys vernalis*), a state endangered species. This species is primarily a prairie inhabitant, but also found in marshy meadows and roadside ditches. Due to the location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the spotted turtle (*Clemmys guttata*), a state threatened species. This species prefers fens, bogs and marshes, but also is known to inhabit wet prairies, meadows, pond edges, wet woods, and the shallow sluggish waters of small streams and ditches. Due to the

location, the type of habitat present at the project site and within the vicinity of the project area, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the northern harrier (*Circus cyaneus*), 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. Due to the location, the type of habitat present at the project site, and the type of work proposed, this project is not likely to impact this species.

The project is within the range of the piping plover (*Charadrius melodus*), a state endangered and federally endangered bird, and the Kirtland's warbler (*Setophaga kirtlandii*), a state endangered and federally endangered bird. These species do not nest in the state but do utilize stopover habitat as they migrate through the region. The DOW understands that there is no tree removal proposed, therefore, this project is not likely to impact these species.

The project is within the range of the upland sandpiper (*Bartramia longicauda*), a state endangered bird. Nesting upland sandpipers utilize dry grasslands including native grasslands, seeded grasslands, grazed and ungrazed pasture, hayfields, and grasslands established through the Conservation Reserve Program (CRP). Due to the location, the type of habitat present at the project site, and the type of work proposed, 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 U.S. 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. Your local floodplain administrator contact information can be found at the website below.

http://water.ohiodnr.gov/portals/soilwater/pdf/floodplain/Floodplain%20Manager%20Community %20Contact%20List_8_16.pdf

ODNR appreciates the opportunity to provide these comments. Please contact John Kessler at (614) 265-6621 if you have questions about these comments or need additional information.

John Kessler ODNR Office of Real Estate 2045 Morse Road, Building E-2 Columbus, Ohio 43229-6693 John.Kessler@dnr.state.oh.us From: susan_zimmermann@fws.gov <susan_zimmermann@fws.gov> On Behalf Of Ohio, FW3
Sent: Thursday, November 01, 2018 1:51 PM
To: ben.otto@jacobs.com
Cc: Ruggiero, Augustine (Jirousek, Michael J.) aruggiero@firstenergycorp.com
Subject: [EXTERNAL] Jacobs (First Energy) Ashtabula 345 kV Transmission Line Rebuild, Ashtabula Co.



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



TAILS# 03E15000-2019-TA-0200

Dear Mr. Otto,

We have received your recent correspondence requesting information about the subject proposal. There are no Federal wilderness areas, wildlife refuges or designated critical habitat within the vicinity of the project area.

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

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

Sincerely,

Scott Pruitt Acting Field Office Supervisor

APPENDIX A

Wetland and Waterbody Delineation Report

Ashtabula-Erie West-Perry 345 kV Transmission Line Rebuild and Substation Expansion Project

12

Ashtabula County, Ohio

Prepared for



American Transmission Systems, Inc. a subsidiary of FirstEnergy Corp.

November 2019



Jacobs Engineering Group, Inc. 1880 Waycross Road Cincinnati, OH 45242

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D Representative Photographs

Acronyms and Abbreviations

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ATSI	American Transmission Systems Inc.
CWA	Clean Water Act
ESC	Environmental Survey Corridor
°F	Fahrenheit
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
FirstEnergy	FirstEnergy Corporation
GPS	Global Positioning System
HHEI	Headwater Habitat Evaluation Index
HUC	Hydrologic Unit Code
JACOBS	Jacobs Engineering Group, Inc
kV	Kilovolt
NHD	National Hydrography Dataset
NRCS	Natural Resource Conservation Service
NWI	National Wetland Inventory
OBL	Obligate wetland
OEPA	Ohio Environmental Protection Agency
OHWM	Ordinary High-Water Mark
ORAM	Ohio Rapid Assessment Method
PEM	Palustrine emergent
PFO	Palustrine forested
рнwн	Primary Headwater Habitat
Project	Ashtabula-Erie-West Perry 345kV Transmission Line Rebuild and Substation Expansion Project
PSS	Palustrine scrub-shrub
QHEI	Qualitative Habitat Evaluation Index
ROW	Right-of-way
TNW	Traditionally navigable water
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

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1 Introduction

This wetland and waterbody delineation report (Report) summarizes the results of the wetland and waterbody delineation surveys conducted in Ashtabula County, Ohio by Jacobs Engineering Group, Inc. (Jacobs), for American Transmission Systems Inc. (ATSI), a subsidiary of FirstEnergy Corporation (FirstEnergy). ATSI is proposing to replace existing metal H-frame structures associated with the 1.3-mile long Ashtabula-Erie West-Perry 345 kV Transmission Line Rebuild and Substation Expansion Project (Project). This Project begins approximately 1.2 miles northeast of East Ashtabula, Ohio, at the existing Ashtabula Substation in Ashtabula County, near the intersection of OH State Route 531 and Alpine Drive Road and extends in a southern direction to Structure 13009 just south of the existing Conrail railroad track, south of Middle Road (Figure 1). Additionally, the Project includes an expansion of the existing Ashtabula Substation and an approximately 0.9 mile 100-foot wide access road from North Ridge Road north to Structure 13009.

Jacobs conducted environmental surveys for the Project on August 28-29, October 30, and December 27, 2018. The environmental survey corridor (ESC) included the existing 400- to 500-foot right-of-way (ROW), potential access routes, a substation expansion area, and temporary laydown yards totaling approximately 121 acres.

This wetland and waterbody delineation report contains the following components:

- Figure 1 provides an overview map of the ESC overlain on ArcGIS Online USA topographic maps.
- Figures 2-A to 2-E show U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) mapped soil units, the location of National Wetland Inventory (NWI) polygons, national hydrography dataset (NHD) streams, and Federal Emergency Management Agency (FEMA) 100-year floodplain and floodway information. Table 3-1 lists the soils types identified within the ESC and Table 3-2 lists the NWI wetland types identified within the ESC.
- Figures 3-A to 3-F provide the location of all features mapped during the delineation by Jacobs biologists within the ESC. This includes all wetlands, wetland and upland data points, and waterbodies. Tables 4-1 (wetlands) and 4-2 (streams), provides detailed information for all delineated features within the ESC and follows the text section. Table 4-3 (in text) provides summary information for all the wetland delineated within the ESC.
- U.S. Army Corps of Engineers (USACE) wetland determination field data forms are in Appendix A.
- Ohio Rapid Assessment Method for Wetlands (ORAM) two-page forms are in Appendix B.
- Qualitative Habitat Evaluation Index (QHEI) stream data forms for each stream identified with a drainage area of 1 square mile or greater and Primary Headwater Habitat (PHWH) Evaluation Index (HHEI) stream data forms for each stream identified with a drainage area less than 1 square mile are in Appendix C.
- Representative photographs for all delineated features within the ESC are in Appendix D.

2 Background Information

This section describes the ESC and methodology used during the wetland and waterbody delineation field surveys.

2.1 Project Area

The Project is located within Ashtabula County, Ohio. The ESC begins at the Ashtabula Substation approximately 1.2 miles northeast of East Ashtabula along OH State Route 531 (41.907306°, -80.768426°) and extends in a southern direction terminating south of the Conrail railroad crossing south of Middle Road (41.888476°, -80.759331°); an access road extends from US Highway 20 (N Ridge Road E) north to the Project area. The ESC crosses the Ashtabula North USGS 7.5-minute topographic map (USGS, 1988). The ESC is approximately 1.3-miles long and 400-500 feet wide, with an additional 0.9 miles of 100-foot wide access road and contains several temporary construction laydown yard areas.

Review of the USGS 7.5-minute topographic maps of the area indicates that multiple streams drain the ESC, including Fields Brook and unnamed tributaries of this waterway. Topographic relief is limited to relatively flat with little elevation changes ranging between 611 feet and 688 feet above sea level throughout the ESC (Figure 1).

Land use and natural communities observed within the ESC includes old and fallow fields, scrub shrub, railroad ROWs, industrial, commercial, urban development, and palustrine emergent (PEM) wetlands, in addition to the previously identified waterbodies.

2.1.1 Annual Precipitation

Recent rainfall data for Ashtabula, Ohio was reviewed prior to completing the environmental survey to determine if climatic conditions were normal at the time of the survey. Ashtabula, Ohio was the nearest weather station with both historical and recent precipitation records. Rainfall recorded in Ashtabula, Ohio was below normal for four months, and normal for four months in 2018 through August. This data suggests climatic conditions were generally drier than normal for 2018 leading up to the ecological survey. This was taken into consideration during the delineation.

2018 Precipitation Data	Jan	Feb	Mar	Apr	May	June	July	August	Total
Monthly Mean ^{1, 2}	1.92	1.68	2.29	2.97	3.7	6.59	4.18	3.39	26.72
Monthly Precipitation Totals ^{1,2}	M ³ 2	1.21	1.93	1.43	3.26	3.9	4.05	2	17.78
Monthly climatic condition	Normal	Normal	Below Normal	Below Normal	Normal	Below Normal	Normal	Below Normal	

TABLE 2-1: Recent Precipitation Data

Ashtabula-Erie West-Perry 345 kV Transmission Line Rebuild and Substation Expansion Project

¹Monthly weather summary and precipitation totals from weather station Ashtabula County AP, OH (NOAA, 2018)

²Displayed in inches

³M = missing data (NOAA, 2018); 2 inches reported by Weather Underground (Weather Underground, 2018)

2.1.2 Drainage Basins

The ESC is within the Southern Lake Erie – Ashtabula-Chagrin (04110003) 8-digit Hydrologic Unit Codes (HUC). The ESC crosses two 12-digit HUCs: Lower Ashtabula River (041100030105) and Town of North Kingsville-Frontal Lake Erie (041201010606).

2.1.3 Traditional Navigable Waters

The U.S. Environmental Protection Agency (EPA) and USACE assert jurisdiction over "all waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce including all waters which are subject to the ebb and flow of the tide" (USACE and USEPA, 2008). These waters are considered traditionally navigable waters (TNW). All the streams and wetlands within the ESC (see Section 4.1 for more detail) drain into the Ashtabula River or directly into Lake Erie, both TNWs (USACE, 2018).
3 Wetland and Waterbody Delineation

3.1 Desktop Review

Prior to conducting the field investigations, Jacobs reviewed the following resources to identify the potential for wetlands within the ESC:

- Aerial photo-based maps (ArcGIS Online, World Imagery Map, 2017)
- Topographic maps (ArcGIS Online, USA Topo Maps, 2017)
- NRCS Web Soil Survey (NRCS, 2018)
- NWI shapefile (USFWS, 2018)
- National Hydrography Dataset (NHD) (USGS, 2018)

According to the NRCS soil survey of Ashtabula County (NRCS, 2018), 12 soil map units are crossed by the ESC. Of the 12 soil map units, one is listed as predominantly hydric, one is listed as predominantly non-hydric, and the remaining 10 units are listed as not hydric (Figures 2-A to 2-E; Table 3-1). NRCS data indicated that predominantly non-hydric soils and not hydric soils comprise 96 percent of the ESC.

Generally, hydric soils are those soils that indicate through their color and structure that they have experienced dominantly reducing (i.e. oxygen poor) conditions. Oxygen-poor conditions result from inundation and/or saturation by water. Partially hydric soils have both hydric and non-hydric soil components identified in the mapped soil unit.

NWI data was obtained from the USFWS for review of potential wetlands that may occur within the ESC. The NWI data (USFWS, 2018) identifies the type of wetland or open water present at a location using the USFWS classification system (Cowardin et al., 1979). The NWI data indicated that 12 NWI features (approximately 16.46 acres) are within the ESC (Figures 3-A to 3-F); three PEM wetland features (PEM1A), one palustrine scrub/shrub feature, two palustrine forest- palustrine scrub-shrub (PFO1/SS1A, PFO1/SS1C) features, two palustrine scrub/shrub-palustrine emergent (PFO1/EM1A, PFO1/EM1C) features, one palustrine unconsolidated bottom feature (PUBGx), and three riverine unconsolidated bottom (R5UBH) features (USFWS, 2018). The presence of an NWI feature is not a definitive indicator that a wetland or waterbody is present. The information on NWI maps is obtained largely from aerial interpretation, may be outdated, and is only sporadically field-checked. Additional detail regarding the mapped NWI wetlands within the ESC is provided in Table 3-2.

TABLE 3-2: Mapped National Wetland Inventory Features

Ashtabula-Erie West-Perry 34 5kV Transmission Line Rebuild and Substation Expansion Project

Wetland Type ¹	Mapped NWI Features ²	Acreage within ESA
PEM1A	3	5.33
PFO1/SS1A	1	0.33
PFO1/SS1C	1	0.41
PSS1/EM1A	1	1.51
PSS1/EM1C	1	8.36
PSS1A	1	0.50
PUBGx	1	0.53
R5UBH	3	1.17
Overall Total	12	18.14

¹Cowardin et al. 1979.

² USFWS, 2018

As shown on the FEMA floodplain panels (Figures 2-A to 2-E), the ESC does not cross any FEMA-mapped 100-year floodplains (FEMA, 2017).

3.2 Field Survey Methodology

Jacobs biologists surveyed the ESC on August 28-29, October 30, and December 27, 2018, by walking the corridor and evaluating for wetlands and other waters of the U.S. The boundaries of each wetland and waterbody within the ESC were delineated and recorded using handheld global positioning system (GPS) units. For waterbodies identified within the Project area, the ordinary high-water mark (OHWM) was used as the jurisdictional boundary.

Wetland and stream data was recorded on USACE Regional Supplement wetland determination data forms, Ohio Rapid Assessment Method forms, Qualitative Habitat Evaluation Index (QHEI) forms, and Headwater Habitat Evaluation Index (HHEI) form, respectively. All other land use, habitat, and other supplemental data was collected in a field notebook during the environmental survey.

3.2.1 Wetland Delineation

Wetland boundaries were field-delineated according to the routine onsite methodology described in the Technical Report Y-87-1 *Corps of Engineers' Wetlands Delineation Manual* and subsequent guidance documents (USACE, 1987) and according to the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (Version 2.0)* (USACE, 2012). Wetland delineation data was recorded on the USACE Regional Supplement wetland determination data forms. Representative wetland and upland data points were recorded during the wetland delineation to determine the presence/absence of wetlands and/or document upland conditions within the Project area. Upland data points were determined not to be within wetlands because they did not have positive indicators of one or more of the three wetland criteria: hydrophytic vegetation, wetland hydrology, and hydric soils.

3.2.1.1 Soils

Jacobs biologists examined soils using a hand auger to extract soil cores, which were examined for hydric soil characteristics. A *Munsell Soil Color Chart* (Kollmorgen Corporation, 1988) was used to identify the hue, value, and chroma of the matrix and concentrations/depletions of the soils. Generally, mottled soils with a matrix chroma of two or less, or unmottled soils with a matrix chroma of one or less are considered to exhibit hydric soil characteristics (USACE, 1987). In sandy soils, mottled soils with a matrix chroma of three or less, or unmottled soils with a matrix chroma of two or less are considered to be hydric soils.

3.2.1.2 Hydrology

The 1987 Manual requires that an area be inundated or saturated to the surface for an absolute minimum of five percent of the growing season. Areas saturated between five percent and 12.5 percent of the growing season may or may not be wetlands, while areas saturated over 12.5 percent of the growing season fulfill the hydrology requirements for wetlands. The *Regional Supplement* states that the growing season dates are determined through onsite observations of the following indicators of biological activity in a given year; (1) above-ground growth and development of vascular plants, and/or (2) soil temperature (12-in. depth is 41 degree Fahrenheit (°F) or higher) as an indicator of soil microbial activity. Therefore, the beginning of the growing season in a given year is indicated by whichever condition occurs earlier, and the end of the growing season by whichever persists later.

The soils and ground surface were examined by Jacobs biologists for evidence of wetland hydrology in lieu of detailed hydrological data. This is an acceptable approach according to the *1987 Manual* and the *Regional Supplement*. Evidence indicating wetland hydrology

typically includes primary indicators such as surface water, saturation, water marks, drift deposits, water-stained leaves, sediment deposits and oxidized rhizospheres on living roots; and secondary indicators such as, drainage patterns, geomorphic position, micro-topographic relief, and a positive Facultative (FAC)-neutral test (USACE, 2012).

3.2.1.3 Vegetation

Dominant vegetation was visually assessed for each stratum (tree, sapling/shrub, herb and woody vine) and an indicator status of obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and/or upland (UPL) was assigned to each plant species based on the 2016 National List of Plant Species that Occur in Wetlands. An area is determined to have hydrophytic vegetation when, under normal circumstances, 50 percent or more of the composition of the dominant species are OBL, FACW and/or FAC species. Vegetation of an area was determined to be non-hydrophytic when more than 50 percent of the composition of the dominant species was FACU and/or UPL species. In addition to the dominance test, the FAC-Neutral test and prevalence tests are used to determine if a wetland has a predominance of hydrophytic vegetation.

Wetland quality was evaluated using the Ohio Environmental Protection Agency (OEPA) Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001). Categorization was conducted in accordance with the latest quantitative score calibration (OEPA, 2000). Wetlands are scored on the basis of hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. Each of these subject areas is further divided into subcategories under ORAM v5.0 resulting in a score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into "Category 1", 30 to 59.9 are "Category 2" and 60 to 100 are "Category 3". Transitional zones exist between "Categories 1 and 2" from 30 to 34.9 and between "Categories 2 and 3" from 60 to 64.9. However, according to the OEPA, if the wetland score falls into the transitional range, it must be given the higher Category unless scientific data can prove it should be in a lower category (Mack, 2001).

According to recent guidance from the USEPA and USACE, wetlands that are adjacent to or have a significant nexus to TNWs are regulated under Sections 401 and 404 of the CWA (USEPA and USACE, 2008). A significant nexus must meet criteria that indicate the wetland provides biological, physical, or chemical benefits to the TNW. A significant nexus includes consideration of both hydrologic and ecologic factors. All streams and wetlands in the ESC drain into either the Ashtabula River or Lake Erie (see Section 4.1 for more detail), both TNWs (USACE, 2018).

3.2.2 Stream Assessment

Jurisdictional streams were identified as those waters that possessed a continuously defined bed and bank, OHWM indicators, and lacked a dominance of upland vegetation in the channel. Per USACE guidance, the OHWM is defined as the "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). Channels that parallel a roadway or railroad were identified as upland drainage features and were not considered to be jurisdictional unless they had an identifiable OHWM, were identified on the USGS topographic map, or represented a presumed relocation of a natural channel.

During the field survey, functional 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* (OEPA, 2006) and in the OEPA's Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams (OEPA, 2009). The Qualitative Habitat Evaluation Index (QHEI), is used to characterize larger streams (drainage areas greater than 1 square mile), while the Primary Headwater Habitat Evaluation Index (HHEI) is appropriate for first-order and second-order headwater streams (drainage areas less than 1 square mile).

Jacobs biologists conducted environmental surveys on August 28-29, October 30, and December 27, 2018. A total of 13 wetlands and three streams were delineated within the ESC. The features identified within the ESC are displayed and identified on the Wetlands and Waterbodies Delineation Map (Figures 3-A to 3-F).

Detailed information for wetland and waterbody features within the ESC is provided in Tables 4-1 and 4-2, (follows text) respectively. Jacobs defaults to the USACE for the final determination of hydrologic connectivity and jurisdiction.

4.1 Wetlands

Thirteen wetlands totaling 27.83 acres, ranging in size from 0.05 to 8.73 acres, were delineated within the ESC and are depicted in Figures 3-A to 3-F. The reported wetland acreage only corresponds to areas delineated within the ESC as some wetlands extended beyond the survey boundary. Twelve of the wetlands were identified as PEM (palustrine emergent) wetlands and one was identified as a POW (palustrine open-water) wetland. Detailed information for each delineated wetland within the ESC is provided in Table 4-1 (follows text), and a summary of the delineated wetlands is provided in Table 4-3 below.

TABLE 4-3: Wetland Summary Table

Wetland Type	(ORAM Categor	у			
	Category 1	Category 2	Category 3	Number of Wetlands	Acreage within ESA ¹	
PEM	11	1	0	12	27.61	
POW	1	0	0	1	0.22	
Totals	12	1	0	13	27.83	

Ashtabula-Erie West-Perry 345 kV Transmission Line Rebuild and Substation Expansion Project

¹This acreage only corresponds to the area delineated within the environmental survey corridor.

Additionally, Jacobs commonly separates wetlands where there is an obvious change between Cowardin wetland types. This split results in each wetland section being assessed independently; however, Jacobs recognizes that the split wetland components are part of a larger wetland complex. Completed USACE wetland and upland determination forms are provided in Appendix A. Representative photographs were taken of each wetland type during the field survey and are provided in Appendix D.

4.1.1 Wetland ORAM Results

A total of 12 Category 1 wetlands and one Category 2 wetland were identified within the ESC. No Category 3 wetlands were identified within the ESC. Table 4-3 provides additional summary information regarding wetlands identified within the ESC. Completed ORAM forms are included in Appendix B.

Eleven of the Category 1 wetlands were classified as PEM wetlands and one was classified as a POW wetland. These wetlands were classified as Category 1 wetlands based on the ORAM scores (ranging from 9.5 to 28.5). Generally, these wetlands scored low due to a variety of factors such as small size, intensity of surrounding land use, narrow buffer areas, disturbance to soils and hydrology, the lack of second growth vegetation, and the presence of invasive species.

One Category 2 wetland, classified as a PEM wetland, was identified within the ESC. This wetland was classified as a Category 2 wetland based on the ORAM score of 33.5. The Category 2 wetland exhibited a large wetland area (3 to 10 acres), wide upland buffers, and low to moderately high intensive surrounding land use (e.g. young second growth forest, residential, new fallow field), and had habitat and hydrology generally recovered or recovering from previous manipulation due to clearcutting, mowing, and other disturbances.

No high-quality Category 3 wetlands were identified within the ESC.

4.2 Streams

A total of three streams, totaling 1,336 linear feet, were identified within the ESC as shown in Figures 3-A to 3-F. Two of the streams were identified as perennial streams and one was identified as an ephemeral stream. One stream was assessed using the HHEI methodology (drainage area less than 1 mi²) and the other two streams were assessed using the QHEI methodology (drainage area greater than 1 mi²). Completed QHEI and HHEI forms are provided in Appendix C. Representative photographs were taken of each stream during the field survey and are provided in Appendix D.

4.2.1 QHEI Results

Two streams, totaling 882 linear feet, within the ESC were evaluated using the QHEI methodology. Both stream habitats assessed were Poor Warmwater streams. Detailed information for each delineated stream within the ESC is provided in Table 4-2 (follows text).

4.2.2 HHEI Results

One headwater stream, totaling 454 linear feet, within the ESC were evaluated using the HHEI methodology. This stream was classified as a Class 2 stream. Detailed information for each delineated stream within the ESC is provided in Table 4-2 (follows text).

5 Conclusion

Jacobs conducted an environmental survey of the Ashtabula-Erie West-Perry 345 kV Transmission Line Rebuild and Substation Expansion Project on August 28-29, October 30, and December 27, 2018. A total of thirteen wetlands and three streams were delineated within the ESC. Twelve of the wetlands totaling 27.61 acres were identified as PEM wetlands and one 0.22-acre wetland was identified as a POW wetland. Twelve of the wetlands were identified as Category 1 wetlands and one wetland was identified as a Category 2 wetland. No Category 3 wetlands were identified within the ESC.

The three streams totaling 1,336 linear feet identified within the ESC include two perennial streams and one ephemeral stream. One stream was assessed using the HHEI methodology (drainage area less than 1 mi²) and classified as a Class 2 stream. Two streams were assessed using the QHEI methodology (drainage area greater than 1 mi²) and were each classified as Poor Warmwater streams.

Jacobs defaults to the USACE for the final determination of hydrologic connectivity and jurisdiction. Further coordination with the USACE is recommended prior to the submittal of any permit or construction activities.

The results of the environmental resource survey described in this report conducted by Jacobs are limited to what was identified within the ESC and depicted in Figures 3-A to 3-F. The information contained in this wetland and waterbody delineation report is for a study area that may be much larger than the actual Project limits-of-disturbance for construction; therefore, lengths and acreages listed in this report may likely not constitute the actual impacts of the Project at the time of construction. If permits are determined to be necessary, actual impacted lengths and/or acreages will be submitted in subsequent permit applications.

The aquatic resources field survey results presented within this report apply to the site conditions at the time of our assessment. Changes within the environmental survey area that may occur with time due to natural processes or human impacts at the project site or on adjacent properties, could invalidate the findings of this report, especially if Jacobs is unaware and has not had the opportunity to revisit the Project survey area. Additionally, changes in applicable standards and regulations may also occur as a result of legislation or the expansion of knowledge over time. Therefore, the findings of this aquatic resources report may be invalidated, wholly or in part, by changes that are beyond the control of Jacobs.

6 References

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6-1

Tables

TABLE 3-1: Mapped Soil Units

Symbol	Description	Hydric Classification
BkC	Blakeslee silt loam, 6 to 12 percent slopes	Not Hydric
СоВ	Colonie loamy fine sand, 2 to 6 percent slopes	Not Hydric
CtA	Conneaut silt loam, 0 to 2 percent slopes	Not Hydric
EnB	Elnora loamy fine sand, 1 to 5 percent slopes	Not Hydric
НаА	Harbor fine sandy loam, 0 to 3 percent slopes	Not Hydric
НоА	Hornell silt loam, 0 to 2 percent slopes	Not Hydric
НоВ	Hornell silt loam, 2 to 6 percent slopes	Not Hydric
OuC	Otisville gravelly sandy loam, 6 to 12 percent slopes	Not Hydric
PaA	Painesville fine sandy loam, 0 to 2 percent slopes	Predominantly Non-hydric
Ud	Udorthents	Not Hydric
Un	Urban land	Not Hydric
WcA	Wick silt loam, 0 to 2 percent slopes, frequently flooded	Predominantly Hydric

Ashtabula-Erie West-Perry	v 345 kV Transmission	Line Rebuild and	Substation Ex	pansion Pro	iect
					,

Location ORAM Wetland ID Wetland Type¹ Area (ac)² Map Figure Score/Category Latitude Longitude Wetland AEWP-01 41.906100 -80.767900 19 / Category 1 3-A, 3-B PEM 0.85 Wetland AEWP-02 41.900100 PEM 0.93 25 / Category 1 3-C -80.764100 Wetland AEWP-03 8.73 25 / Category 1 3-C 41.896700 -80.762900 PEM Wetland AEWP-04 41.891300 -80.760000 PEM 4.53 33.5 / Category 2 3-D Wetland AEWP-05 41.890100 -80.758800 PEM 1.64 13.5 / Category 1 3-D Wetland AEWP-06 24.5 / Category 1 41.885900 -80.759900 PEM 9.11 3-D, 3-E, 3-F Wetland AEWP-07a 41.905000 PEM 0.31 28.5/ Category 1 3-A, 3-B -80.767600 Wetland AEWP-07b 41.905000 -80.768400 POW 0.22 28.5/ Category 1 3-A, 3-B Wetland AEWP-08 41.901700 0.05 13.5/ Category 1 3-B, 3-C -80.766600 PEM Wetland AEWP-09 41.905200 -80.769100 PEM 0.25 12/ Category 1 3-A, 3-B Wetland AEWP-10 41.905600 -80.769400 PEM 0.14 9.5/ Category 1 3-A, 3-B Wetland AEWP-11 41.906100 -80.770100 PEM 0.18 11.5/ Category 1 3-A, 3-B Wetland AEWP-12 41.905300 -80.771300 PEM 0.89 11.5/ Category 1 3-A, 3-B WETLAND ACREAGE SUBTOTAL 27.83

Table 4-1: Detailed Delineated Wetland Table

Ashtabula-Erie west-Perry 545 kv Transmission Line Rebuild and Substation Expansion Proje

¹Cowardin et al. 1979.

²This acreage only corresponds to the area delineated within the environmental survey area.

 TABLE 4-2: Detailed Delineated Stream Table

 Ashtabula-Erie West-Perry 345 kV Transmission Line Rebuild and Substation Expansion Project

		_		
	Map Figure	3-D	3-D	3-D, 3-E
Class (Davinetian	ווטוואוואופטט/ככאט	Poor Warmwater	Poor Warmwater	Class II
ннеі/	Score	37	75	36
Average TOB	Width (Feet)	12	15	4
Average OHWM	Width (Feet)	5	10	m
Linear	Feet ³	459	423	454
Laun Boning	-aniila weli	Perennial	Perennial	Ephemeral
ation	Longitude	-80.761100	-80.761200	-80.759900
Loca	Latitude	41.892900	41.893500	41.886800
	waterboog Name	UNT to Fields Brook	Fields Brook	UNT to Fields Brook
0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	מונגעוו ות	Stream AEWP-01	Stream AEWP-02	Stream AEWP-03

CUMULATIVE STREAM LENGTH ¹UNT = unnamed tributary.

²Flow regime is defined as perennial, intermittent, or ephemeral. This determination was interpreted using field observations and USGS topographic maps as appropriate.

1,336

³Stream length within the environmental survey area.

Figures



























Appendix A U.S. Army Corps of Engineers (USACE) Wetland Determination Forms

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WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Ashtabula - Erie West - Perry 345 kV T Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, T. Qualio; Jacobs Landform (hillslope, terrace, etc.): terrace Subregion (LRR or MLRA): Lake Erie Glaciated PlatLa Soil Map Unit Name: Udorthents Are climatic/hydrologic conditions of the site typical for the Are vegetation , soil X , or hydrology SUMMARY OF FINDINGS	-Line_City/County: Asht State: Ohic Section, Tow Section, Tow Local relief (concave at.: 41.906057 41.906057 his time of the year? Ye	Report Name: Wetland AEWP-01 Sampling Date: 8/28/2018 Sampling Doint: w-mdt-8/28/2018-05 vnship, Range: N/A v, convex, none): concave Long.: -80.768307 Datum: WGS 84 NWI Classification: None es X No urbed? Are "normal circumstances" Yes natic? present? (If needed, explain any answers in remarks)
Hydrophytic vegetation present? Yes Hydric soil present? Yes Wetland hydrology present? Yes	is the sampled a	area within a wetland? Yes
PEM wetland in routinely maintained ROW winearby.	th soils that appear to b	be impacted from past industrial activities
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check a	ll that apply)	Surface Soil Cracks (B6)
Surface Water (A1)True A	quatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydro	gen Sulfide Odor (C1)	X Drainage Patterns (B10)
X Saturation (A3)	ed Rhizospheres on Living	Moss Trim Lines (B16)
Water Marks (B1) Roots	(C3)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Preser	nce of Reduced Iron (C4)	Crayfish Burrows (C8)
Drift Deposits (B3) Recen	t Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	luck Surface (C7)	Geomorphic Position (D2)
Inundation Visible on Aerial Other	(Explain in Remarks)	Shallow Aquitard (D3)
Imagery (B7)		Microtopographic Relief (D4)
Water-Stained Leaves (B9)		X FAC-Neutral Test (D5)
X Aquatic Fauna (B13)		
Field Observations:		
Surface water present? Yes No	X Depth (inches):	Wetland
Water table present? Yes No	X Depth (inches):	hydrology
Saturation present? Yes X No	Depth (inches):	4 present? Y
(includes capillary fringe)		
Describe recorded data (stream gauge, monitoring well,	aerial photos, previous ins	pections), if available:
Remarks:		
]		
Saturated throughout with pockets that appea	r to get inundated perio	odically throughout the year.

VEGETATION - Use scientific names of plants

						Sampling Point:	w-mdt-8/28/2018-05
						50/20 Thresholds	
T		00.4	Absolute %	Dominant	Indicator	1	20% 50%
Tree Stratum	Plot Size (30 m.)	Cover	Species	Status	Tree Stratum	0 0
1				•••••••	0.0.00	Sanling/Shrub Stratum	0 0
2						Horb Stratum	22 55
2						Mendu Vine Stratum	22 55
3						woody vine Stratum	0 0
4		·					
5						Dominance lest workshe	et
6		·····				Number of Dominant	
7						Species that are OBL,	
88						FACW, or FAC:	(A)
9						Total Number of Dominant	
10						Species Across all Strata:	(B)
			=	 Total Cover 		Percent of Dominant	
						Species that are OBL,	
Sapling/Shrub			Absolute %	Dominant	Indicator	FACW or FAC:	100.00% (A/B)
Stratum	Plot Size (15 ft.)	Cover	Species	Status		(,,,,)
			0010	000000	010100	<u> </u>	
1						Prevalence Index Worksh	eet
2						Total % Cover of:	
3						OBL species 10 x 1	= <u>10</u>
4						FACW species 90 x 2	= 180
5						FAC species 10 x 3	= 30
6						FACU species 0 x 4	= 0
7	_ .					UPL species 0 x 5	= 0
8						Column totals 110 (A)	220 (B)
9					<u> </u>	Prevalence Index = B/A =	2.00
10	··· · · ·						
			<u> </u>	Total Cover			
				10(0) 0010		Hydronbytic Vegetation In	dicators:
			Absolute %	Dominant	Indicator	Rapid test for hydrophy	tic venetation
Herb Stratum	Plot Size (5ft.)	Covor	Spacion	Status		tic vegetation
1 Dhraamitaa ay	otrolio			Species	EACW	$-\frac{1}{2}$ Dominance test is 2307	₀ ∩*
2 Soirpus ovpori	50 80 5					Morphological adaptation	u ns* (nrovide
2 Scirpus cypeni	ius Falia		10	<u> </u>		worphological adaptatic	
3 <u>Typna angusti</u>	olla			<u> </u>		supporting data in Rema	arks or on a
4 Juncus tenuis			10	<u> </u>	FAC	separate sneet)	
5				<u> </u>		Problematic hydrophytic	c vegetation*
6						(explain)	
7						Indicators of hydric soil and wetla	and hydrology must be
8						present, unless disturbed or probl	ernatic
9		<u> </u>					
10						Definitions of Vegetation	Strata:
11						Tree - Woody plants 3 in. (7.6 cm) or more in diameter at
12						breast height (DBH), regardless o	f height.
13							
14						Sapling/shrub - Woody plants les	is than 3 in, DBH and
15						greater than 3.28 ft (1 m) tall.	
			110 =	Total Cover		Hach All borbassaut (w) plante recordinant of
						nero - All rieroaceous (non-wood)	y) plants, regardless of 3.28 ft toll
Woody Vine			Absolute %	Dominant	Indicator	aize, and woody plants less than .	5.20 H Idli.
Stratum	Plot Size (30 ft.)	Cover	Snecies	Status	Moody vines . All woody vines of	restor than 3.28 ft in
1			00101	opeoleo	010105	beight	cater than 5.20 it in
2						- Signe	
3							
,							
4						Hydrophytic	
5						vegetation	
			0 =	Total Cover		present? Y	
							-
Remarks: (Include ph	noto numbers here	or on a separa	te sheet)			<u>. </u>	
		·					

Sampling Point: w-mdt-8/28/2018-05

Color (moist) % Color (moist) % Type* Loc** Lexture Remarks 0-10 10YR 5/1 90 10YR 4/4 10 Silty clay Some rocks/gravel in soil 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Depth	Matrix		Red	ox Fea	tures		<u>_</u>	
0-10 10YR 5/1 90 10YR 4/4 10 Sitty clay Some rocks/gravel in soil 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0<	(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Remarks
Image: Stratified Layers (AS) Image: Log Strates (SS) Image: Log Strates (SS) Privation Strates (AS) Image: Log Strates (SS) Image: Log Strates (SS) Privation Strates (AS) Image: Log Strates (SS) Image: Log Strates (SS) Privation Strates (AS) Image: Log Strates (SS) Image: Log Strates (SS) Privation Strates (AS) Image: Log Strates (SS) Image: Log Strates (SS) Privation Strates (AS) Image: Log Strates (SS) Image: Log Strates (SS) Stratified Layers (AS) Image: Log Strates (SS) Image: Log Strates (SS) Stratified Layers (AS) Image: Log Strates (SS) Image: Log Strates (SS) Thin Dark Surface (SS) Image: Log Strates (SS) Image: Log Strates (SS) Stratified Layers (AS) Image: Log Strates (SS) Image: Log Strates (SS) Thin Dark Surface (A11) Redox Depressions (F8) Image: Log Strates (F12) Clare Strates (SS) Peleded Dark Surface (F13) MLRA 147, 148) Statified Layers (AS) Image: Log Strates (F13) Image: Log Strates (F12) Statified Layers (AS) Image: Log Strates (F13) Image: Log Strates (F12) Statified Layers (AS) Image: Log Strates (F13) Image: Log Strates (F13)	0-10	10YR 5/1	90	10YR 4/4	10			Silty clay	Some rocks/gravel in soil
Type: C-Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains "Location: PL=Pore Lining, M=Matrix Hydric Soil Indicators: Histisol (A1) Dolyalue Below Surface (S8) Histisol (A1) Dolyalue Below Surface (S9) (MLRA 147, 148) Coast Prairie Redox (A16) (MLRA 147, 145) Black Histic (A3) Thin Dark Surface (S9) (MLRA 137, 148) (MLRA 136, 12) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Redox Darks CF7) Sandy Mucky Mineral (S1) Redox Darkace (F12) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) 'Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic									
Type: C-Concentration, D-Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains "Location: PL=Pore Lining, M=Matrix Hydric Soil Indicators:									
Image: Section in the section in th									
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains "Location: PL=Pore Liting, M=Matrix Hydric Soil Indicators: —					_				
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains "tocation: PL=Pore Lining, M=Matrix Hydric Soil Indicators: Indicators for Problematic Hydric Soils: Histic Epipedon (A2) Oark Surface (S7) Histic Epipedon (A2) (MLRA 147, 148) Black Histic (A3) Thin Dark Surface (S9) Hydrogen Suffice (A4) (MLRA 147, 148) Stratified Layers (A5) Loamy Gleyed Matrix (F2) 2 cm Muck (A10) (LRR N) X Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Think Dark Surface (F12) Other (Explain in Remarks) Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Stratified Matrix (S6) Redox Dark Surface (F13) (MLRA 136, 122) Stratige Matrix (S6) Red Parent Material (F21) (MLRA 147, 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 147, 147) 'Indicators of hydrophylic vegetation and wetland hydrology must be present, unless disturbed or problematic Restrictive Layer (if observed): Type: Type: Rocky Depleted Matrix (S6) Hydric soil present? Type: Recky						[
'Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains 'Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains 'tocation: PL=Pore Lining, M=Matrix Hydric Soil Indicators: Dark Surface (S7) Histis Epipedon (A2) (MLRA 147, 148) Black Histic (A3) Thin Dark Surface (S9) 2 cm Muck (A10) (MLRA 147, 148) Black Histic (A3) (MLRA 147, 148) Coast Prairie Redox (A16) (MLRA 147, 148) Hydrogen Sulfide (A4) (MLRA 147, 148) (MLRA 147, 148) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Very Shallow Dark Surface (T12) 2 cm Muck (A10) (LRR N) X Depleted Matrix (F3) Other (Explain in Remarks) Depleted Balow Dark Surface (A11) Redox Depressions (F8) Other (Explain in Remarks) Sandy Mucky Mineral (S1) Redox Depressions (F8) (ILRR N, MLRA 136, 147) Stratped Matrix (S4; Umbric Surface (F13) (MLRA 136, 122) Sandy Redox (S5) Stratped Matrix (S4; Umbric Surface (F13) (MLRA 147, 144) Sandy Redox (S5) Stripped Matrix (S4; Umbric Surface (F13) (MLRA 147, 144) Sandy Redox (S5) Red Parent Material (F21) (MLRA 147, 147) 'Indicators of hydrophytic vegetation and wetland hydrology must be present, unless dis									
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains **Location: PL=Pore Lining, M=Matrix Hydric Soil Indicators: Histic Epipedon (A2) Histic Epipedon (A2) Histic Epipedon (A2) Hydre Soil Indicators: Indicators for Problematic Hydric Soils: Histic Epipedon (A2) Hydre Soil Indicators: Indicators for Problematic Hydric Soils: Black Histic (A3) Thin Dark Surface (S9) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) 2 cm Muck (A10) (LRR N) X Depleted Matrix (F2) 2 cm Muck (A10) (LRR N) X Depleted Dark Surface (F6) Thic Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) (LRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136, 122) Sandy Gleyed Matrix (S4) Umbrio Surface (F13) (MLRA 147, 148) Straped Matrix (S4) Umbrio Surface (F13) (MLRA 136, 122) Sandy Gleyed Matrix (S4) Hydrocoptain Soils (F19) (MLRA 148) Straped Matrix (S4) Endorphalanganese Masses (F12) (LRR N, MLRA 147, 148) Straped Matrix (S6)<								-	
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"Type: 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: Histisol (A1) Polyvalue Below Surface (S8) 2 cm Muck (A10) (MLRA 147, 148) Histic Epipedon (A2) (MLRA 147, 148) Coast Prairie Redox (A16) (MLRA 147, 148) Black Histic (A3) Thin Dark Surface (S9) Piedmont Floodplain Soils (F19); Hydrogen Sulfide (A4) (MLRA 147, 148) (MLRA 136, 147) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Very Shallow Dark Surface (TF12) 2 cm Muck (A10) (URR N) X Depleted Matrix (F3) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Other (Explain in Remarks) Depleted Dark Surface (F13) MLRA 136, 122) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 127, 147) Tron-Manganese Masses (F12) (MLRA 127, 147) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic Restrictive Layer (if observed): Type: Rocky Red Parent Material (F21) (MLRA 127, 147) Pieth (inches): 10 Hydric soil						1			
"Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains "Hydric Soil Indicators: Indicators for Problematic Hydric Soils: Hydric Soil Indicators: Dark Surface (S7) Histic Epipedon (A2) (MLRA 147, 148) Black Histic (A3) Thin Dark Surface (S8) 2 cm Muck (A10) (MLRA 147, 148) Black Histic (A3) Thin Dark Surface (S9) Piedmont Floodplain Soils (F19; Hydrigen Sulfide (A4) (MLRA 147, 148) (MLRA 136, 147) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Very Shallow Dark Surface (TF12) 2 cm Muck (A10) (LRR N) X Depleted Matrix (F3) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Other (Explain in Remarks) Depleted Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) (LRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) Hydric soil present? Y									
Type: 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: Histisol (A1) Polyvalue Below Surface (S8) 2 cm Muck (A10) (MLRA 147) Histis (A3) Thin Dark Surface (S9) Piedmont Floodplain Soils (F19); Hydrogen Sulfide (A4) (MLRA 147, 148) Coast Prairie Redox (A16) (MLRA 147, 148 Black Histic (A3) Thin Dark Surface (S9) Piedmont Floodplain Soils (F19); Hydrogen Sulfide (A4) (MLRA 147, 148) (MLRA 136, 147) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Very Shallow Dark Surface (TF12) 2 cm Muck (A10) (LRR N) X Depleted Matrix (F3) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) (ILRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 147, 147) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) 'Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic Puepth (inches): 10									
**Location: PL=Pore Lining, M=Matrix Hydric Soil Indicators:	*Type: C=C	oncentration, D=	Depletic	on, RM=Reduced	Matrix,	CS=Cov	vered or	Coated Sand Grains	
Hydric Soil Indicators: Indicators for Problematic Hydric Soils:	**Location:	PL=Pore Lining, I	M=Matr	ix					
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Hydrogen Sultide (A4) (MLRA 147, 148) (MLRA 136, 147) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Very Shallow Dark Surface (TF12) 2 cm Muck (A10) (LRR N) X Depleted Matrix (F3) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Other (Explain in Remarks)	Black H	listic (A3)		Inin Da	rk Suna	ace (SA)		Pleamont	Floodplain Solis (F19)
Stratified Layers (A5) Loamy Gleyed Matrix (F2) Very Shallow Dark Surface (1F12) 2 cm Muck (A10) (LRR N) X Depleted Matrix (F3) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Other (Explain in Remarks) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) (LRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) 'Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic Restrictive Layer (if observed): Type:Rocky Type:Rocky Y Depth (inches):10 Y Remarks: Hydric soil present?Y	Hydrog	en Sulfide (A4)		(MLRA	147, 14	8}		(MLRA 13	6, 147)
2 cm Muck (A10) (LRR N) X Depleted Matrix (F3) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Other (Explain in Remarks)	Stratifie	d Layers (A5)		Loamy (Gleyed	Matrix (F	2)	Very Shall	ow Dark Surface (TF12)
Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) (LRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic Restrictive Layer (if observed): Type: Type: Rocky Depth (inches): 10 Remarks: Hydric soil present?	2 cm M	uck (A10) (LRR N	۹)	X Deplete	d Matrix	(F3)		Other (Exp	olain in Remarks)
Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) (LRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic Restrictive Layer (if observed): Type: Type: Rocky Depth (inches): 10 Remarks: Hydric soil present?		d Below Dark Su	rtace (A	(11) Redox L	Jark Su	rface (F6	5)		
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Sandy Gleyed Matrix (S4;		, MLKA 147, 148	9	Iron-Ma	nganes	e Masse:	S (F12) (I	LKK N, MLKA 130)	
Stripped Matrix (S6)	Sandy	Gleyed Matrix (S4	+;		Surface	:(F13)(N	11LKA 13	0, 122) (11 DA 440)	
Red Parent Material (P21) (MLRA 127, 147) *Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic	Sanoy	Redox (SS)		Pleamol		ipiain So	115 (F19)	(MLRA 148) A 497 447)	
*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic Restrictive Layer (if observed): Type: Rocky Depth (inches): 10 Remarks: Y	Suippe	u Maulx (SO)			entivia	tenat (FZ		A (27, 147)	
Restrictive Layer (if observed): Type:Rocky Hydric soil present? Depth (inches): 10 Remarks:	*Indicators	of hydrophytic ve	getation	and wetland hyd	irology	must be	present,	unless disturbed or pro	blematic
Restrictive Layer (if observed): Type:									
Type: <u>Rocky</u> Depth (inches): <u>10</u> Remarks:	Restrictive	Layer (if observed	d):						
Depth (inches):	Type:F	Rocky		·		_		Hydric soil pres	ent? <u>Y</u>
Remarks:	Depth (Inch	es): <u>10</u>				-			
	Remarks:						I	<u> </u>	

SOIL

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

			Report Name:	Wetland AEWP-02
Project/Site: Ashtabula - Erie West - Perry 345 k	V T-Line_City/County: /	Ashtabula	Sampling Date:	8/28/2018
Applicant/Owner: FirstEnergy	State: 0	Ohio	Sampling Point:	w-mdt-8/28/2018-04
Investigator(s): M. Thomayer, T. Qualio; Jacobs	Section,	Township, Raлge:	<u>N/A</u>	
Landform (hillslope, terrace, etc.): terrace	Local relief (conc	ave, convex, none)	concave	Slope (%): <u>3</u>
Subregion (LRR or MLRA): Lake Erie Glaciated Pla	t Lat.: 41.900246	Long.: <u>-80</u>	.76416	Datum: WGS 84
Soil Map Unit Name: Udorthents			assification: PEN	/1A
Are climatic/hydrologic conditions of the site typical for	or this time of the year?	Yes <u>X</u> No	(If no, e)	olain in remarks)
Are vegetation, soilX_, or hydrold	gysignificantly of	disturbed? Are	"normal circums	tances" <u>Yes</u>
Are vegetation, soil, or hydrold	gynaturally prot	plematic? pres	sent?	
		()f r	leeded, explain a	ny answers in remarks
SUMMARY OF FINDINGS			_	
Hydrophytic vegetation present? Yes_				
Hydric soil present? Yes	Is the sampl	led area within a w	etland? Ye	es
Wetland hydrology present? Yes				
Remarks:				
PEM wetland in routinely maintained ROW	and hisected by grave	Laccess road. S	nils also annea	r to be impacted
from past industrial activities nearby	and biscoled by grave	10000331000.0		
nom past industrial activities hearby.				
HYDROLOGY				
Wetland Hydrology Indicators:		Secondary	Indicators (minim	um of two required)
Primary Indicators (minimum of one is required; chec	k all that apply)	Surface	Soil Cracks (B6)	
Surface Water (A1)	ie Aquatic Plants (B14)	Sparsely	Vegetated Conca	ave Surface (B8)
High Water Table (A2)	drogen Sulfide Odor (C1)	X Drainage	e Patterns (B10)	
X Saturation (A3) Ox	idized Rhizospheres on Livir	ng Moss Tr	im Lines (B16)	ļ
X Water Marks (B1) Ro	ots (C3)	Dry-Sea	son Water Table (C2)
Sediment Deposits (B2)	esence of Reduced Iron (C4)) Crayfish	Burrows (C8)	[
Drift Deposits (B3)	cent Iron Reduction in Tilled	Saturation	on Visible on Aeria	al Imagery (C9)
Algal Mat or Crust (B4)	ils (C6)	Stunted	or Stressed Plants	s (D1)
Iron Deposits (B5)Thi	n Muck Surface (C7)	Geomor	phic Position (D2)	
Inundation Visible on AerialOth	ner (Explain in Remarks)	Shallow	Aquitard (D3)	
Imagery (B7)		Microtop	ographic Relief (D)4)
Water-Stained Leaves (B9)		X FAC-Ne	utral Test (D5)	
Aquatic Fauna (B13)				
Field Observations:				
Surface water present? Yes No	X Depth (inches):		Wetland	
Water table present? Yes No	X Depth (inches):		hydrology	
Saturation present? Yes X No	Depth (inches): _	4	present? -	<u> </u>
(includes capillary tringe)				1
Describe recorded data (stream gauge, monitoring w	ell, aerial photos, previous	inspections), if ava	ilable:	
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Permetha				
Internarks:				
Saturated throughout				
alurated throughout.				
		. <u>_v_</u>	_	

VEGETATION - Use scientific names of plants

VEGETATION - Use scientific flames of plants				Sampling Point: v	w-mdt-8/28/2018-04
Tree Stratum Plot Size (30 ft.) 1	Absolute % Cover	Dominant Species	Indicator Status	50/20 Thresholds Tree Stratum Sapling/Shrub Stratum Herb Stratum Woody Vine Stratum	20% 50% 0 0 0 0 24 60 0 0
4 5 6 7 8 9 10				Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant	1(A)
Sapling/Shrub Plot Size(15 ft.) Stratum	Absolute % Cover	Dominant Species	Indicator Status	Species that are OBL, FACW, or FAC:	100.00% (A/B)
1 2 3 4 5 6 7 8 9 10				Prevalence Index Worksheer Total % Cover of: OBL species 0 x 1 = FACW species 120 x 2 = FAC species 0 x 3 = FACU species 0 x 4 = UPL species 0 x 5 = Column totals 120 (A) Prevalence Index = B/A =	$\begin{array}{c} 0 \\ 240 \\ 0 \\ 0 \\ 240 \\ 200 \end{array} (B)$
Herb Stratum Plot Size (5 ft.) 1 Phragmites australis 2 Eupatorium perfoliatum 3 Scirpus cyperinus 4 5 5 6 7 8	0 = Absolute % Cover 100 15 5 	Total Cover Dominant Species Y N N	Indicator Status FACW FACW FACW	Hydrophytic Vegetation Ind. X Rapid test for hydrophytic X Dominance test is >50% X Prevalence index is <3.0*	icators: ; vegetation , s* (provide ks or on a vegetation* d hydrology must be natic
9 10 11 12 13 14				Definitions of Vegetation St Tree - Woody plants 3 in. (7.6 cm) o breast height (DBH), regardless of h Sapling/shrub - Woody plants less	rata: r more in diameter at reight. than 3 in. DBH and
15 Woody Vine Plot Size (30 ft.) 1	120 = Absolute % Cover	Total Cover Dominant Species	Indicator Status	Herb - All herbaceous (non-woody) size, and woody plants less than 3.2 Woody vines - All woody vines great height.	plants, regardless of 28 ft tall. ater than 3.28 ft in
3 4 5		Total Cover		Hydrophytic vegetation present? <u>Y</u>	
Remarks: (Include photo numbers here or on a separa	te sheet)				

SOIL

Sampling Point: w-mdt-8/28/2018-04

Depth	Matrix		Rec	lox Fea	tures		Touturo	Bomarka		
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture			
0-6	10YR 2/1	90	10YR 4/6	10			Silty Clay	Some rocks/gravel in soil		
	·						-			
					1		• · · - · - · · - · · ·			
Type: C=C *Location:	oncentration, D=	Depletic	on, RM=Reduced	l Matrix,	CS=Co	vered or	Coated Sand Grains			
Lucation.	PL-Pole Lining,	<u>vi–iviati</u>	1X				Indianta a fa			
iyune son	mulcators.		Dark Si	uface (S	S7)		mulcators in	or Problematic Hydric Solis:		
Histisol	(A1)		Polvvalu	ue Belo	w Surfac	e (S8)	2 cm Mu	ck (A10) (MLRA 147)		
Histic E	pipedon (A2)		(MLRA	147, 14	8)	- ()	Coast Pr	airie Redox (A16) (MLRA 147. 14		
Black H	istic (A3)		Thin Da	rk Surfa	ace (S9)		Piedmon	t Floodplain Soils (F19)		
-Hydroge	en Sulfide (A4)		(MLRA	147, 14	8)	(MLRA 136, 147)				
Stratifie	d Layers (A5)		Loamy	Gleved	, Matrix (F	2)	Very Shallow Dark Surface (TF12)			
2 cm Mi	uck (A10) (LRR N	4)	Deplete	Depleted Matrix (F3) Other (Explain in Remarks)						
Deplete	d Below Dark Su	rface (A	11) X Redox I	Dark Su	rface (F6	5)				
Thick D	ark Surface (A12)	Deplete	d Dark :	Surface ((F7)				
Sandy N	Mucky Mineral (S	1)	Redox [Depress	ions (F8)				
(LRR N	, MLRA 147, 148)	Iron-Ma	nganes	e Masse	s (F12) (LRR N, MLRA 136)			
Sandy C	Gleyed Matrix (S4	4)	Umbric	Surface	(F13) (N	ILRA 13	6, 122)			
Sandy F	Redox (S5)		Piedmo	nt Flood	Iplain So	ils (F19)	(MLRA 148)			
Stripped	d Matrix (S6)		Red Pa	rent Ma	terial (F2	1) (MLR	A 127, 147)			
indicators of	of hydrophytic ve	getatior	and wetland hyd	drology	must be	present,	unless disturbed or pr	roblematic		
Restrictive L	aver (if observed	h:			-					
ype: a	ravel	<i>r</i>					Hydric soil pres	sent? Y		
epth (inche	es): 6				-		,			
					-					
temarks:										

÷.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Ashtabula - Erie West - Perry 345 kV T-I	ine City/County:	∆shtabula	Report Name: Sampling Date:	Wetland AEWP-03
Applicant/Oupprise FirstEnorgy	<u>Stata:</u>	Ohio	_ Campling Date:	w mdt 9/29/2019
Investigator(s): M Thomever T Qualic: Jacobs	Section	Townshin Range	Sampling Point.	w-mut-0/20/2010-03
Landform (hillslope terrace etc.): terrace	Local relief (conr	ave convex non	e): concave	Slone (%): 3
Subregion (LRR or MLRA): Lake Erie Glaciated Plat Lat.	41.897754	Lona.: -8	0.762905	Datum: WGS 84
Soil Map Unit Name: Udorthents		NWI (Classification: Nor	ne
Are climatic/hydrologic conditions of the site typical for this	time of the year?	Yes <u>X</u> N	o (If no, e	xplain in remarks)
Are vegetation, soil, or hydrology	significantly	disturbed? A	re "normal circums	stances" Yes
Are vegetation, soil, or hydrology	naturally pro	blematic? pr	esent?	
SUMMARY OF FINDINGS		(1)	needed, explain a	any answers in remarks
Hydrophytic vegetation present? Yes				
Hydric soil present? Yes	Is the samp	led area within a	wetland? Y	es
Wetland hydrology present? Yes				
Remarks:				
			A 11	
PEM wetland in routinely maintained ROW and	bisected by grave	el access road.	Soils also appea	ar to be impacted
from past industrial activities nearby.				
		C		·····
wetiand Hydrology indicators:	h . k k N	Secondar	y indicators (minim	num or two required)
Primary Indicators (minimum of one is required; check all t	nat apply)	Surfac	e Soil Cracks (B6)	
Surface Water (A1) True Aqu	atic Plants (B14)	Spars	ely Vegetated Conc	ave Surface (B8)
High Water Table (A2)Hydroge	n Sulfide Odor (C1)	<u>X</u> Draina	ige Patterns (B10)	
X Saturation (A3) Oxidized	Rhizospheres on Livi	ngMoss	Trim Lines (B16)	
Water Marks (B1) Roots (C	3)	Dry-Si	eason Water Table	(C2)
Sediment Deposits (B2) Presence	e of Reduced Iron (C4) Crayfi	sh Burrows (C8)	
Drift Deposits (B3)	ron Reduction in Tilled	Satura	tion Visible on Aeri	al Imagery (C9)
Algal Mat or Crust (B4) Soils (C6	5)	Stunte	d or Stressed Plant	ts (D1)
Iron Deposits (B5) Thin Mud	ck Surface (C7)	Geom	orphic Position (D2)
Unundation Visible on Aerial Other (E	xolain in Remarks)	Shallo	w Aquitard (D3)	·
Imagery (B7)		Microt	opographic Relief (D4)
Water-Stained Leaves (B9)		X FAC-N	leutral Test (D5)	,
X Aquatic Fauna (B13)			()	
Eicld Observations:	<u>.</u>			
Field Observations.	Depth (inchas);		Wetland	
Weter table present? Yes No 2	Depth (inches):		bydrology	
Saturation present? Tes No A	Depth (inches):		nyururuyy	v
(includes appillant fringe)	Deput (inches): _		presents	<u> </u>
(includes capitally milge)				
Describe recorded data (stream gauge, monitoring well, a	erial photos, previous	inspections), if av	vailable:	
Remarks:				
Saturated throughout				

VEGETATION - Use scientific names of plants

						Sampling Point:	w-mdt-8/28/2018-
Tree Stratum	Plot Size (30 ft.	Absolute % Cover	Dominant Species	Indicator Status	Tree Stratum Sapling/Shrub Stratum Herb Stratum Woody Vine Stratum	20% 50% 0 0 0 0 24 60 0 0
		· · · · · · · · · · · · · · · · · · ·		Total Cover		Dominance Test Workshe Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant	et(A) 1(B)
Sapling/Shrub Stratum	Plot Size (15 ft.	Absolute %	Dominant Species	Indicator Status	Species that are OBL, FACW, or FAC:	<u>100.00%</u> (A/B)
				· · · · · · · · · · · · · · · · · · ·		Prevalence Index Workshit Total % Cover of: OBL species 0 x 1 FACW species 120 x 2 x 2 FAC species 0 x 3 x 3 FACU species 0 x 4 y 2 UPL species 0 x 5 y 5 Column totals 120 (A) y 2 Prevalence Index = B/A = 10 x 5 x 5	$ \begin{array}{c} = & 0 \\ = & 240 \\ = & 0 \\ = & 0 \\ = & 0 \\ \hline 240 \\ \hline 2.00 \end{array} (B) $
Herb Stratum Plot Size(5ft.) Phragmites australis Scirpus cyperinus Eupatorium perfoliatum		0 = Absolute % Cover 100 15 5 	Total Cover Dominant Species Y N N	Indicator Status FACW FACW FACW	Hydrophytic Vegetation In X Rapid test for hydrophytic X Dominance test is >50% X Prevalence index is ≤3. Morphological adaptatic supporting data in Rema separate sheet) Problematic hydrophytic (explain) *Indicators of hydric soil and wetta present, unless disturbed or probl	dicators: tic vegetation 6 0* ons* (provide arks or on a c vegetation* and hydrology must be ematic	
						Definitions of Vegetation S Tree - Woody plants 3 in (7.6 cm breast height (DBH), regardless o Sapling/shrub - Woody plants less greater than 3.28 ft (1 m) tall.	Strata:) or more in diameter a f height. ss than 3 in, DBH and
Woody Vine Stratum	Plot Size (30 ft.	Absolute % Cover	Total Cover Dominant Species	Indicator Status	Herb - All herbaceous (non-wood) size, and woody plants less than (Woody vines - All woody vines gr height.	y) plants, regardless o 3.28 ft tall. reater than 3.28 ft in
						Hydrophytic vegetation	

SOIL

Sampling Point: w-mdt-8/28/2018-03

Dehm	Matrix		Rec	lox Feat	tures		Taxtura		
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture		
0-6	10YR 2/1	90	10YR 4/6	10			Silty Clay	Some rocks/gravel in soil	
					1			- <u>†</u>	
					1				
Type: C=C	oncentration, D=	Depleti	on, RM=Reduced	Matrix,	CS=Cov	vered or	Coated Sand Grains	-	
Location:	PL=Pore Lining,	M=Mati	ix						
ydric Soi	Indicators:						Indicators for	r Problematic Hydric Soils:	
Histicol	(41)		Dark St	unace (ε ue Belov	⊳7) ∧ Surfaci	e (S8)	2 cm Muc	k (A10) (MLRA 147)	
Histic E	pipedon (A2)		(MLRA	147.14	.8)	0,001	Coast Pra	irie Redax (A16) (MLRA 147, 14	
Black H	listic (A3)		Thin Da	irk Surfa	ace (S9)		Piedmont	Floodplain Soils (F19)	
 Hydrog	en Sulfide (A4)		(MLRA	147, 14	8)		(MLRA 13	36, 147)	
Stratifie	d Layers (A5)		Loamy	Gleyed	Matrix (F	2)	Very Shal	low Dark Surface (TF12)	
2 cm M	uck (A10) (LRR	N)	Deplete	d Matrix	(F3)	••	Other (Ex	plain in Remarks)	
- Depiete	ed Below Dark St	unace (/	ATT) <u>A</u> Redox I	Jark Su	nace (ro Surface () (E7)			
Sandv	Mucky Mineral (S	2) \$1)	Depiete Redox l	Depress	surrace ((<i>[1]</i>			
(LRR N	. MLRA 147. 14	8)	Iron-Ma	ndanes	e Masse	/ s (F12) (LRR N. MLRA 136)		
Sandy	Gleyed Matrix (S	4)	Umbric	Surface	(F13) (N	ILRA 13	6, 122)		
Sandy	Redox (S5)		Piedmo	nt Flood	Iplain So	ils (F19)	(MLRA 148)		
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2	1) (MLR	A 127, 147)		
ndicatore	of hydrophytic ve	netation	and wetland by	drology	must he	present	unless disturbed or pr	oblematic	
naicatora		getation	rana wenana ny	arology	muat be	present,	diffess distance of pro	obiematic	
	Layer (if observe	d):					Uvdnia politinaa	ant? V	
Restrictive	rave				-		Hydric son pres		
lestrictive	6 (29				-	1			
Restrictive ype: <u>c</u> epth (inch	es): 6								
Restrictive Sype: <u>c</u> Depth (inch Remarks:	es): 6					4. <u></u>			
Restrictive Type: <u>c</u> Depth (inch Remarks:	es): <u>6</u>					• <u></u>			
Restrictive ype: <u>c</u> oepth (inch Remarks:	es): <u>6</u>					• <u></u>			
estrictive ype: <u>c</u> epth (inch emarks:	es): <u>6</u>					<u> </u>			

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Ashtabula - Erie West - Perry 345	kV T-Line City/County:	Ashtabula	Report Name: Sampling Date:	Wetland AEWP-04 8/28/2018
Applicant/Owner: FirstEnergy	State:	Ohio	Sampling Point	: w-mdt-8/28/2018-02
Investigator(s): M. Thomayer, T. Qualio; Jacobs	Section	, Township, Range:	N/A	
Landform (hillslope, terrace, etc.): terrace Subregion (LRR or MLRA): Lake Erie Glaciated F Soil Map Unit Name: Wick silt Ioam, 0 - 2 percent s	Local relief (cor Plat Lat.: 41.892573 lopes, frequently flooded	ncave, convex, none Long.: -80 NWI CI): <u>concave</u>).760596 assification: PF	Slope (%): Datum: WGS 84 O1/SS1A
Are climatic/hydrologic conditions of the site typical	for this time of the year?	Yes X No	(If no. e	explain in remarks)
Are vegetation, soil, or hydro	ologysignificantly ologynaturally pr	v disturbed? Are oblematic? pre (If i	e "normal circum: esent? needed, explain	stances" <u>Yes</u> any answers in remarks
SUMMARY OF FINDINGS				
Hydrophytic vegetation present? Yes Hydric soil present? Yes Wetland hydrology present? Yes	Is the sam	pled area within a v	vetland? Y	<u>´es</u>
Remarks:				
PEM wetland in routinely maintained RO	W and bisected by two	perennial streams	S	
Wetland Hydrology Indicators:		Secondary	Indicators (minir	num of two required)
Primary Indicators (minimum of one is required; ch	eck all that apply)	Surface	Soil Cracks (B6)	nem er merequieu,
X Surface Water (A1)	rue Aquatic Plants (R14)	Sparsel	v Vegetated Con	rave Surface (B8)
High Water Table (A2)	vdrogen Sulfide Odor (C1)	X Drainac	e Patterns (B10)	
X Saturation (A3)	lyidizad Bhizaspharas an Liv	where Moss T	rim Lines (B16)	
Water Marks (B1)	Zaots (C3)	/ingNoos i	son Water Table	(C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C	4) Cravfist	Burrows (C8)	
Drift Deposits (B3)	Recent Iron Reduction in Tille	d Saturati	ion Visible on Aer	ial Imagery (C9)
Algal Mat or Crust (B4) S	Soils (C6)	Stunted	l or Stressed Plan	ts (D1)
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomo	rphic Position (D2	2)
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallow	Aquitard (D3)	
Imagery (B7)		Microto	pographic Relief (D4)
Water-Stained Leaves (B9)		X FAC-Ne	eutral Test (D5)	,
X Aquatic Fauna (B13)				
Field Observations:				
Surface water present? Yes X No	Depth (inches):	1	Wetland	
Water table present? Yes No	X Depth (inches):		hydrology	
Saturation present? Yes X No	Depth (inches):	0	present?	<u>Y</u>
(includes capillary fringe)				
Describe recorded data (stream gauge, monitoring	well, aerial photos, previou	is inspections), if ava	ailable:	
Remarks:				
Saturated throughout. Northern portion ar	round perennial stream	s is inundated.		

1

VEGETATION - Use scientific names of plants

						50/20 Thresholds	1 1101 0/20/2010
Tree Stratum	Plot Size (30 ft.) Absolute % Cover	Dominant Species	Indicator Status	Tree Stratum Sapling/Shrub Stratum Herb Stratum Woody Vine Stratum	20% 50% 0 0 0 0 26 65 0 0
						Dominance Test Workshe Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata:	et (A) (B)
Sapling/Shrub	Plot Size (15 ft.	Absolute %	Dominant	Indicator	Percent of Dominant Species that are OBL, FACW, or FAC:	<u>100.00%</u> (A/E
						Prevalence Index Worksher Total % Cover of: OBL species 0 x 1 FACW species 130 x 2 FAC species 0 x 3 FACU species 0 x 4 UPL species 0 x 5 Column totals 130 (A) Prevalence Index = B/A = 0 x 5	
Herb Stratum Plot Size (5 ft.) Phragmites australis Phalaris arundinacea Scirpus cyperinus Verbena hastata Lythrum salicaria Onoclea sensibilis		0 = Absolute % Cover 80 20 10 5 5 5	Total Cover Dominant Species Y N N N N N N N N	Indicator Status FACW FACW FACW FACW FACW FACW	Hydrophytic Vegetation In X Rapid test for hydrophytic X Dominance test is >50% X Drevalence index is ≤3. Morphological adaptatic supporting data in Remains esparate sheet) Problematic hydrophytic (explain) *Indicators of hydric soil and wetter problematic disturbed or problematic	dicators: ic vegetation 0* ons* (provide arks or on a c vegetation* and hydrology must t ematic	
						Definitions of Vegetation S Tree - Woody plants 3 in. (7.6 cm breast height (DBH), regardless o Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.	Strata:) or more in diarnete f height. ss than 3 in. DBH an
Woody Vine Stratum	Plot Size (30 ft.	= Absolute % Cover	Dominant Species	Indicator Status	Herb - All herbaceous (non-wood size, and woody plants less than (Woody vines - All woody vines g height.	y) plants, regardless 3.28 ft tall. reater than 3.28 ft in
5				Total Cover		Hydrophytic vegetation present? Y	-
SOIL

Sampling Point: w-mdt-8/28/2018-02

20p	Matrix		Rec	lox Fea	ures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	10YR 3/1	95	10YR 5/4	5	С	M	Silty Clay	
					Ì			
				ļ	1			
					1		-	
							<u> </u> -	
					!			
Type: C=C	oncentration, D=	Depletic	n, RM=Reduced	Matrix	CS=Cov	vered or	Coated Sand Grains	
'Location:	PL=Pore Lining,	M=Matr	x					
ydric Soil	Indicators:						Indicators for Pre	oblematic Hydric Soils:
			Dark Sι	urface (S	37)			
Histisol	(A1)		Polyval	ue Belo	w Surfac	e (S8)	2 cm Muck (A	.10) (MLRA 147)
Histic E	pipedon (A2)		(MLRA	147, 14	8)		Coast Prairie	Redox (A16) (MLRA 147, 14
Black H	istic (A3)		Thin Da	irk Surfa	ace (S9)		Piedmont Flor	odplain Soils (F19)
Hydroge	en Sulfide (A4)		(MLRA	147, 14	8)		(MLRA 136, 1	47)
Stratifie	d Layers (A5)		Loamy	Gleyed	Matrix (F	2)	Very Shallow	Dark Surface (TF12)
$-\frac{2 \text{ cm M}}{2}$	uck (A10) (LRR	N)	Deplete	d Matrix	((⊢3) 		Other (Explain	n in Remarks)
Depiete	d Below Dark St	unace (A	(11) <u>X</u> Redox i Deplete	Jark Su d Dark	nace (Fo Surfece /)) (E7)		
Sandy J	ark Sunace (A12	2) 21)	Depiete	o Dark Dopross	Sunace ((<i>[1]</i>		
/IRR N		8)	Iron-Ma	nganes	e Masse	/ s (E12) (RRN MIRA 136)	
Sandy (Gleved Matrix (S	4'	Umbric	Surface	(F13) (N		36, 122)	
Sandy F	Redox (S5)	.,	Piedmo	nt Floor	Iplain So	ils (F19)	(MLRA 148)	
Stripped	d Matrix (S6)		Red Pa	rent Ma	terial (F2	1) (MLR	A 127, 147)	
	. ,				``	<i>``</i>		
ndicators of	of hydrophytic ve	getation	and wetland hyd	drology	must be	present,	unless disturbed or proble	matic
		-				-	-	
lestrictive l	ayer (if observe	d):					•	
					-		Hydric soil present	? <u>Y</u>
ype:	ae).				_			
iype: Depth (inch								
ype: epth (inch								

Decidet/Site: Ashtebula Eric West Decay 245 kV T L	Report Name: Wetland AEWP-05
Ashlabdia - Ene West - Ferry 343 KV 1-L	Charles Objection Compliant Date: 0/20/2018
Applicant/Owner: FirstEnergy	State: Unio Sampling Point: w-mut-6/26/2016-01
Landform (hillstope, terrace, etc.): terrace	Local relief (concave, convex, none); concave Slope (%); 3
Subregion (LRB or MLRA): Lake Frie Glaciated Plat Lat	41 889997 Long.: -80,759412 Datum: WGS 84
Soil Map Unit Name: Un - Urban land	NWI Classification: PEM1A
Are climatic/hydrologic conditions of the site typical for this	s time of the year? Yes X No (If no, explain in remarks)
Are vegetation, soil, or hydrology	significantly disturbed? Are "normal circumstances" Yes
Are vegetation, soil, or hydrology	naturally problematic? present? (If needed, explain any answers in remark
SUMMARY OF FINDINGS	
Hydrophytic vegetation present? Yes	
Hydric soil present? <u>Yes</u>	Is the sampled area within a wetland? Yes
Wetland hydrology present? <u>Yes</u>	
Remarks:	
PEM wetland in routinely maintained ROW and	bisected by gravel access road.
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all	that apply) Surface Soil Cracks (B6)
Surface Water (A1) True Aq	uatic Plants (B14) Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydroge	n Sulfide Odor (C1) X Drainage Patterns (B10)
X Saturation (A3)	Bhizospheres on Living Moss Trim Lines (B16)
Water Marks (B1) Boots (C	(C2)
Sediment Deposits (B2)	e of Reduced Iron (C4) Cravfish Burrows (C8)
Drift Deposits (B3)	ron Reduction in Tilled Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6	6) Stunted or Stressed Plants (D1)
Iron Deposits (B5) Thin Mu	ck Surface (C7) Geomorphic Position (D2)
Unundation Visible on Aerial Other (E	xplain in Remarks) Shallow Aquitard (D3)
Imagery (B7)	Microtopographic Relief (D4)
Water-Stained Leaves (B9)	X FAC-Neutral Test (D5)
Aquatic Fauna (B13)	
Field Observations:	
Surface water present? Yes No _>	C Depth (inches): 0 Wetland
Water table present? Yes No	C Depth (inches): 0 hydrology
Saturation present? Yes X No	Depth (inches): 3 present? Y
(includes capillary fringe)	
Describe recorded data (stream gauge, monitoring well, a	erial photos, previous inspections), if available:
Remarks:	
Saturated throughout. Appears pockets of wetla	and get inundated periodically throughout the year.

		F	Ŧ			Sampling Point:	w-mdt-8/28/2018-01
						50/20 Thresholds	
			Absolute %	Dominant	Indicator		20% 50%
Tree Stratum	Plot Size (30 ft.)	Count	Spanian	Chature	Tran Otratives	20% 30%
			Cover	Species	Status	Tree Stratum	0 0
1			<u> </u>			Sapling/Shrub Stratum	0 0
2						Herb Stratum	31 78
3						Woody Vine Stratum	0 0
4			·····				
<u> </u>						Dominance Test Merkshe	nt
<u> </u>						Number of Dominant	ψι.
<u>ь</u>			<u> </u>			Number of Dominant	
7						Species that are OBL,	
8						FACW, or FAC:	1 (A)
9						Total Number of Dominant	
10						Species Across all Strata	1 (8)
				Total Cover			(0)
						Percent or Dominant	
						Species that are OBL,	
Sapling/Shrub		45.0	Absolute %	Dominant	Indicator	FACW, or FAC:	100.00% (A/B)
Stratum	Plot Size (15π.)	Cover	Species	Status	- ,	, , ,
olididili			00101	opeolee	QUARTO		
1						Prevalence Index Worksho	et
2						Total % Cover of:	
3						OBL species 45 x 1	= 45
Ă						EACW species	
						AC speciesX3	=
<u> </u>						FACU species 0 x 4	= _0
7						UPL species 0 x 5	= _0
8						Column totals 155 (A)	265 (B)
9						Prevalence index = B/A =	171
10							
10 <u></u>				Tatal Causa			
			=	Total Cover			
						Hydrophytic Vegetation In	dicators:
Hoch Stratum	Diat Size (6 6 \	Absolute %	Dominant	Indicator	Rapid test for hydrophyt	ic vegetation
	PIOL SIZE (5 K. J	Cover	Species	Status	X Dominance test is >50%	
1 Phragmites aus	tralis		100	Y	FACW	X Prevalence index is <3 (
	26					Morphological adaptatio	ne* (nrovide
2 Leersia Oryzoide				<u> </u>			
3 Carex vuipinoide	ea		10	<u> </u>	OBL	supporting data in Rema	arks or on a
4 Asclepias incarr	nata		5	<u> </u>	OBL	<pre>separate sheet)</pre>	
5 Eupatorium perl	foliatum		5	N	FACW	Problematic hydrophytic	vegetation*
6 Verbena hastata	3		5	N	FACW	(explain)	_
7							
<u>.</u>						"Indicators of hydric soil and wetla	na nyarology must be
°						present, unless disturbed or proble	ematic
9		<u> </u>					
10						Definitions of Vegetation S	Strata:
11						Tree - Woody plants 3 in. (7.6 cm)	or more in diameter at
12						breast height (DBH), regardless of	height.
13			·				-
44						Sapling/shrub - Woody plants les	s than 3 in. DBH and
14						creater than 3 28 ft (1 m) tall	
15							
			155 =	 Total Cover 		Herb - All herbaceous (non-wood)	() plants, repardless of
						size and woody plants loss than 3	28 ft tall
Woody Vine			Absolute %	Dominant	Indicator	aizo, anu woody piants less than a	LEG IL LOIL.
Stratum	Plot Size (30 ft.)	Covor	Spaciae	Status		
Jualuli			COVER	opecies	Jialus	woody vines - All woody vines gr	eater than 3.28 it in
					<u> </u>	neight.	
2							
3							
4						Hudeophysic	
						I nyuropnyuc	
						vegetation	
			0 =	Total Cover		present? Y	
						I ·	·
Remarks: (Include pho	to numbers her	e or on a separa	te sheet)	· · · · ·			
n comunicative prior		e or on a separa	a shout				

Sampling Point: w-mdt-8/28/2018-01

Depth	Matrix		Red	lox Fea	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	1 GYLUI G	Remarks
0-10	10YR 3/1	90	10YR 4/6	10			Silty Clay Loam	
							l	
				Į				
					1			
		<u> </u>	1		1	1		
		1	t		1			
		·····			1	1		
				<u> </u>	1			
		1		<u> </u>	1			
Type: C=C	oncentration De	I Depletic	n RM=Reducer	L 1 Matrix	L CS=Co	L vered or	L Coated Sand Grains	
*Location:	PL=Pore Linina.	M=Matr	ix		,			
lydric Soil	Indicators:						Indicators f	or Problematic Hydric Soils:
iyane oon	indicatory.		Dark St	urface (S	S7)		indicatoro	or replanate rigane const
Histisol	(A1)		Polyval	ue Belo	w Surfac	e (S8)	2 cm Mi	uck (A10) (MLRA 147)
Histic E	pipedon (A2)		(MLRA	147, 14	8)		Coast P	rairie Redox (A16) (MLRA 147, 148
Black H	listic (A3)		Thin Da	ark Surfa	ace (S9)		Piedmor	nt Floodplain Soils (F19)
Hydrog	en Sulfide (A4)		(MLRA	147, 14	8)		(MLRA	136, 147)
Stratifie	d Layers (A5)		Loamy	Gleyed	Matrix (F	2)	Very Sh	allow Dark Surface (TF12)
2 cm M	uck (A10) (LRR	N)	Deplete	d Matrix	x (F3)		Other (E	xplain in Remarks)
Deplete	d Below Dark Si	urtace (A	A11) X Redox	Dark Su	inface (Ht	5) (53)		
- Thick D	ark Surface (A12	2)	Deplete	ed Dark	Surface	(+7)		
Januy I	MUCKY MILITERAL (3 MI DA 147 14	9) 9)	Reubx	Depress	o Massa) c (E12) (RRN MIRA 136)	
Sandy (, MERA 147, 14 Gleved Matrix (S	0) :4)	Umbric	Surface	e (F13) (N	3 (F12) (/ILRA 13	36. 122)	
Sandy Sandy	Redox (S5)	,	Piedmo	nt Floor	dolain So	ils (F19)	(MLRA 148)	
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2	1) (MLR	A 127, 147)	
					,	,,	. ,	
Indicators	of hydrophytic ve	egetatior	n and wetland hy	drology	must be	present,	unless disturbed or p	problematic
Restrictive	_ayer (if observe	ed):					11 1 L	
ype: g	ravel				-		Hydric soll pre	esent? <u>r</u>
Jepin (inch	es): 10				-			
Remarks:						1		•
saman sa.								

SOIL

Project/Site: Ashtabula - Erie West - Perry 345 kV T-L Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, T. Qualio; Jacobs Landform (hillslope, terrace, etc.): terrace Subregion (LRR or MLRA): Lake Erie Glaciated Plat Lat. Soil Map Unit Name: Painseville fine sandy loam, 0 - 2 per Are climatic/hydrologic conditions of the site typical for this Are vegetation , soil X , or hydrology SUMMARY OF FINDINGS	ine_City/County: State: Section Local relief (con Local relief (con Local relief (con table of the year's significantly naturally pro	Ashtabula Ohio I, Township, Range Incave, convex, non Long.: -{ NWI Yes X Visturbed? A oblematic? p	Report Name: Sampling Date: Sampling Point : N/A e): concave 30.759796 Classification: PS o(If no, e re "normal circum: resent? f needed, explain	Wetland AEWP-06 8/29/2018 w-mdt-8/29/2018-01 Slope (%): 2 Datum: WGS 84 S1/EM1C explain in remarks) stances" Yes any answers in remarks
Hydrophytic vegetation present? Yes Hydric soil present? Yes Wetland hydrology present? Yes	Is the sam	pled area within a	wetland? Y	<u>′es</u>
PEM wetland in routinely maintained ROW bise	cted by gravel ro	ad.		
Wetland Hydrology Indicators:		Secondar	y Indicators (minin	num of two required)
Primary Indicators (minimum of one is required; check all t	hat apply)	Surfac	e Soil Cracks (B6)	
X Surface Water (A1) True Aqu	uatic Plants (B14)	Spars	ely Vegetated Cond	cave Surface (B8)
High Water Table (A2) Hydroge	n Sulfide Odor (C1)	X Draina	ige Patterns (B10)	
X Saturation (A3) Oxidized	Rhizospheres on Liv	ring Moss	Trim Lines (B16)	
Water Marks (B1) Roots (C	3)	Drv-S	eason Water Table	(C2)
Sediment Deposits (B2)	e of Reduced Iron (C4	4) Crayfi	sh Burrows (C8)	</td
Drift Deposits (B3)	on Reduction in Tille	d Satura	tion Visible on Aer	ial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6	5)	Stunte	d or Stressed Plan	ts (D1)
Iron Deposits (B5) Thin Muc	ck Surface (C7)	Geom	orphic Position (D2	2)
Inundation Visible on Aerial Other (E	xplain in Remarks)	Shallo	w Aquitard (D3)	
Imagery (B7)		Microt	opographic Relief (D4)
Water-Stained Leaves (B9)		X FAC-N	eutral Test (D5)	
X Aquatic Fauna (B13)				
Field Observations:		I		
Surface water present? Yes X No	Depth (inches):	8	Wetland	
Water table present? Yes No	Depth (inches):		hydrology	
Saturation present? Yes X No	Depth (inches):	2	present?	Y
(includes capillary fringe)				
Departing responded data (attack actual manifest				
Describe recorded data (stream gauge, monitoring weil, at	enai priotos, previou	is inspections), if av	/aliable:	
Remarks:				
Saturated throughout with pockets that appear I	o get inundated p	periodically throu	ughout the year	

EGETATION - Ose scientific frames of plan				Sampling Point: w-mdt-8/29/2018
Tree Stratum Plot Size (30 ft.) 1	Absolute % Cover	Dominant Species	Indicator Status	20%50%Tree Stratum0Sapling/Shrub Stratum0Herb Stratum2973Woody Vine Stratum00
567 78 9 10 Sapling/Shrub Plot Size (15 ft.)		Total Cover Dominant Species	Indicator Status	Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: 2 Total Number of Dominant Species Across all Strata: 2 Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)
1 2 3 4 5 5 6 7 8 9 9				Prevalence Index WorksheetTotal % Cover of:OBL species $30 \times 1 = 30$ FACW species $105 \times 2 = 210$ FAC species $5 \times 3 = 15$ FACU species $5 \times 4 = 20$ UPL species $0 \times 5 = 0$ Column totals 145 Prevalence Index = B/A = 1.90
Herb Stratum Plot Size (5 ft.) 1 Phragmites australis 2 Typha angustifolia 3 Scirpus cyperinus 4 Impatiens capensis 5 Solidago canadensis 6 Dichanthelium clandestinum 7	0 = Absolute % Cover 90 30 10 5 5 5 5 	Total Cover Dominant Species Y Y N N N N N N N	Indicator Status FACW FACW FACW FACU FAC	Hydrophytic Vegetation Indicators: X Rapid test for hydrophytic vegetation X Dominance test is >50% X Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
9 10 11 12 13 14 15 15	145 =	Total Cover		Definitions of Vegetation Strata: Tree - Woody plants 3 in. (7.6 cm) or more in diameter breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
Woody Vine Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status	 Woody vines - All woody vines greater than 3.28 ft in height.
3 4 5		Total Cover		Hydrophytic vegetation present? <u>Y</u>
temarks: (Include photo numbers here or on a separ	ate sheet)			

SOIL

Sampling Point: w-mdt-8/29/2018-01

Depth	Matrix		Red Red	lox Feat	tures		Taxtura	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Kemarks
0-3	10YR 3/1	95	10YR 3/4	5			Silty clay	
3-12	10YR 4/1	90	10YR 5/8	10			Silty clay	
				1				
				1				
				1		1		
								-
	opcontration D-	Donlotic	D PM-Roducer	Motrix	08-00	l internet or	Costed Sand Crains	
ype. 0-0	PI =Pore Lining	M=Matr	ix	, ividilik,				
udala Call	l'ell'ore ening,	141-1410	iA				Indiantana fan f	Angle and in Undein Chiler
yane son	moleators:		Dark Si	uface (S	271		indicators for r	robienatic Hydric Solis.
Histisol	(A1)		Polyval	ue Belov	w Surfac	e (S8)	2 cm Muck	(A10) (MLRA 147)
Histic E	pipedon (A2)		(MLRA	147.14	8)	0 (00)	Coast Prairi	e Redox (A16) (MLRA 147, 14
Black H	listic (A3)		Thin Da	irk Surfa	ace (S9)		Piedmont F	loodplain Soils (F19)
Hydrog	en Sulfide (A4)		(MLRA	147, 14	8)		(MLRA 136	, 147)
Stratifie	d Layers (A5)		Loamy	Gleyed	Matrix (F	2)	Very Shallo	w Dark Surface (TF12)
2 cm M	uck (A10) (LRR	N)	X Deplete	d Matrix	(F3)		Other (Expl	ain in Remarks)
Deplete	d Below Dark St	urface (A	(11) Redox	Dark Su	rface (F6	5)		
	ark Surface (A12	2)	Deplete	d Dark	Surface ((+7)		
(IDD N	Mucky Mineral (a	>)) P)		Depress	aons (Fo) c (E12) (DDN MIDA 126	
-Sandy (Gleved Matrix (S	ן פ גי		Surface	(F13)/N	3 (F12) (11 RA 13	(6 122)	
Sandy I	Redox (S5)	-,	Piedmo	nt Floor	lolain So	ils (F19)	(MLRA 148)	
Stripper	d Matrix (S6)		Red Pa	rent Ma	terial (F2	1) (MLR	A 127, 147)	
					···· · · ·			
ndicators	of hydrophytic ve	getation	and wetland hy	drology	must be	present,	unless disturbed or prob	lematic
						-		
	() F - 4							
estrictive I	Layer (if observe	a):						42 V
ype: looth (inch	05);				-		Hydric soli presei	117 <u>ř</u>
eptir (inch					-			
omarke:								
omanta.								

Project/Site: Ashtabula - Frie West - Perry 345 kV T-I ir	ae City/County:	Ashtabula	Report Name: Wetland AEWP-07a/b Sampling Date: 10/30/2018
Applicant/Owner: FirstEnergy	State:	Ohio	Sampling Point: w-bao-10/30/18-02a/b
Investigator(s): B. Otto; Jacobs	Section	, Township, Range:	N/A
Landform (hillslope, terrace, etc.): depression	Local relief (cor	ncave, convex, none): concave Slope (%): 5
Subregion (LRR or MLRA): Lake Erie Glaciated Plat Lat.:	41.901901	Long.: <u>-80</u>	0.771896 Datum: WGS 84
Soil Map Unit Name: Udorthents			lassification: <u>N/A</u>
Are climatic/hydrologic conditions of the site typical for this t	time of the year?	Yes <u>X</u> No	(If no, explain in remarks)
Are vegetation, soilX_, or hydrology	significantly	y disturbed? Are	e "normal circumstances" Yes
Are vegetation, soil, or hydrology	naturally pr	oblematic? pre	esent?
SUMMARY OF FINDINGS		(11)	needed, explain any answers in remark
I Hydrophytic vegetation present? Yes			
Hydric soil present? Yes	Is the sam	pled area within a v	wetland? Yes
Wetland hydrology present? Yes			
Remarks:			
Linear PEM wetland (Wetland AEWP-07a) fringing	ng a horseshoe	shaped open wal	ter wetland (Wetland AEWP-07b)
within existing transmission line ROW and adjace	ent to existing A	shtabula substati	on.
HYDROLOGY			
Wetland Hydrology Indicators:		Secondary	Indicators (minimum of two required)
Primary Indicators (minimum of one is required: check all th	at apply)	Surface	Soil Cracks (B6)
X Surface Water (A1) True Aqua	atic Plants (B14)	Sparse	ly Vegetated Concave Surface (B8)
High Water Table (A2)	Sulfide Odor (C1)	X Drainac	ne Patterns (B10)
X Saturation (A3)	Dhimne Caol (CT)	uine Moss T	irim Lines (B16)
Water Marks (B1) Roots (C3	Anizospheres on Liv	VingNoss i Dry-Sei	ason Water Table (C2)
Sediment Deposits (B2)	of Reduced Iron (C	(4) Cravfisl	h Burrows (C8)
Drift Deposits (B3)	n Reduction in Tille	ed Saturat	ion Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6)		Stunted	d or Stressed Plants (D1)
Iron Deposits (B5)	Surface (C7)	X Geomo	rphic Position (D2)
Inundation Visible on Aerial Other (Exp	plain in Remarks)	Shallow	v Aquitard (D3)
Imagery (B7)		Microto	pographic Relief (D4)
Water-Stained Leaves (B9)		X FAC-N	eutral Test (D5)
Aquatic Fauna (B13)		—	
Field Observations:			
Surface water present? Yes X No	Depth (inches):	>36	Wetland
Water table present? Yes No X	Depth (inches):		hydrology
Saturation present? Yes X No	Depth (inches):	0	present? Y
(includes capillary fringe)			· · · · · · · · · · · · · · · · · · ·
Describe recorded data (stream gauge, monitoring well, ae	rial photos, previou	us inspections), if ava	ailable:
Remarks:			

				Sampling Point: w-bao-10/30/18-
.) A	bsolute % Cover	Dominant Species	Indicator Status	50/20 T Wetland AEWP-07a/b 20% 50% Tree Sti w-bao-10/30/18-02a 0 0 Sapling/Shrub Stratum 2 5 Herb Stratum 9 23 Woody Vine Stratum 0 0
		Total Cover		Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: 4 Total Number of Dominant Species Across all Strata: 4 Percent of Dominant Percent of Dominant
.) ^A	bsolute % Cover	Dominant Species	Indicator Status	FACW, or FAC:100.00% (A/B
	5	Y Y	FACW FAC	Prevalence Index WorksheetTotal % Cover of:OBL species $0 \times 1 = 0$ FACW species $50 \times 2 = 100$ FAC species $5 \times 3 = 15$ FACU species $0 \times 4 = 0$ UPL species $0 \times 5 = 0$ Column totals 55 (A) 115 Prevalence Index = B/A = 2.09
	10 =	Total Cover		
) A	bsolute % Cover 30 10 5	Dominant Species Y Y N	Indicator Status FACW FACW FACW	Hydrophytic Vegetation Indicators: Rapid test for hydrophytic vegetation X Dominance test is >50% X Prevalence index is <3.0*
				Definitions of Vegetation Strata: Tree - Woody plants 3 in. (7.6 cm) or more in diameter breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall
	45 =	Total Cover	Indicator	Herb - All herbaceous (non-woody) plants, regardless size, and woody plants less than 3.28 ft tall.
) —	Cover	Species	Status	Woody vines - All woody vines greater than 3.28 ft in height.
) Cover	Cover Species	Cover Species Status

Sampling Point: w-bao-10/30/18-02a/b

	pth Matrix Redox Features					1	Toxture	Domarka
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	
0-18	10YR 2/1	100					Silty sand	Coal chunks
ype: C≃C Location:	oncentration, D= PL=Pore Lining,	Depletic M=Matr	n, RM=Reduced	Matrix,	CS=Cov	ered or (Coated Sand Grains	1
Histisol Histic E Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy Sandy Sandy Sandy Strippe	(A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR I d Below Dark Su ark Surface (A12 Mucky Mineral (S , MLRA 147, 14 Gleyed Matrix (S Redox (S5) d Matrix (S6) of hydrophytic ve	N) urface (# 2) 31) 3) 4) egetatior	Dark SL Polyvale (MLRA Thin Da (MLRA Loamy Deplete Redox I Redox I Umbric Red Pa	urtace (S ue Belov 147, 14 Irk Surfa 147, 14 Gleyed I ad Matrix Dark Su Dark Su Dark Su Depress inganesi Surface rent Mat	57) w Surface 8) ace (S9) 8) Matrix (F3) rface (F6) Surface (ions (F8) e Masses (F13) (M terial (F2 must be p	e (S8) 2) F7) s (F12) (I ILRA 13 1) (MLR/ present,	2 cm Muc Coast Pra Piedmoni (MLRA 1 Very Sha Very Sha NO	ck (A10) (MLRA 147) airie Redox (A16) (MLRA 147, 14 t Floodplain Soils (F19) 36, 147) Illow Dark Surface (TF12) kplain in Remarks)
estrictive ype: epth (inch	_ayer (if observe es):	d):			-		Hydric soil pre	sent? Y
emarks:			<u>-</u>		1			······································

SOIL

Participal provides Sature Onto Sature On	Project/Site: Ashtabula - Erie West - Perry 345 kV T-L	ine_City/County: A	Ashtabula	Report Name: Sampling Date:	Wetland AEWP-08 10/30/2018
Interaction (1) Decide (b) Decide (Application/Owner. FirstEnergy	State: C	Jnio Township, Pango:	_Sampling Point:	w-bao-10/30/18-01
Are climatic/hydrologic conditions of the site typical for this time of the year? Yes No (if no, explain in remarks) Are vegetation	Landform (hillslope, terrace, etc.): depression Subregion (LRR or MLRA): Lake Erie Glaciated Plat Lat. Soil Map Unit Name: Udorthents	Local relief (conc 41.901901	ave, convex, none Long.: _8(NWI C): concave).771896 lassification: N/A	Slope (%): 5 Datum: WGS 84
Are vegetation	Are climatic/hydrologic conditions of the site typical for this	s time of the year?	Yes X No) (If no, e	xplain in remarks)
SUMMARY OF FINDINGS Hydrophylic vegetation present? Yes Yes Is the sampled area within a wetland? Yes Remarks: Linear PEM wetland within existing transmission line ROW and adjacent to existing substation. Disturbed area as evidenced by the soil profile containing chunks of coal. Secondary Indicators (minimum of one is required; check all that apply) A: Surface Water (A1) True Aquatic Plants (B14) Surface Soil Cracks (B6) X: Surface Water (A1) True Aquatic Plants (B14) Sparsely Vegetated Concave Surface (B8) X: Surface Water (A1) Chicker All bydrogen Sulfide Odor (C1) Dorianage Patterns (B10) X: Surface Water (A1) Presence of Reduced Iron (C4) Sparsely Vegetated Concave Surface (B8) Yes Presence of Reduced Iron (C4) Solis (C6) Sturatorin (A3) Yes No Depth (inches): Geomorphic Position (D2) Innudation Visible on Aerial Other (Explain in Remarks) Shaltow Aquitart (D3) Mater Mater Rate (B1) Solis (C6) Sturatori (C3) Microtopographic Relief (D4) Yes X No Depth (inches): 4 Japater Stained Leaves (B9) X Microtopographic Relief (D4) Yes Water Mater Rate (B13)	Are vegetation, soil X , or hydrology, are vegetation, soil, or hydrology	significantly d	listurbed? Are plematic? pre (If	e "normal circums esent? needed, explain a	stances" <u>Yes</u>
Hydrophytic vegetation present? Yes Wettand hydrology present? Yes Inear PEM wetland within existing transmission line ROW and adjacent to existing substation. Disturbed area as evidenced by the soil profile containing chunks of coal. HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) X Surface Water (A1) Yes Yes Water Marks (B1) Genement Deposits (B2) Presence of Reduced tron (C4) Solis (C5) In no Deposits (B3) Recent ron Reduced tron (C4) Mark Marks (B1) Inaduation Visible on Aerial Imagery (C9) Shallow Aquitare (C3) Microtopographic Relief (D4) Yes No Depth (inches): 4 Microtopographic Relief (D4) Water Water Marks (B1) <tr< td=""><td>SUMMARY OF FINDINGS</td><td></td><td></td><td></td><td></td></tr<>	SUMMARY OF FINDINGS				
Remarks: Linear PEM wetland within existing transmission line ROW and adjacent to existing substation. Disturbed area as evidenced by the soil profile containing chunks of coal. HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) 2 Surface Water (A1) True Aquatic Plants (B14) X Surface Water (A1) True Aquatic Plants (B14) X Surface Water (A1) Addited Advice Advice Plants (B14) X Surface Water (A1) Oxidized Rhizospheres on Living Water Marks (B1) Oxidized Rhizospheres on Living Water Marks (B1) Recent from Reduction in Tilled Sediment Deposits (B2) Presence of Reduced Iron (C4) Drift Deposits (B3) Recent from Reduction in Tilled Algal Mat or Crust (B4) Soils (C6) Iron Deposits (B5) Thin Muck Surface (C7) Inucdation Visible on Aerial Other (Explain in Remarks) Microtopographic Relief (D4) Xinface water present? Yes X No Depth (inches): 4 Hydrology Aquatition present? Yes X Vater table present? Yes X No Depth (inches): 4 Hydrolog	Hydrophytic vegetation present? Yes Hydric soil present? Yes Wetland hydrology present? Yes	Is the sample	ed area within a v	vetland? Y	es
Linear PEM wetland within existing transmission line ROW and adjacent to existing substation. Disturbed area as evidenced by the soil profile containing chunks of coal. HYDROLOGY Wetland Hydrology Indicators: Secondary Indicators (minimum of two required) Primary Indicators (minimum of one is required; check all that apply) Surface Soil Cracks (86) X High Water Table (A2) X Hydrogen Sulfac Odor (C1) Surface Soil Cracks (86) X High Water Table (A2) X Hydrogen Sulfac Odor (C1) Doxidized Rhizospheres on Living Moss Trim Lines (B16) Saturation (A3) Oxidized Rhizospheres on Living Dry-Season Water Table (C2) Crayfish Burrows (C2) Sediment Deposits (B2) Presence of Reduced Iron (C4) Soils (C6) Sturation Visible on Aerial Imagery (C9) Magal Mat or Crust (B4) Soils (C6) Stunate on Visible on Aerial Imagery (C9) Stunate on Stressed Plants (D1) Inou Deposits (B3) Thin Muck Surface (C7) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) X FAC-Neutral Test (D5) Microtopographic Relief (D4) Y FAC-Neutral Test (D5) Aquatic Fauna (B13) No Depth (inches): Microtopographic Relief (D4) Y FAC-Neutral Test (D5) Auter table present? Yes X No Depth (i	Remarks:				
HYDROLOGY Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Linear PEM wetland within existing transmission evidenced by the soil profile containing chunks	n line ROW and ad of coal.	ljacent to existir	ng substation. [Disturbed area as
Wetland Hydrology Indicators: Secondary Indicators (minimum of one is required; check all that apply) Secondary Indicators (minimum of two required) A: Surface Water (A1) True Aquatic Plants (B14) Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8) X: High Water Table (A2) X: Hydrogen Sulfide Odor (C1) X: Drainage Patterns (B10) Surface Water (A1) X: Saturation (A3) Oxidized Rhizospheres on Living Moss Trim Lines (B16) Drainage Patterns (B10) Water Marks (B1) Roots (C3) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Saturation Visible on Aerial Soils (C6) Saturate Other (Explain in Remarks) Shallow Aquitard (D3) Imagery (B7) Water Fauna (B13) Other (Explain in Remarks) Shallow Aquitard (D3) Water Stained Leaves (B9) X No Depth (inches): 4 Aquatic Fauna (B13) Yes X No Depth (inches): 4 Yetrable present? Yes X No Depth (inches): 4 hydrology Yetrable present? Yes X No Depth (inches): 0 4 hydrology Yetrable present? Yes X No <t< td=""><td>HYDROLOGY</td><td></td><td></td><td></td><td></td></t<>	HYDROLOGY				
Primary Indicators (minimum of one is required; check all that apply)	Wetland Hydrology Indicators:		Secondary	Indicators (minim	num of two required)
X Surface Water (A1)	Primary Indicators (minimum of one is required; check all t	that apply)	Surface	e Soil Cracks (B6)	
X High Water Table (A2) X Hydrogen Sulfide Odor (C1) X Drainage Patterns (B10) X Saturation (A3) Oxidized Rhizospheres on Living Moss Trim Lines (B16) Water Marks (B1) Roots (C3) Dry-Season Water Table (C2) Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Drift Deposits (B3) Recent Iron Reduction in Tilled Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Soils (C6) Sturted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Other (Explain in Remarks) Shallow Aquitard (D3) Imagery (B7) Water Stained Leaves (B9) X FAC-Neutral Test (D5) Aquatic Fauna (B13) Yes X No Depth (inches): 4 *ield Observations: No Depth (inches): 0 Present? Y Saturation present? Yes X No Depth (inches): 1 4 Vater table present? Yes X No Depth (inches): 0 9 9 9 Describe record	X_Surface Water (A1) True Aqu	uatic Plants (B14)	Sparse	ly Vegetated Conc	ave Surface (B8)
X Saturation (A3) Oxidized Rhizospheres on Living Moss Trim Lines (B16) Water Marks (B1) Presence of Reduced Iron (C4) Dry-Season Water Table (C2) Sediment Deposits (B2) Presence of Reduced Iron (C4) Saturation Visible on Aerial Imagery (C9) Maga Mat or Crust (B4) Soils (C6) Saturation Visible on Aerial Imagery (C9) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Other (Explain in Remarks) Shallow Aquitard (D3) Imagery (B7) Mater Table (C2) Shallow Aquitard (D3) Water-Stained Leaves (B9) X FAC-Neutral Test (D5) Aquatic Fauna (B13) Depth (inches): 4 Mydrology Sturation present? Yes X No Depth (inches): 4 Vater table present? Yes X No Depth (inches): 0 Obscribe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Yemarks: Yemarks:	X High Water Table (A2) X Hydroge	n Sulfide Odor (C1)	X Drainag	ge Patterns (B10)	
Water Marks (B1) Roots (C3) Dry-Season Water Table (C2) Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Drift Deposits (B3) Recent Iron Reduction in Tilled Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Other (Explain in Remarks) Shallow Aquitard (D3) Imagery (B7) Microtopographic Relief (D4) Water Fauna (B13) Yes X Field Observations: Ves X Surface water present? Yes X No Depth (inches): 4 Mydrology present? Yes Saturation present? Yes X No Depth (inches): 0 includes capillary fringe) Depth (inches): 4 Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	X Saturation (A3) Oxidized	Rhizospheres on Livin	g Moss T	rim Lines (B16)	
Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Drift Deposits (B3) Recent Iron Reduction in Tilled Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Soils (C6) Sturation Visible on Aerial Imagery (C9) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Other (Explain in Remarks) Shallow Aquitard (D3) Imagery (B7) Microtopographic Relief (D4) Water-Stained Leaves (B9) X FAC-Neutral Test (D5) Aquatic Fauna (B13) No Depth (inches): 4 Field Observations: No Depth (inches): 4 Saturation present? Yes X No Depth (inches): 4 Avater table present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes X No Depth (inches): 0 yresent? Y Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Remarks:	Water Marks (B1) Roots (C	3)	Dry-Se	ason Water Table	(C2)
Drift Deposits (B3) Recent Iron Reduction in Tilled Saturation Visible on Aerial Imagery (C9) Algal Mat or Crust (B4) Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Other (Explain in Remarks) Shallow Aquitard (D3) Imagery (B7) Microtopographic Relief (D4) Water-Stained Leaves (B9) X FAC-Neutral Test (D5) Aquatic Fauna (B13) Depth (inches): 4 Field Observations: No Depth (inches): 4 Surface water present? Yes X No Depth (inches): Saturation present? Yes X No Depth (inches): 9 Jaturation present? Yes X No Depth (inches): 9 9 Saturation present? Yes X No Depth (inches): 9 9 9 Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Xemarks: Xemarks:	Sediment Deposits (B2) Presence	e of Reduced Iron (C4)	Crayfis	h Burrows (C8)	
Aigal Mat or Chust (B4) Soils (C6) Stunted or Stressed Plants (D1) Iron Deposits (B5) Thin Muck Surface (C7) Geomorphic Position (D2) Inundation Visible on Aerial Other (Explain in Remarks) Shallow Aquitard (D3) Imagery (B7) Microtopographic Relief (D4) Water-Stained Leaves (B9) X FAC-Neutral Test (D5) Aquatic Fauna (B13)	Drift Deposits (B3)	ron Reduction in Tilled	Saturat	ion Visible on Aeri	al Imagery (C9)
Iron Deposits (B5)	Algal Mat or Crust (B4) Soils (Ct		Stunted	for Stressed Plant	(D1)
Inundation Visible on Aerial Other (Explain in Remarks) Shallow Aquitard (D3) Imagery (B7) Microtopographic Relief (D4) Water-Stained Leaves (B9) X FAC-Neutral Test (D5) Aquatic Fauna (B13)	Iron Deposits (B5)	ck Surface (C7)	Geomo	rphic Position (D2))
Imagery (B7) Microtopographic Relief (D4) Water-Stained Leaves (B9) X Aquatic Fauna (B13) X Field Observations: Surface water present? Yes Surface water present? Yes X No Depth (inches): 4 Water table present? Yes X Saturation present? Yes X Saturation present? Yes X Vincludes capillary fringe) Depth (inches): 0 Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Inundation Visible on AerialOther (E	xplain in Remarks)	Shallow	v Aquitard (D3)	
Aquatic Fauna (B13) Field Observations: Surface water present? Yes X No Depth (inches): 4 Mater table present? Yes X No Depth (inches): 4 Mater table present? Yes X No Depth (inches): 4 hydrology Saturation present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes X No Depth (inches): 0 present? Y Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Remarks:	Imagery (B7)			pographic Relief (I	(14)
Field Observations: Yes X No Depth (inches): 4 Wetland Water table present? Yes X No Depth (inches): 4 hydrology Saturation present? Yes X No Depth (inches): 0 hydrology Saturation present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes Xes No Depth (inches): 0 present? Y Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Remarks:	Aquatic Found (B13)		FAC-N	eutrai Test (D5)	
Field Observations: Surface water present? Yes X No Depth (inches): 4 Wetland Water table present? Yes X No Depth (inches): 4 hydrology Saturation present? Yes X No Depth (inches): 0 hydrology Saturation present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes X No Depth (inches): 0 present? Y Saturation present? Yes X No Depth (inches): 0 present? Y Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Avaluation present: Yes X No Depth (inches): 4 hydrology Saturation present? Yes X No Depth (inches): 0 hydrology Saturation present? Yes X No Depth (inches): 0 hydrology Concludes capillary fringe) Ves X No Depth (inches): 0 hydrology Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: Remarks:	FIERD UDSERVATIONS:	Depth (inches):	_	Wetland	
Saturation present? Yes X No Depth (inches): 0 present? Y present? Y Cincludes capillary fringe) Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Water table present? Yes X No	Depth (inches):	4	hydrology	
includes capillary fringe) Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks:	Saturation present? Yes X No	Depth (inches):	0	present?	Y
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	(includes capillary fringe)			••••••	
Jescribe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:					
Remarks:	Describe recorded data (stream gauge, monitoring well, a	erial photos, previous	inspections), if ava	ailable:	
	Remarks:			· · · · ·	

Sampling Point: w-bao-10/30/18-01 50/20 Thresholds Absolute % Dominant Indicator 20% 50% 30 ft. Plot Size (Tree Stratum) Status Tree Stratum 0 Cover Species 0 Sapling/Shrub Stratum 2 5 Herb Stratum 19 48 2 3 Woody Vine Stratum 0 0 Δ Dominance Test Worksheet 5 Number of Dominant 6 Species that are OBL, -7 FACW, or FAC: 8 3 (A) Total Number of Dominant 9 Species Across all Strata: з (B) 10 Total Cover 0 Percent of Dominant Species that are OBL, 100.00% (A/B) Sapling/Shrub Absolute % Dominant Indicator FACW, or FAC: Plot Size (15 ft. ì Stratum Cover Species Status Cornus alba 5 Y FACW Prevalence Index Worksheet 1 2 Populus deltoides 5 Y FAC Total % Cover of: x 1 = **OBL** species 3 0 0 FACW species _x 2 = 100 200 4 5 FAC species 5 x 3 = 15 FACU species 0 x 4 = 6 0 UPL species 0 x 5 = 0 105 8 Column totals (A) 215 (B) 2.05 Prevalence Index = B/A = q 10 10 = Total Cover Hydrophytic Vegetation Indicators: Dominant Indicator Absolute % Rapid test for hydrophytic vegetation Herb Stratum Plot Size (5 ft.) Status X Dominance test is >50% Cover Species X Prevalence index is ≤3.0* Phragmites australis 80 Y FACW FACW Morphological adaptations* (provide Juncus effusus Ν 10 -2 supporting data in Remarks or on a 3 Scirpus cyperinus 5 N FACW separate sheet) 4 Problematic hydrophytic vegetation* 5 6 (explain) 7 *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic 8 q Definitions of Vegetation Strata: 10 Tree - Woody plants 3 in. (7.6 cm) or more in diameter at 11 breast height (DBH), regardless of height 12 13 Sapling/shrub - Woody plants less than 3 in. DBH and 14 greater than 3.28 ft (1 m) tall. 15 Total Cover 95 Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody Vine Absolute % Dominant Indicator Plot Size (30 ft. ۱ Stratum Cover Species Status Woody vines - All woody vines greater than 3 28 ft in height. 2 3 4 Hydrophytic 5 vegetation 0 = Total Cover present? Y Remarks: (Include photo numbers here or on a separate sheet)

Sampling Point: w-bao-10/30/18-01

Profile Desc	ription: (Descrit	be to the	depth needed to	o docum	ent the i	ndicator	or confirm the absence	of indicators.)
Depth (Inches)	Matrix Color (moist)	%	Rec Color (moist)	lox Feat %	tures Type*	1.00**	Texture	Remarks
0-18	10YR 2/1	100					Silty sand	Coal chunks
			,					
					1	1		
		i						
**Location:	oncentration, D=	Depletic M=Matri	n, KM=Reduced	i Matrix,	CS=Co	vered or	Coated Sand Grains	
		w-wau	×		· · ·		la d'actava da a	Desklamstis Haskis Collar
Histisol Histic E Black H Hydrogu Stratifie 2 cm M Deplete Thick D Sandy f (LRR N Sandy f Stripped	(A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) uck (A10) (LRR d Below Dark St ark Surface (A12 Mucky Mineral (S Mucky Mineral (S , MLRA 147, 14 4 Gleyed Matrix (S Redox (S5) d Matrix (S6) of hydrophytic ve	N) urface (A 2) 51) 8) 4) egetation	Dark Su Polyvalu (MLRA Thin Da (MLRA Loamy Deplete 11) Redox I Redox I Iron-Ma Umbric Piedmo Red Pa and wetland hyd	Irface (S Je Belov 147, 14 rk Surfa 147, 14 Gleyed I d Matrix Dark Surface nt Flood rent Mat drology I	57) w Surface 8) woce (S9) 8) Matrix (F (F3) frace (F6 Surface (ions (F8 e Massee (F13) (N Iplain So terial (F2 must be	e (S8) 2) (F7) s (F12) (ILRA 13 ils (F19) 1) (MLR present,	2 cm Muck Coast Prain Piedmont F (MLRA 136 Very Shalk X Other (Exp (MLRA 148) A 127, 147) unless disturbed or prol	(A10) (MLRA 147) rie Redox (A16) (MLRA 147, 148) Floodplain Soils (F19) 5, 147) ow Dark Surface (TF12) lain in Remarks)
Restrictive L Type: Depth (inch	ayer (if observe	d):			- -		Hydric soil prese	nt? <u>Y</u>
Soil pres	sumed hydric (due to	positive hydrol	ogy an	d vegiti	ative in	dicators yet deemed	problematic due to coal conte

÷.

SOIL

Project/Site: Ashtabula - Erie West - Perry 345 kV 1	-Line City/County:	Ashtabula	Report Name: Wetland AEWP-09 Sampling Date: 12/27/2018
Applicant/Owner: FirstEnergy	State:	Ohio	Sampling Point: w-bao-12/27/18-01
Investigator(s): B. Otto; Jacobs	Section	i, Township, Range:	N/A
Landform (hillslope, terrace, etc.): depression Subregion (LRR or MLRA): Lake Erie Glaciated Plat La Soil Map Unit Name: Udorthents	Local relief (cor at.: 41.905200	ncave, convex, none Long.: -80): <u>concave</u> Slope (%): <u>3</u>).779100 Datum: WGS 84 lassification: <u>N/A</u>
Are climatic/hydrologic conditions of the site typical for t	his time of the year?	Yes X Na	(If no, explain in remarks)
Are vegetation, soil X , or hydrology Are vegetation, soil, or hydrology	X significantly	v disturbed? Are oblematic? pre (If	e "normal circumstances" Yes esent? needed, explain any answers in remar
			_
Hydrophytic vegetation present? Yes Hydric soil present? Yes Wetland hydrology present? Yes	Is the sam	pled area within a v	vetland? <u>Yes</u>
Remarks: Linear PEM wetland adjacent to existing subs	tation within histori	ically disturbed ar	ea.
HYDROLOGY		· · · ·	
Wetland Hydrology Indicators:		Secondary	Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check a	ill that apply)	Surface	e Soil Cracks (B6)
X Surface Water (A1) True A	Aquatic Plants (B14)	Sparse	ly Vegetated Concave Surface (B8)
X High Water Table (A2) Hydro	gen Sulfide Odor (C1)	Drainag	ge Patterns (B10)
X Saturation (A3) Oxidiz	ed Rhizospheres on Liv	/ingMoss T	rim Lines (B16)
Water Marks (B1) Roots	(C3)	Dry-Sea	ason Water Table (C2)
Sediment Deposits (B2)	nce of Reduced Iron (C	4) <u> </u>	h Burrows (C8)
Drift Deposits (B3)	t Iron Reduction in Tille	edSaturat	ion Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)Soils (C6)	Stunted	f or Stressed Plants (D1)
Iron Deposits (B5) Thin N	luck Surface (C7)	Geomo	rphic Position (D2)
Inundation Visible on AerialOther	(Explain in Remarks)	Shallow	Aquitard (D3)
Imagery (B7)		Microto	pographic Relief (D4)
Water-Stained Leaves (B9)		X FAC-N	eutral Test (D5)
Aquatic Fauna (B13)			
Field Observations:			
Surface water present? Yes X No	Depth (inches):	2	Wetland
Water table present? Yes X No	Depth (inches):	4	hydrology
Saturation present? Yes X No (includes capillary fringe)	Depth (inches):		present? Y
Describe recorded data (stream gauge, monitoring well,	aerial photos, previou	us inspections), if available	ailable:
Remarks:			

	-			Sampling Point: w-bao-12/27/18-01
				50/20 Thresholds
	Aboolute 9/	Dominant	Indiantar	000/ 500/
Tree Stratum Plot Size (30 ft.)	ADSOIULE %	Dominant	indicator	20% 50%
, , , , , , , , , , , , , , , , , , , ,	Cover	Species	Status	Tree Stratum 0 0
1				Sapling/Shrub Stratum 0 0
2				Herb Stratum 20 50
5		<u> </u>		
3				woody vine Stratum 0 0
4				
5				Dominance Test Worksheet
6				Number of Dominant
2				Consistent and ODI
. /				Species that are OBL,
8				FACW, or FAC: 1 (A)
9				Total Number of Dominant
10				Species Across all Strata: 1 (B)
···		Total Cavar		
		Total Cover		Percent of Dominant
				Species that are OBL,
Sapling/Shrub	Absolute %	Dominant	Indicator	FACW or FAC 100 00% (A/B)
Plot Size (15 ft.)	Cause /	Cassian	Chattan	
Stratum	Cover	Species	Status	
1				Prevalence Index Worksheet
·	<u> </u>			
۷				Total % Cover of:
3				OBL species 0 x 1 = 0
4				FACW species 100 x 2 = 200
5				$FAC experies 0 \sqrt{3} = 0$
e				
<u> </u>				FACU species $0 \times 4 = 0$
7				UPL species 0 x 5 = 0
8				Column totals 100 (A) 200 (B)
9				Prevalence Index = $B/A = -2.00$
40				Frevalence index - D/A - 2.00
10				
	0 =	Total Cover		
				Hydrophytic Vegetation Indicators:
	Absolute %	Dominant	Indicator	Banid test for hydrophytic vegetation
Herb Stratum Plot Size (5 ft.)		O	nucator	
	Cover	Species	Status	X Dominance test is >50%
1 <u>Phragmites australis</u>	90	Y	FACW	X Prevalence index is ≤3.0*
2 Juncus effusus	10		FACW	Morphological adaptations* (provide
3				supporting data in Remarks or on a
3	·			supporting data in Remarks of on a
4				separate sheet)
5				Problematic hydrophytic vegetation*
6				(explain)
7			·······	
				Indicators of hydric soil and wetland hydrology must be
8				present, unless disturbed or problematic
9				
10				Definitions of Vegetation Strata:
11				Tree . Moody plants 3 in (7.6 cm) or more in diameter at
				here + woody plants 3 in. (7.0 cm) of hore in dameter at
12				oreast height (DBH), regardless of height.
13				
14				Sapling/shrub - Woody plants less than 3 in. DBH and
15	<u></u>			greater than 3 28 ft (1 m) tall.
····	100	Total Cause		
	==	Total Cover		Herb - All herbaceous (non-woody) plants, regardless of
				size, and woody plants less than 3 28 ft tall
Woody Vine Disk Office of the State	Absolute %	Dominant	Indicator	the second provide the second term.
Stratum Plot Size (30 ft.)	Covor	Spacias	Statue	
4	COVE	opecies	Status	woody vines - All woody vines greater than 3.26 it in
1				height.
2				
3				
4				
۳				Hydrophytic
5				vegetation
	<u> </u>	Total Covor		nresent? V
	=	Total Cover		
Remarks: (Include photo numbers here or on a separa	te sheet)			
, , , · · · · · · · · · · · ·	,			

SOIL

(Inchoc)	pth Matrix Redox Features nes) Color (moist) % Color (moist) % Type* Loc**							Remarks
0-18	10YR 4/1	 90	10YR 5/6	10	iype C		Silty Clay	
				· · · · · · · · · · · · · · · · · · ·				
Type: C=C Location:	Concentration, D= PL=Pore Lining,	Depletic M=Matr	on, RM=Reduced	Matrix,	CS=Cov	vered or	Coated Sand Grains	
Histiso Histic E Black H Hydrog Stratifie 2 cm M Deplete Thick D Sandy Sandy Sandy Strippe	(A1) Epipedon (A2) distic (A3) en Sulfide (A4) ed Layers (A5) luck (A10) (LRR N ed Below Dark Su Dark Surface (A12 Mucky Mineral (S I, MLRA 147, 148 Gleyed Matrix (S4 Redox (S5) d Matrix (S6) of hydrophytic ve	i) rface (A) 1) ;) ;) getation	Polyvalu (MLRA Thin Da (MLRA Loamy (X Deplete 111) Redox I Poplete Redox I Iron-Ma Umbric Red Pal	Je Belov 147, 14 rk Surfa 147, 14 Gleyed I d Matrix Dark Sur d Dark Sur d Dark Surface rent Mat drology i	w Surface 8) Ice (S9) 8) Matrix (F (F3) Irface (F6 Surface (ions (F8) e Masses (F13) (N terial (F2 must be	e (S8) 2) F7) s (F12) (I ILRA 13 1) (MLRA	2 cm Mu Coast Pr Piedmor (MLRA 1 Very Sha Other (E LRR N, MLRA 136) 6, 122) A 127, 147) unless disturbed or p	ick (A10) (MLRA 147) rairie Redox (A16) (MLRA 147, 14 It Floodplain Soils (F19) 136, 147) allow Dark Surface (TF12) xplain in Remarks)
estrictive ype: epth (inch	Layer (if observed les):	J):					Hydric soil pre	sent? Y

Project/Site: Ashtabula - Erie West - Perry 345 kV T-L Applicant/Owner: FirstEnergy Investigator(s): B. Robertson, B. Otto; Jacobs Landform (hillslope, terrace, etc.): depression Subregion (LRR or MLRA): Lake Erie Glaciated Plat Lat.: Soil Map Unit Name: Udorthents Are climatic/hydrologic conditions of the site typical for this Are vegetation , soil , or hydrology SUMMARY OF FINDINGS	ine City/County: State: Local relief (cond Local relief (cond 11.9057	Ashtabula Ohio , Township, Range cave, convex, non Long.:{ NWI (YesN disturbed? A oblematic? p (I	Report Name: Sampling Date: Sampling Point e): <u>N/A</u> e): <u>concave</u> 30.769401 Classification: <u>N/A</u> to(If no, e resent? f needed, explain a	Wetland AEWP-10 12/27/2018 w-bcr-12/27/18-02 Stope (%): 1 Datum: WGS 84 works and the stances of the stanc
Hydrophytic vegetation present? Yes Hydric soil present? Yes Wetland hydrology present? Yes	Is the samp	oled area within a	wetland? Y	es
PEM wetland within disturbed landscape adjace landscape. HYDROLOGY Wetland Hydrology Indicators:	ent to existing sub	ostation. Area is	s slightly lower t	han surrounding
Primary Indicators (minimum of one is required; check all t X Surface Water (A1)	ihat apply) uatic Plants (B14)	Surfac	ce Soil Cracks (B6) ely Vegetated Cond	cave Surface (B8)
X High Water Table (A2) Hydroge	n Sulfide Odor (C1)	Draina	age Patterns (B10)	
X Saturation (A3) Oxidized	Rhizospheres on Livi	ing Moss	Trim Lines (B16)	
Water Marks (B1) Roots (C	:3)	Dry-S	eason Water Table	(C2)
Sediment Deposits (B2)	e of Reduced Iron (C4	4)Crayfi	sh Burrows (C8)	
Drift Deposits (B3)	ron Reduction in Tilled	dSatura	ation Visible on Aer	ial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6	5)	Stunte	ed or Stressed Plan	ts (D1)
Iron Deposits (B5) Thin Muc	ck Surface (C7)	Geom	orphic Position (D2)
Inundation Visible on AerialOther (E:	xplain in Remarks)	Shallo	w Aquitard (D3)	
Imagery (B7)		X Microl	opographic Relief (D4)
Water-Stained Leaves (B9)		X FAC-	Veutral Test (D5)	
Aquatic Fauna (B13)				
Field Observations:				
Surface water present? Yes X No	Depth (inches):	2	Wetland	
Water table present? Yes X No	Depth (inches):	0	hydrology	
Saturation present? Yes X No	Depth (inches):	0	present?	<u>Y</u>
(includes capillary fringe)				
Describe recorded data (stream gauge, monitoring well, as	erial photos, previou	s inspections), if a	vailable:	
Remarks:				
]

Tree Stratum Plot Size (30 ft. Absolute % Cover Dominant Species Indicator Status Satus Species 2	20% 50% Stratum 0 0 ling/Shrub Stratum 0 0 b Stratum 25 63 ody Vine Stratum 0 0
Image: Saping/Shrub Plot Size (15 ft.) Absolute % Dominant Indicator Stratum Plot Size (15 ft.) Absolute % Dominant Indicator Stratum Plot Size (15 ft.) Absolute % Dominant Indicator Image: Species Status Prevent Total Cover Species Status Image: Species Status Prevent Total Cover Species Status Image: Species Status Prevent Species Status Prevent Image: Species Status Prevent Species Status Prevent Image: Species Status Species Status X Image: Species Status Y PACW X Image: Species Status Species Status X Image: Species Status Species Species Species Image: Species Species S	ninance Test Worksheet
0 = Total Cover Perispective Sapling/Shrub Plot Size (15 ft.) Absolute % Dominant Indicator Stratum Indicator Species Status Prevision Image: Stratum Image: Species Status Prevision Species Status Image: Stratum Image: Species Status Prevision Species Status Image: Stratum Plot Size (5 ft.) Dominant Indicator Image: Stratum Plot Size (5 ft.) Dominant Indicator Image: Stratum Plot Size (5 ft.) Phragmites australis 90 Y Image: Stratum Plot Size (5 ft.) N FACW Image: Stratum Species Status Tx Image: Stratum Species Status Species Image: Stratum Species Status Tx Image: Stratum Species Status Species Image: Stratum Plot Size (30 ft. N FACW Image: Stratum Plot Size (30 ft. N Species Image: Stratum Plot Size (30 ft. N Spe	cies of Dominant cies that are OBL, JW, or FAC:(A) al Number of Dominant cies Across all Strata:(B)
Image: stratum Plot Size (5 ft.) Absolute % Dominant Indicator Image: stratum Plot Size (5 ft.) Absolute % Dominant Indicator Image: stratum Plot Size (5 ft.) Absolute % Dominant Indicator Image: stratum Plot Size (5 ft.) Absolute % Dominant Indicator Image: stratum Plot Size (5 ft.) N FACW X Image: stratus 90 Y FACW X X Image: stratus 90 Y FACW X Image: stratus 10 N FACW X Image: stratus 5 N FACW Image: stratus Image: stratum 10 N FACW Image: stratus Image: stratum 125 = Total Cover Sapi Image: stratum Plot Size (30 ft.) Absolute % Dominant Indicator Stratum Plot Size (30 ft.) Absolute % Dominan	cent of Dominant cies that are OBL, CW, or FAC: <u>100.00%</u> (A/B)
0 = Total Cover Herb Stratum Plot Size (5 ft.) 1 Phragmites australis 2 Carex tribuloides 3 Juncus effusus 4 Echinochloa muricata 5 N 6	valence Index Worksheetal % Cover of: species 0 x 1 =. species 125 x 2 =. species 0 x 3 =. species 0 x 4 =. species 0 x 5 =. species 0 x 5 =. umn totals 125 (A). valence Index = B/A = 2.00
Woody Vine Plot Size (30 ft.) Absolute % Dominant Indicator Stratum Plot Size (30 ft.) Absolute % Dominant Indicator Stratum Plot Size (30 ft.) Absolute % Dominant Indicator Moody Vine Plot Size (30 ft.) Absolute % Dominant Indicator Moody Vine Plot Size (30 ft.) Absolute % Dominant Indicator Moody Vine Plot Size (30 ft.) Absolute % Dominant Indicator Moody Vine Plot Size (30 ft.) Absolute % Dominant Indicator	rophytic Vegetation Indicators: Rapid test for hydrophytic vegetation Dominance test is >50% Prevalence index is ≤3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) cators of hydric soil and wetland hydrology must be ent, unless disturbed or problematic
Woody Vine Plot Size (30 ft.) Absolute % Dominant Indicator 2 Image: Stratum Image: Stratum Image: Stratum Image: Stratum 3 Image: Stratum Image: Stratum Image: Stratum Image: Stratum	initions of Vegetation Strata: - Woody plants 3 in. (7.6 cm) or more in diameter a st height (DBH), regardless of height.
Woody Vine Plot Size (30 ft.) Absolute % Dominant Indicator 2	ter than 3.28 ft (1 m) tall.
	and woody plants less than 3.28 ft tall idy vines - All woody vines greater than 3.28 ft in nt.
5	Hydrophytic vegetation
	present? Y
emarks: (Include photo numbers here or on a separate sheet)	

SOIL

Sampling Point: w-bcr-12/27/18-02

Depth	Matrix		Redox Features				Texture	Remarks
(Inches)	Color (moist)		Color (moist)	%	Type*	Loc**		
0-18	10YR 4/1	90	10YR 5/6	10	С	М	Silty Clay	
					.			
		——	 					- r
			1					
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					Į			
								
		<u> </u>		L	<u> </u>	l		
ype: C≃C	oncentration, D=	Depletic	on, RM=Reduced	1 Matrix,	CS=Cov	vered or	Coated Sand Grains	
Location:	PL=Pore Lining,	m=Matr	IX		<u></u>		• •• · · ·	
dric Soil	Indicators:		Deale O		~7 \		Indicators for	Problematic Hydric Soils:
Listiant	/84)		Dark Si	unace (: un Bolo	⊃/) w Surfac	a (SB)	2 cm Musi	(A10) (MI DA 147)
Histic E	(AT) pinedon (A2)		(MIRA	147 14	W Sunac (8)	e (30)	Coast Pra	irie Redox (A16) (MIRA 147 1
Black H	istic (A3)		Thin Da	ark Surfa	ace (S9)		Piedmont	Floodplain Soils (F19)
-Hydroge	en Sulfide (A4)		(MLRA	147, 14	8)		(MLRA 13	6, 147)
Stratifie	d Layers (A5)		Loamy	Gleyed	Matrix (F	2)	Very Shall	low Dark Surface (TF12)
2 cm M	uck (A10) (LRR	N)	X Deplete	d Matrix	(F3)		Other (Ex	plain in Remarks)
Deplete	d Below Dark Si	urface (A	(11) Redox I	Dark Su	rface (F6	5)		
Thick D	ark Surface (A1	2)	Deplete	d Dark	Surface ((F7)		
Sandy I	Mucky Mineral (S	61)	Redox	Depress	sions (F8)		
_(LRR N	, MLRA 147, 14	8)	Iron-Ma	inganes	e Masse	s (F12) (LRR N, MLRA 136)	
	Beyed Matrix (S	4;	Umbric	Surface	e (F13) (N	/ILRA 13	(6, 122) (61 DA 149)	
_Strippor	Kedox (SS)		Pleamo	root Mo	ipiain 50 torial (E2	115 (F 19)	(MLKA 148)	
_Supper					tenai (F2		A 121, 141)	
ndicators of	of hydrophytic ve	aetatior	and wetland hy	droloav	must be	present.	unless disturbed or pro	oblematic
		J	,					
estrictive l	ayer (if observe	d):						
ype:					_		Hydric soil pres	ent? <u>Y</u>
epth (inch	es):				-			
omorko			· · · · · ·					
emarks.								

Project/Site: Ashtabula - Erie West - Perry 345 kV T-Li	ine Citv/Countv:	Ashtabula	Report Name: Sampling Date:	Wetland AEWP-11 12/27/2018
Applicant/Owner: FirstEnergy	State:	Ohio	Sampling Point:	w-bao-12/27/18-02
Investigator(s): B. Otto; Jacobs	Section	n, Township, Range	e: N/A	
Landform (hillslope, terrace, etc.): depression Subregion (LRR or MLRA): Lake Erie Glaciated Plat Lat.: Soil Map Unit Name: Udorthents	Local relief (cor 41.906101	ncave, convex, nor Long.: NWI	ne): <u>concave</u> 80.769996 Classification: <u>N/A</u>	Slope (%): <u>3</u> Datum: <u>WGS 84</u>
Are climatic/hydrologic conditions of the site typical for this	time of the vear?	Yes X N	lo (lfno.e	xolain in remarks)
Are vegetation, soil, or hydrology Are vegetation, soil, or hydrology	significantly naturally pr	y disturbed? A oblematic? p (Are "normal circums present? If needed, explain a	stances" <u>Yes</u>
Hydrophytic vegetation present? Yes Hydric soil present? Yes Wetland hydrology present? Yes	Is the sam	pled area within a	i wetland? Y	es
Depressional PEM wetland adjacent to existing	substation withir	n historically dist	urbed area.	
HYDROLOGY				
Wetland Hydrology Indicators:		Seconda	ry Indicators (minim	num of two required)
Primary Indicators (minimum of one is required; check all t	hat apply)	Surfa	ce Soil Cracks (B6)	
X Surface Water (A1)	atic Plants (B14)	Spars	sely Vegetated Conc	ave Surface (B8)
X High Water Table (A2) Hydroger	n Sulfide Odor (C1)	Drain	age Patterns (B10)	
X Saturation (A3) Oxidized	Rhizospheres on Liv	ving Moss	Trim Lines (B16)	
Water Marks (B1) Roots (C	3)	Dry-S	eason Water Table	(C2)
Sediment Deposits (B2) Presence	e of Reduced Iron (C	4) Crayf	ish Burrows (C8)	. ,
Drift Deposits (B3)	ron Reduction in Tille	ed Satur	ation Visible on Aeri	al Imagery (C9)
Algal Mat or Crust (B4) Soils (C6	5)	Stunt	ed or Stressed Plant	ts (D1)
Iron Deposits (B5) Thin Muc	k Surface (C7)	Geon	orphic Position (D2)	
Inundation Visible on Aerial Other (Ex	xplain in Remarks)	Shalle	ow Aquitard (D3)	
Imagery (B7)		Micro	topographic Relief (I	D4)
Water-Stained Leaves (B9)		X FAC-	Neutral Test (D5)	,
Aquatic Fauna (B13)				
Field Observations:		1		
Surface water present? Yes X No	Depth (inches):	2	Wetland	
Water table present? Yes X No	Depth (inches):	4	hydrology	ļ
Saturation present? Yes X No	Depth (inches):	0	present?	Y
(includes capillary fringe)	,			
Describe recorded data (stream gauge, monitoring well, as	erial photos, previou	us inspections), if a	vailable:	
Remarks:				

	115			Sampling Point: w-bao-12/27/18-02
Tree Stratum Plot Size (30 ft.) 1 2 3 4	Absolute % Cover	Dominant Species	Indicator Status	20%50%Tree Stratum00Sapling/Shrub Stratum00Herb Stratum2050Woody Vine Stratum00
5 6 7 8 9 10		Total Cover		Dominance Test Worksheet Number of Dominant Species that are OBL, FACW, or FAC: 1 Total Number of Dominant Species Across all Strata: 1 Percent of Dominant Species that are OBI
Sapling/Shrub Plot Size(15 ft.) Stratum	Absolute % Cover	Dominant Species	Indicator Status	FACW, or FAC: <u>100.00%</u> (A/B)
1 2 3 4 5 6 7 8 9 10				Prevalence Index WorksheetTotal % Cover of:OBL species 0 X 1 = 0 FACW species 100 X 2 = 200 FAC species 0 X 3 = 0 FACU species 0 X 4 = 0 UPL species 0 Column totals 100 (A) 200 Prevalence Index = $B/A =$ 2.00
Herb Stratum Plot Size (5 ft.) Phragmites australis Juncus effusus 4 5 6 7 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	0 = Absolute % Cover 90 10 	Total Cover Dominant Species Y N	Indicator Status FACW FACW	Hydrophytic Vegetation Indicators: X Rapid test for hydrophytic vegetation X Dominance test is >50% X Prevalence index is >3.0* Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) Problematic hydrophytic vegetation* (explain) *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic
10 11 12 13 14				Definitions of Vegetation Strata: Tree - Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub - Woody plants less than 3 in. DBH and
15 Woody Vine Ptot Size (30 ft.)	<u>100</u> = Absolute %	Total Cover Dominant	Indicator	greater than 3.28 ft (1 m) tall. Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Stratum , , , , , , , , , , , , , , , , , , ,	Cover	Species	Status	Woody vines - All woody vines greater than 3.28 ft in height.
3 4 5		Total Cover		Hydrophytic vegetation present? <u>Y</u>
Remarks: (Include photo numbers here or on a sepa	rate sheet)			

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Sampling Point: w-bao-12/27/18-02

	Matrix		Red	lox Fea	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	
0-18	10YR 4/1	90	10YR 5/6	10	<u> </u>	М	Silty Clay	
· · -								
- ·			1		1			
			ł					
			1					
			}					
					+	<u> </u>		
	oncentration D=	Depleti	<u>I</u> on RM≁Reducer	Matrix			Coated Sand Grains	
*I ocation:	PI =Pore Lining	M=Matr	iy	i Waun,	, 00-00	VELED OF	Coaleu Ganu Grains	
	ladiostera:	in maa					Indiantara faz Bra	hismatic Undrie Caller
yune son	mulcators.		Dark Si	uface (S	37)		indicators for Fro	blematic riyune oolis.
Histisol	(41)		Polyval	ue Belo	w Surfac	e (S8)	2 cm Muck (A1	(0) (MI RA 147)
Histic F	ninedon (A2)		(MLRA	147.14	(8)	0 (00)	Coast Prairie F	Redox (A16) (MLRA 147, 14
Black H	listic (A3)		Thin Da	irk Surfa	ace (S9)		Piedmont Floo	dplain Soils (F19)
Hydrog	en Sulfide (A4)		(MLRA	147.14	8)		(MLRA 136, 14	47)
Stratifie	d Lavers (A5)		Loamy	Gleved	, Matrix (F	2)	Very Shallow [Dark Surface (TE12)
2 cm M	uck (A10) (LRR I	N)	X Deplete	d Matrix	(F3)	-,	Other (Explain	in Remarks)
Deplete	d Below Dark Su	urface (/	A11) Redox I	Dark Su	rface (F6	5)		······································
Thick D	ark Surface (A12	<u>2)</u>	Deplete	d Dark	Surface	(F7)		
Sandy I	Mucky Mineral (S	51)	Redox I	Depress	sions (F8)		
(LRR N	, MLŔA 147, 14	B)	Iron-Ma	inganes	e Masse	s (F12) (LRR N, MLRA 136)	
` Sandy (Gleyed Matrix (S	4)	Umbric	Surface	e (F13) (M	VLRA 13	6, 122)	
Sandy I	Redox (S5)		_				·	
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2	21) (MLR	A 127, 147)	
Indicators	of hydrophytic ve	getation	n and wetland hy	drology	must be	present,	unless disturbed or problem	natic
						,		
	a second de la casa de	د اس				1		
Kestrictive I	Layer (if observe	a):				Į	11	N N N N N N N N N N N N N N N N N N N
ype:					-		Hydric son present?	<u>+</u>
Sonth (inch	es).				-			
Depth (inch						1		
Depth (inch								
Depth (inch Remarks:								
Depth (inch Remarks:								
Depth (inch Remarks:								

SOIL

Project/Site: Ashtabula - Erie West - Perry 345 kV T-Li	ine Citv/County:	Ashtabula	Report Name: Sampling Date:	Wetland AEWP-12
Applicant/Owner: FirstEnergy	State:		Sampling Point	: w-bcr-12/27/18-01
Investigator(s): B. Robertson, B. Otto; Jacobs	Section	, Township, Range:	N/A	
Landform (hillslope, terrace, etc.): depression	Local relief (cor	icave, convex, none): <u>concave</u>	Slope (%): 1
Subregion (LRR or MLRA): Lake Erie Glaciated Plat Lat.:	41.905498	Long.: <u>-80</u>	0.771896	Datum: WGS 84
Soil Map Unit Name: Udorthents		NWI C	lassification: <u>N/A</u>	4
Are climatic/hydrologic conditions of the site typical for this	time of the year?	Yes X No) (If no, e	explain in remarks)
Are vegetation, soil, or hydrology _	significantly	disturbed? Are	e "normal circum	stances" Yes
Are vegetation, soil, or hydrology _	naturally pre	oblematic? pre	esent?	any answore in romarks
SUMMARY OF FINDINGS		(ii		
Hydrophytic vegetation present? Yes				
Hydric soil present? Yes	is the sam	pled area within a v	wetland? Y	'es
Wetland hydrology present? Yes				
Remarks:				
PEM wetland within large depressional landform	n apparently abar	ndoned from prev	ious industrial	land use.
HYDROLOGY				
Wetland Hydrology Indicators:		Secondary	Indicators (minin	num of two required)
Primary Indicators (minimum of one is required; check all t	hat apply)	Surface	e Soil Cracks (B6)	
X Surface Water (A1) True Aqu	atic Plants (B14)	Sparse	ly Vegetated Cond	cave Surface (B8)
X High Water Table (A2) Hydroger	n Sulfide Odor (C1)	X Drainag	ge Patterns (B10)	
X Saturation (A3) Oxidized	Rhizospheres on Liv	ring Moss T	rim Lines (B16)	
Water Marks (B1) Roots (C	3)	Dry-Sea	ason Water Table	(C2)
Sediment Deposits (B2)	e of Reduced Iron (C4	4) Crayfis	h Burrows (C8)	
Drift Deposits (B3) Recent Ir	on Reduction in Tille	d <u></u> Saturat	ion Visible on Aer	ial Imagery (C9)
Algal Mat or Crust (B4) Soils (C6	5)	Stunted	l or Stressed Plan	ts (D1)
Iron Deposits (B5)	k Surface (C7)	<u>X</u> Geomo	rphic Position (D2	2)
Inundation Visible on Aerial Other (E)	kplain in Remarks)	Shallow	v Aquitard (D3)	
Imagery (B7)		Microto	pographic Relief (D4)
Water-Stained Leaves (B9)		X FAC-N	eutral Test (D5)	
Aquatic Fauna (B13)				
Field Observations:				
Surface water present? Yes X No	Depth (inches):	1	Wetland	
Water table present? Yes X No	Depth (inches):	<u> </u>	hydrology	
Saturation present? Yes X No	Depth (inches):	<u> </u>	present?	Y
(includes capillary fringe)	= open (monod).		E	<u> </u>
(·····································				
Describe recorded data (stream gauge, monitoring well, as	erial photos, previou	is inspections), if ava	ailable:	
	, ,	, , , , , , , , , , , , , , , , , , ,		
Remarks:				

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						Sampling Point:	w-bcr-12/27/18-01
						50/20 Thresholds	
Tana Chantan		20.4	, Absolute %	Dominant	Indicator		20% 50%
Tree Stratum	Plot Size (30 ft.) Cover	Species	Status	Tree Stratum	0 0
1						Sapling/Shrub Stratum	2 5
,						Herb Stratum	24 60
						Moody Vice Stratum	24 00
3						woody vine Stratum	U U
4						Desilies Test Missis	- 4
2						Dominance Test worksne	et
6			<u> </u>			Number of Dominant	
7			<u></u>			Species that are OBL,	
8						FACW, or FAC:	2 (A)
9						Total Number of Dominant	
] 10						Species Across all Strata:	<u> </u>
			<u> </u>	Total Cover		Percent of Dominant	
						Species that are OBL,	
Sapling/Shrub		4 - 6	Absolute %	Dominant	Indicator	FACW, or FAC:	100.00% (A/B)
Stratum	Plot Size (15 π.) Cover	Species	Status		<u> </u>
1 Corrus alba			10	 V	EACIAL	Ducycelen og lunders tille skæle	
1 Cornus alba			10	<u> </u>	FACW	Prevalence Index Worksh	eet
2						Total % Cover of:	
3						OBL species x *	I = <u>0</u>
4						FACW species 100 x 2	2 = 200
5						FAC species 20 x 3	3 = 60
6						FACU species 10 x 4	4 = 40
7						UPL species 0 x 5	5 = 0
8						Column totals 130 (A) <u>300</u> (B)
9						Prevalence Index = B/A =	2.31
10							
			10 =	 Total Cover 			
						Hydrophytic Vegetation I	ndicators:
			Absolute %	Dominant	Indicator	Rapid test for hydrophy	tic vegetation
Herb Stratum	Plot Size (5 ft.) Cover	Species	Status	X Dominance test is >509	%
1 Phragmites aus	tralis		80	Y	FACW	X Prevalence index is <3	้∩*
2 luncus tenuis	liano		20	N	FAC	Morohological adaptati	ons* (provide
2 Juncus tenuis	laliatum		10			supporting data in Rem	arks or on a
	onacum		<u> </u>		-FACIL	soparate sheet)	
5 Pop protonsis	princus		<u> </u>	N	- FACU	Separate sileet)	e vegetation*
<u>o</u> <u>Poa pratensis</u>				<u> </u>	FACU	(avalaia)	c vegetation
<u> </u>					<u> </u>	(explain)	
						*Indicators of hydric soil and wet	and hydrology must be
8						present, unless disturbed or prob	lematic
9							
10						Definitions of Vegetation	Strata:
11						Tree - Woody plants 3 in. (7.6 cn	n) or more in diameter at
12						breast height (DBH), regardless	of height.
13							
14						Sapling/snrub - Woody plants le	iss than 3 in. DBH and
15						greater man 5.26 tt (Tm) tall.	
			120	 Total Cover 		Herb - All herbaceous (non-wood	(v) plants, repardless of
						size, and woody plants less than	3.28 ft tall.
Woody Vine	Diot Sine (20.8	Absolute %	Dominant	Indicator	plana horay plana had than	
Stratum	Plot Size (30 π.) Cover	Species	Status	Woody vines - All woody vines of	reater than 3.28 ft in
1				,		height.	,
2						-	
3				<u></u>	<u> </u>		
4						Live an hutin	
					·	nyarophytic	
) ⁵						vegetation	
				 Total Cover 		present? Y	_
						1	
Remarks: (include pho	to numbers her	re or on a se	parate sheet)				
L							

Sampling Point: w-bcr-12/27/18-01

Depth	Matrix	(Rec	lox Feat	tures		Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Texture	Ternarks
0-14	N/	100					Clay Loam	
								I
								<u> </u>
1ype: C=C	oncentration, D	=Depletic	on, RM=Reduced	I Matrix,	CS=Cov	vered or	Coated Sand Grains	
"Location:	PL=Pore Lining	, M=Matr						· · · · · · · · · · · · · · · · · · ·
Hydric Soil	Indicators:						Indicators for I	Problematic Hydric Soils:
Histisol	(Δ1)		Dark St Polyvali	unace (a ue Belov	v Surfaci	e (S8)	2 cm Muck	(A10) (MI RA 147)
Histic E	pipedon (A2)		(MLRA	147.14	8)	0 (00)	Coast Prairi	ie Redox (A16) (MLRA 147, 148)
Black H	listic (A3)		Thin Da	irk Surfa	ice (S9)		Piedmont F	loodplain Soils (F19)
Hydrog	en Sulfide (A4)		(MLRA	147, 14	8)		(MLRA 136	, 147)
Stratifie	d Layers (A5)		X_Loamy	Gleyed	Matrix (F	2)	Very Shallo	w Dark Surface (TF12)
2 cm M	uck (A10) (LRF	LN)	Deplete	d Matrix	< (F3) -f (⊑6	••	Other (Expl	ain in Remarks)
Depiete	ark Surface (A)	Sunace (A	(11)Redox I	d Dark Su	nace (Fo Surface (り) (ギフ)		
Sandy I	Mucky Mineral ((S1)	Bedox I	Depress	ions (F8)		
(LRR N	, MLRA 147, 1	48)	Iron-Ma	nganes	e Masse	, s (F12) (l	LRR N, MLRA 136)	
Sandy (Gleyed Matrix (S4)	Umbric	Surface	(F13) (N	ILRA 13	6, 122)	
Sandy I	Redox (S5)		Piedmo	nt Flood	lplain So	ils (F19)	(MLRA 148)	
Stripped	d Matrix (S6)		Red Pa	rent Ma	terial (F2	1) (MLR.	A 127, 147)	
Indicators (of budrophytics	agotation	and wotland by	Irology	must ba	procent	unless disturbed or prob	Inmatio
mulcators		regeration	and wetland ny	liology	mustbe	present,	uniess disturbed of proc	Jennanc .
								· · ·
Restrictive I	_ayer (if observ	ed):						
Type: <u>C</u>	iravel				-		Hydric soil prese	nt? <u>Y</u>
Depth (inch	es): <u>14</u>				-			
Remarke:								
tornaing.								

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SOIL

Project/Site: Ashtabula - Erie West - F Applicant/Owner: FirstEnergy Investigator(s): M. Thomayer, T. Qualio; Landform (hillslope, terrace, etc.): terra Subregion (LRR or MLRA): Lake Erie GI Soil Map Unit Name: Udorthents Are climatic/hydrologic conditions of the si Are vegetation, soil Are vegetation, soil SUMMARY OF FINDINGS	Perry 345 kV T-Line City/Cou Jacobs Local re aciated Plat Lat.: 41.9058 te typical for this time of the or hydrology sign or hydrology natu	Inty: <u>Ashtabula</u> State: <u>Ohio</u> Section, Township, R lief (concave, convex, 8786 Long vear? Yes <u>X</u> ificantly disturbed? Irally problematic?	Report Name: Sampling Date: Sampling Point: ange: N/A none): none : -80.76811355 IWI Classification: None No (If no, e: Are "normal circums present? (If needed, explain a	Upland see remarks 8/28/2018 upl-mdt-8/28/2018-05 Slope (%): 2 Datum: WGS 84 ie xplain in remarks) tances" Yes iny answers in remarks
Hydrophytic vegetation present? New York Soil Present?	b is th	e sampled area with	in a wetland? N	<u>o</u>
Upland data point (Upland AEWP	-01,07,09,10,11) for adja	acent PEM wetland	S.	
Wetland Hydrology Indicators:		- <u></u> . Ease	adan ladiaatara (minin	
Primary Indicators (minimum of one in real	wind about all that apply	Seco	noary indicators (minim	um of two required)
Primary indicators (minimum of one is req	uired; check all that apply)	s	urface Soil Cracks (B6)	
Surface Water (A1)	True Aquatic Plants (E	314) <u> </u> S	parsely Vegetated Conca	ave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odd	or (C1) D	rainage Patterns (B10)	
Saturation (A3)	Oxidized Rhizosphere	s on LivingN	toss Trim Lines (B16)	
Water Marks (B1)	Roots (C3)		ry-Season Water Table ((C2)
Sediment Deposits (B2)	Presence of Reduced	Iron (C4)C	rayfish Burrows (C8)	
Drift Deposits (B3)	Recent Iron Reduction	n in TilledS	aturation Visible on Aeria	al Imagery (C9)
Algal Mat or Crust (B4)	Soils (C6)	s	tunted or Stressed Plants	s (D1)
Iron Deposits (B5)	Thin Muck Surface (C	7)G	eomorphic Position (D2)	
Inundation Visible on Aerial	Other (Explain in Rem	narks)S	hallow Aquitard (D3)	
Imagery (B7)		N	licrotopographic Relief ([04)
Water-Stained Leaves (B9)		F	AC-Neutral Test (D5)	
Aquatic Fauna (B13)				
Field Observations:				
Surface water present? Yes	No X Depth (ii	nches):	Wetland	
Water table present? Yes	No X Depth (ii	nches):	hydrology	
Saturation present? Yes	No X Depth (ii	nches):	present?	N
(includes capillary fringe)				
Describe recorded data (stream gauge, m	onitoring well, aerial photos,	previous inspections)	, if available:	
Remarks:				

						Sampling Point:	upl-mdt-8/28/2018-0
						50/20 Thresholds	
			Absolute %	Dominant	Indicator		20% 50%
Tree Stratum	Plot Size (30 ft.)	Course	Secolar	Status	Trop Stratum	20/0 00/0
			Cover	Species	Status	tree Stratum	0 0
1					<u></u>	Sapling/Shrub Stratum	4 10
2						Herb Stratum	18 45
3						Woody Vine Stratum	0 0
			<u>.</u>				
Б <u></u>		· · · · · · · · · · · · · · · · · · ·				Dominance Test Workshe	at
						Number of Dominant	71
6			<u> </u>				
7						Species that are OBL,	
8						FACW, or FAC:	(A)
9						Total Number of Dominant	
10		·				Species Across all Strata:	3 (B)
			<u> </u>	Total Cover		Descent of Demission	(-/
						Percent of Dominant	
						Species that are OBL,	
Sapling/Shrub		45.0	Absolute %	Dominant	Indicator	FACW, or FAC:	0.00% (A/B)
Stratum	Plot Size (15 ft.)	Cover	Species	Status		
				000.00			
1 <u>Elaeagnus umb</u>	ellata		20	<u> </u>	UPL	Prevalence Index Worksho	et
2						Total % Cover of:	
3						OBL species 0 x 1	= 0
Ă		,				FACW species 10 v2	$= \frac{-}{20}$
<u>-</u>							
						FAU Species U X 3	
6						FACU species 60 x 4	=
7						UPL species 40 x 5	= _200
8						Column totals 110 (A)	460 (B)
9						Prevalence Index = B/A =	4.18
10				<u> </u>			
10				Tabal Causa			
				= Total Cover			N 4
						Hydrophytic Vegetation in	dicators:
Horb Stratum	Plot Sizo /	5.66)	Absolute %	Dominant	Indicator	Rapid test for hydrophyl	ic vegetation
nero Stratum	FIOL DIZE (JII.)	Cover	Species	Status	Dominance test is >50%	b
1 Solidado canad	lensis		60	Ϋ́Υ	FACU	Prevalence index is ≤3.0	o*
2 Daucus carota			20	<u> </u>	LIPI	Morphological adaptatio	ns* (provide
	A			<u> </u>		supporting data in Rome	arke or on a
<u>s</u> Phragnines aus	uaiis	<u> </u>	10	N	FACW	supporting data in rema	arks or on a
4						separate sheet)	
5						Problematic hydrophytic	vegetation*
6						(explain)	
7						*Indicators of hydro soil and wetts	ad hydrology must be
8						propert upless disturbed or prob	amatic
						present, unless disturbed of prob-	entatic
9						$\mathbf{D} = \mathbf{f} = \mathbf{i} \mathbf{k} \mathbf{i} = \mathbf{i} \mathbf{k} \mathbf{k} \mathbf{i} = \mathbf{i} \mathbf{k} \mathbf{k} \mathbf{i} \mathbf{k} \mathbf{i} \mathbf{k} \mathbf{i} \mathbf{k} \mathbf{k} \mathbf{k} \mathbf{k} \mathbf{k} \mathbf{k} \mathbf{k} k$	24
10						Definitions of Vegetation :	Strata:
11						Tree - Woody plants 3 in. (7.6 cm	or more in diameter at
12						breast height (DBH), regardless o	f height.
13							
14						Sapling/shrub - Woody plants les	is than 3 in. DBH and
15						greater than 3.28 ft (1 m) tall.	
¹³				Tatalo		1	
			90=	 Lotal Cover 		Herb - All herbaceous (non-wood)) plants, regardless of
				_		size, and woody plants less than	3.28 ft tall.
Woody Vine	Dist Cine /	20.4	Absolute %	Dominant	Indicator		
Stratum	Plot Size (30 n.)	Cover	Species	Status	Woody vines - All woody vines or	eater than 3 28 ft in
1						beight	
2						- Signa	
<u>_</u>							
<u>ه</u>						1	
4						Hydrophytic	
5						venetation	
				Tatalo			
			<u> </u>	= Total Cover		present? N	-
-						<u> </u>	
Remarks: (Include pho	oto numbers her	e or on a separa	ate sheet)				
· · · · · · · · · · · · · · · · · · ·							

SOIL

Sampling Point: upl-mdt-8/28/2018-05

(Inches) Color (moist) % Type* Loc** Texure Ref 0-6 10YR 5/2 100 Silty clay loam Some gravel i 0-6 10YR 5/2 100 Silty clay loam Some gravel i 0-6 10YR 5/2 100 Silty clay loam Some gravel i 0-6 10YR 5/2 100 Silty clay loam Some gravel i 0 0 0 0 Silty clay loam Some gravel i 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0<	dric Soils: 7) MLRA 147, 14
0-6 10YR 5/2 100 Silty clay loam Some gravel i 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	in soil dric Soils: 7) MLRA 147, 14
Image: Sector of the sector	dric Soils: 7) MLRA 147, 14
Image: Section of the section of th	dric Soils: 7) MLRA 147, 14
Image: Solution of the second structure of the	dric Soils: 7) MLRA 147, 14
Image: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains *Location: PL=Pore Lining, M=Matrix lydric Soil Indicators: Indicators for Problematic Hydrogen Sulfide (A4) Histisc Epipedon (A2) (MLRA 147, 148) Black Histic (A3) Thin Dark Surface (S9) Hydrogen Sulfide (A4) (MLRA 147, 148) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Redox Dark Surface (F6)	dric Soils: 7) MLRA 147, 14
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains *Location: PL=Pore Lining, M=Matrix Iydric Soil Indicators:	dric Soils: 7) MLRA 147, 14
Image: C = Concentration, D = Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains Type: C = Concentration, D = Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains 'Location: PL=Pore Lining, M=Matrix lydric Soil Indicators:	dric Soils: 17) MLRA 147, 14
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains Indicators: Indit Alt? Indicators: <td>dric Soils: 17) MLRA 147, 14</td>	dric Soils: 17) MLRA 147, 14
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains Ivgric Soil Indicators: Histisol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (A11) Redox Dark Surface (F6)	dric Soils: 17) MLRA 147, 14
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains 'Location: PL=Pore Lining, M=Matrix lydric Soil Indicators:	dric Soils: 17) MLRA 147, 14 F19)
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains 'Location: PL=Pore Lining, M=Matrix lydric Soil Indicators: Indicators for Problematic Hydric	dric Soils: 17) MLRA 147, 14
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains 'Location: PL=Pore Lining, M=Matrix Indicators: Indicators for Problematic Hydric Soil Indicators: Histisol (A1) Dark Surface (S7) Histic Epipedon (A2) (MLRA 147, 148) 2 cm Muck (A10) (MLRA 147) Black Histic (A3) Thin Dark Surface (S9) Piedmont Floodplain Soils (F Hydrogen Sulfide (A4) (MLRA 147, 148) (MLRA 136, 147) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Very Shallow Dark Surface (Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Other (Explain in Remarks)	dric Soils: i7) MLRA 147, 14
Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains 'Location: PL=Pore Lining, M=Matrix lydric Soil Indicators: Indicators for Problematic Hydrogen Sulfide (A4) Histic CA3 MLRA 147, 148) Black Histic (A3) Thin Dark Surface (S9) Hydrogen Sulfide (A4) (MLRA 147, 148) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Depleted Below Dark Surface (A11) Depleted Matrix (F3)	dric Soils: (7) MLRA 147, 14 F19)
Location: PL=Pore Lining, M=Matrix Indicators: Indicators for Problematic Hyce Histisol (A1) Dark Surface (S7) Histic Epipedon (A2) (MLRA 147, 148) 2 cm Muck (A10) (MLRA 147) Black Histic (A3) Thin Dark Surface (S9) Piedmont Floodplain Soils (F Hydrogen Sulfide (A4) (MLRA 147, 148) (MLRA 136, 147) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Very Shallow Dark Surface (Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Other (Explain in Remarks)	dric Soils: 17) MLRA 147, 14 F19)
Indicators: Indicators: Histisol (A1) Dark Surface (S7) Histisol (A1) Polyvalue Below Surface (S8) Histic Epipedon (A2) (MLRA 147, 148) Black Histic (A3) Thin Dark Surface (S9) Hydrogen Sulfide (A4) (MLRA 147, 148) Stratified Layers (A5) Loamy Gleyed Matrix (F2) 2 cm Muck (A10) (LRR N) Depleted Matrix (F3) Depleted Below Dark Surface (A11) Redox Dark Surface (F6)	dric Soils: 17) MLRA 147, 14 F19)
	i7) MLRA 147, 14 F19)
Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) (LRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic	(TF12)
Restrictive Layer (if observed):	
Remarks:	

Project/Site: Ashtabula - Erie West - Perry 345 k	/ T-Line City/County: Asht	abula	Report Name: <u>U</u> Sampling Date: 8	Jpland AEWP-02, 08 /28/2018	
Applicant/Owner: FirstEnergy	State: Ohio)	Sampling Point: u	pl-mdt-8/28/2018-04	
Investigator(s): M. Thomayer, T. Qualio; Jacobs	Section, Tow	nship, Range:			
Landform (hillslope, terrace, etc.): terrace	Local relief (concave	, convex, none)	none	Slope (%):	
Subregion (LRR or MLRA): Lake Erie Glaciated Pla	tLat.: 41.900049	Long.: -80.	764516	Datum: WGS 84	
Soil Map Unit Name: Udorthents		NWI Cla	assification: None		
Are climatic/hydrologic conditions of the site typical for	or this time of the year? Ye	s <u>X</u> No	(if no, exp	olain in remarks)	
Are vegetation X, soil X, or hydrolo	gysignificantly distu	irbed? Are	"normal circumsta	inces" No	
Are vegetation, soil, or hydrolo	gynaturally problem	natic? pres	sent?		
SUMMARY OF FINDINGS		(11 ח	ieeded, explain an	y answers in remarks	
Hydrophytic vegetation present? No	le the complete		otland2 No.		
hydric son present?	is the sampled a	area wiunin a w		_	
Wetland hydrology present? No					
Remarks:					
Upland point for adjacent PEM wetlands.					
Soil/vegetation recently disturbed.					
HYDROLOGY				·······	
Wetland Hydrology Indicators:		Secondary I	Indicators (minimu	m of two required)	
Primary Indicators (minimum of one is required; chec	k all that apply)	Surface	Soil Cracks (B6)		
Surface Water (A1) Tru	e Aquatic Plants (B14)	Sparsely	ly Vegetated Concave Surface (B8)		
High Water Table (A2)	drogen Sulfide Odor (C1)	Drainage	ige Patterns (B10)		
Saturation (A3)	dized Phizospheres on Living	Moss Tri	Trim Lines (B16)		
Water Marks (B1)	alzed Milzospheres on Living	Dry-Sea	son Water Table (C	:2)	
Sediment Deposits (B2)	sence of Reduced Iron (C4)	Cravfish	Burrows (C8)	/	
Drift Deposits (B3)	cent Iron Reduction in Tilled	Saturatio	on Visible on Aerial	Imagery (C9)	
Algal Mat or Crust (B4) Soi	Is (C6)	Stunted	or Stressed Plants	(D1)	
Iron Denosits (B5)	n Muck Surface (C7)	Geomor	nhic Position (D2)	()	
	or (Explain in Romarka)	Shallow	Aquitard (D3)		
Inundation Visible on Aerial	er (Explain in Remarks)		Aquitatu (D5)	0	
			ographic Relief (D4	+)	
water-Stained Leaves (B9)		FAC-Ne	utrai rest (D5)		
Aquatic Fauna (B13)					
Field Observations:					
Surface water present? Yes No	X Depth (inches):		Wetland		
Water table present? Yes No	X Depth (inches):	I	hydrology		
Saturation present? Yes No	XDepth (inches):		present?	N	
(includes capillary fringe)					
	all and about a second second		ileble.		
pescribe recorded data (stream gauge, monitoring w	eii, aeriai priotos, previous insj	pections), it avai	nable:		
Remarks:			·		

- È

		,				Sampling Point:	upi-mdt-8/28/2018-0
1						50/20 Thresholds	
	.		Absolute %	Dominant	Indicator		20% 50%
Tree Stratum	Plot Size (30 ft.)	Covor	Species	Statuc	Trop Stratum	
			Cover	Species	Status	Thee Stratum	0 0
1						Sapling/Shrub Stratum	0 0
2						Herb Stratum	18 45
3						Woody Vine Stratum	0 0
4							
						Dominance Test Worksho	
						Number of Dominant	el
<u> </u>						Number of Dominant	
7						Species that are OBL,	
8						FACW, or FAC:	0 (A)
9						Total Number of Dominant	
10						Species Across all Strata:	2 (B)
			- <u> </u>	Total Cover		Bergent of Deminent	(0/
				10101 00101		Percent of Dominant	
						Species that are OBL,	
Sapling/Shrub	Diet Size /	15.6 \	Absolute %	Dominant	Indicator	FACW, or FAC:	0.00% (A/B)
Stratum	Piot Size (15 IL.)	Cover	Species	Status		
			0010.	000000	0.0.00		
1 1						Prevalence Index Worksh	eet
2						Total % Cover of:	
3			•			OBL species 0 x 1	= 0
			•			FACW species 0 v 2	_ <u> </u>
<u> </u>			• •····			A speciesX3	- <u> </u>
<u> </u>						FACU species 90 x 4	=360
7						UPL species x 5	= 0
8						Column totals 90 (A)	360 (B)
9						Prevalence Index = B/A =	4 00
10							4.00
10			·	Tetal Cause	<u> </u>		
			=	- Total Cover			
						Hydrophytic Vegetation In	dicators:
Horb Stratum	Diet Size (E # \	Absolute %	Dominant	Indicator	Rapid test for hydrophy	tic vegetation
	FIOL SIZE (5 n.)	Cover	Species	Status	Dominance test is >50%	, – D
1 Andropogon vin	ainicus		70	Y	FACU	Prevalence index is <3	n•
2 Solidago canad	lancic		20	<u> </u>	EACU	Morphological adaptatic	ns* (provide
2 Solidago cariad	101313		20	<u> </u>	FACO	interprietogical adaptatio	
3						supporting data in Rema	arks or on a
4						separate sheet)	
5						Problematic hydrophytic	vegetation*
6						(explain)	
7						*Inductors of hudro coll and water	and builden to second but
· · · · · · · · · · · · · · · · · · ·	••••					indicators of nyone soil and wetla	ina nyarology must be
8						present, unless disturbed or probi	ematic
9					<u> </u>		
10						Definitions of Vegetation 3	Strata:
11						Tree - Woody plants 3 in. (7.6 cm) or more in diameter at
12						breast height (DBH), regardless o	f height.
13							
14						Sapling/shrub - Woody plants les	s than 3 in. DBH and
45			·			greater than 3.28 ft (1 m) tall.	1
¹⁰				T + + 0			
			90 =	 I otal Cover 		Herb - All herbaceous (non-wood	y) plants, regardless of
						size, and woody plants less than 2	3.28 ft tall.
Woody Vine		20.4	Absolute %	Dominant	Indicator		
Stratum	Plot Size (30 ft.)	Cover	Species	Status	Woody vines - All woody vines a	reater than 3.28 ft in
1			•••••	-p-0.00		hought	cater than 5.20 ft in
			·			neguc.	
<u>ه</u>						1	
4			_	_	_	Hydrophytic	
5						vegetation	
			·			vegetation	
			=	 Fotal Cover 		present? N	<u> </u>
Remarks: (Include pho	oto numbers her	e or on a separ	ate sheet)				
,							

Sampling Point: upl-mdt-8/28/2018-04

	matrix		Rec	lox Feat	tures	1	Texture	Remarks
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Remains
0-3	10YR 2/2	100					Rocky	Soil recently disturbed
				ł				
				Ī				
				İ — —	1			
		<u> </u>		<u> </u>				
				<u> </u>			<u> </u>	
ype: C=C	oncentration, D=	Depletic	n, RM=Reduced	i Matrix,	CS=Cov	ered or	Loated Sand Grains	
Location: I	PL=Pore Lining,	M=Matr	IX.					
ydric Soil	Indicators:						Indicators fo	r Problematic Hydric Soils:
			Dark St	urface (S	57)			
Histisol	(A1)		Polyval	ue Belov	w Surface	e (S8)	2 cm Muc	sk (A10) (MLRA 147)
Histic E	pipedon (A2)		(MLRA	147, 14	.8)		Coast Pra	airie Redox (A16) (MLRA 147, 14
Black H	istic (A3)		Thin Da	ark Surfa	ace (S9)		Piedmont	Floodplain Soils (F19)
Hydroge	en Sulfide (A4)		(MLRA	147, 14	-8)		(MLRA 1	36, 147)
_Stratifie	d Layers (A5)		Loamy	Gleyed	Matrix (F	2)	Very Sha	llow Dark Surface (TF12)
2 cm Mi	uck (A10) (LRR	N)	Deplete	d Matrix	(F3)		Other (Ex	plain in Remarks)
_ Deplete	d Below Dark Si	urface (A	(11)Redox	Dark Su	rface (F6	i)		
Thick D	ark Surface (A12	2)	Deplete	d Dark	Surface (F7)		
Sandy N	Aucky Mineral (S	51)	Redox	Depress	sions (F8))		
_(LRR N	, MLRA 147, 14	8)	Iron-Ma	inganes	e Masses	s (F12) (I	LRR N, MLRA 136)	
Sandy (Gleyed Matrix (S	4)	Umbric	Surface	e (F13) (N	ILRA 13	6, 122)	
_Sandy F	Redox (S5)		Piedmo	nt Flood	Iplain So	ils (F19)	(MLRA 148)	
Stripped	d Matrix (S6)		Red Pa	rent Ma	terial (F2	1) (MLR.	A 127, 147)	
ndicators of	of hydrophytic ve	egetation	and wetland hy	drology	must be	present,	unless disturbed or pr	oblematic
	<i></i>	N						
estrictive L	ayer (if observe	a):						
ype: <u>ro</u>	ocky				-		Hydric soil pres	ient? N
epth (inchi	es): <u>3</u>				-			
emarks:								

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SOIL

		Report Name: Upland AEWP-03
Project/Site: Ashtabula - Erie West - Perry 345	5 kV T-Line_City/County: Ashta	abula Sampling Date: 8/28/2018
Applicant/Owner: FirstEnergy	State: Ohio	Sampling Point: upl-mdt-8/28/2018-03
Investigator(s): M. Thomayer, T. Qualio; Jacobs	Section, I owi	nship, Range: N/A
Landform (fillislope, terrace, etc.): terrace	Local relier (concave,	Long : 90 76321215
Soil Map Unit Name: Udorthents		NWI Classification: None
Are climatic/hydrologic conditions of the site typica	I for this time of the year? Yes	X No (If no, explain in remarks)
Are vegetation X, soil X, or hydr	ologysignificantly distur	bed? Are "normal circumstances" Yes
Are vegetation, soil, or hydr	ology naturally problem	atic? present?
SUMMARY OF FINDINGS		
Hydrophytic vegetation present? No		
Hydric soil present? No	Is the sampled a	rea within a wetland? No
Wetland hydrology present? No		
Remarks:		
Upland point for adjacent PEM wetland.		
Soil/vegetation recently disturbed.		
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required: ch	neck all that apply)	Surface Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)	Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Soturation (A2)		Mass Trim Lines (B16)
Water Marke (P1)	Oxidized Rhizospheres on Living	Noss Third Lines (BTO)
Sediment Deposits (B2)	Presence of Reduced Iron (C4)	Cravfish Burrows (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tilled	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Soils (C6)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomorphic Position (D2)
Inundation Visible on Aerial	Other (Explain in Remarks)	Shallow Aguitard (D3)
Imagery (B7)	· · · · · · · · · · · · · · · · · · ·	Microtopographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Neutral Test (D5)
Aquatic Fauna (B13)		
Field Observations:		
Surface water present? Yes No	D X Depth (inches):	Wetland
Water table present? Yes No	D X Depth (inches):	hydrology
Saturation present? Yes No	Depth (inches):	present? <u>N</u>
(includes capillary fringe)		
Describe recorded data (stream gauge, monitoring	well, aerial photos, previous insp	ections), if available:
	,	, · · · · · · · · · · · · · · · · · · ·
Remarks:		
L		

	•	1113			Sampling Point:	upl-mdt-8/28/2018
Plot Size (30 ft.	Absolute % Cover	Dominant Species	Indicator Status	50/20 Thresholds Tree Stratum Sapling/Shrub Stratum Herb Stratum Woody Vine Stratum	20% 50% 0 0 0 0 18 45 0 0
					Dominance Test Workshee Number of Dominant Species that are OBL, FACW, or FAC: Total Number of Dominant Species Across all Strata: Percent of Dominant	(A) (B)
Plot Size (15 ft.) Absolute %	Dominant Species	Indicator Status	Species that are OBL, FACW, or FAC:	<u>50.00%</u> (A/B)
					Prevalence Index WorksheTotal % Cover of:OBL species0X 1FACW species0X 2FAC species70X 3FACU species20X 4UPL species0Column totals9090(A)Prevalence Index = B/A =	= 0 = 210 = 210 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 =
			Total Cover	<u> </u>	Hydrophytic Vegetation In	dicators:
Plot Size (dii sis	5 ft.) Absolute % Cover 70 20 	Dominant Species Y Y	Indicator Status FAC FACU	Rapid test for hydrophyt Dominance test is >50% Prevalence index is <3.(Morphological adaptatio supporting data in Rema separate sheet) Problematic hydrophytic (explain) *Indicators of hydric soil and wetla present, unless disturbed or problematic	ic vegetation * ns* (provide arks or on a vegetation* nd hydrology must be ematic
					Definitions of Vegetation S Tree - Woody plants 3 in. (7.6 cm) breast height (DBH), regardless of	Strata: i or more in diameter at f height.
		= <u> </u>			Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall	s than 3 in. DBH and
Plot Size (30 ft.	90= Absolute % Cover	 Total Cover Dominant Species 	Indicator Status	Herb - All herbaceous (non-woody size, and woody plants less than 3 Woody vines - All woody vines gr height.	/) plants, regardless of 0.28 ft tall. eater than 3 28 ft in
	·			···	Hydrophytic vegetation	
	Plot Size (Plot Size (30 ft.	Plot Size (30 ft.) Absolute % Cover	Plot Size (30 ft. Absolute % Cover Dominant Species	Plot Size (30 ft.) Absolute % Cover Dominant Species Indicator Status	Plot Size (30 ft.) Absolute % Cover Dominant Species Indicator Status Tree Stratum Sapling/Shrub Stratum Image: Status Image: Status Tree Stratum Image: Status Image: Status Image: Status Image: Status Image: Status Image: Status <t< td=""></t<>

SOIL

Sampling Point: upl-mdt-8/28/2018-03

Depth	Matrix		Rec	lox Feat	tures		Tau		Bamarka
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	Tex	ure	Remarks
0-3	10YR 2/2	100					Roc	cky	Soil recently disturbed
						ļ			
						 			
						L			
									1 1
Гуре: С=С	oncentration, D=	Depletio	on, RM≠Reduced	Matrix,	CS=Cov	/ered or	Coated Sand	I Grains	
Location:	PL=Pore Lining,	M=Matr	ix						
ydric Soil	Indicators:						Indi	cators for	Problematic Hydric Soils:
			Dark Sι	urface (S	67)				-
Histisol	(A1)		Polyval	ue Belov	w Surfac	e (S8)		2 cm Mucl	k (A10) (MLRA 147)
Histic E	pipedon (A2)		(MLRA	147, 14	8)			Coast Pra	irie Redox (A16) (MLRA 147, 14
-Black H	listic (A3)		Thin Da	irk Surfa	ice (S9)			Piedmont	Floodplain Soils (F19)
-Hydrog	en Sulfide (A4)			147, 14	8)	~		(MLRA 13	6, 147)
_Straume	a Layers (Ab)	MN .	Loamy	Gleyea I d Motriv	Matrix (F	2)		Very Shall	ow Dark Surface (TF12)
2 cm wi	d Below Dark Si	n) Irface (A	(11) Bedox (hank Su	rface (Ef	3			Jain in Remarks)
Thick D	ark Surface (A12	2) 2)	Denlete	d Dark S	Surface ((F7)			
Sandy I	Mucky Mineral (S	, (1)		Depress	ions (F8)			
(LRR N	, MLŔA 147, 148	3)	Iron-Ma	nganes	e Masse	, s (F12) (LRR N, MLR	A 136)	
Sandy (Gleyed Matrix (S	4)	Umbric	Surface	(F13) (N	ILRA 13	6, 122)	,	
Sandy F	Redox (S5)		Piedmo	nt Flood	Iplain So	ils (F19)	(MLRA 148)		
Stripped	d Matrix (S6)		Red Pa	rent Mal	terial (F2	1) (MLR	A 127, 147)		
	•·· · · ·								
ndicators (of hydrophytic ve	getation	and wetland hy	drology i	must be	present,	unless distur	bed or pro	oblematic
estrictive I	aver (if observe	٩ŀ							
vpe: a	ravel	u).					Hydric	soil pres	ent? N
epth (inch	es): 3				-			0011 p.00	
	,				-				
emarks:									

Project/Site: Ashtabula - Erie We	est - Perry 345 kV T-Lii	ne City/County:	Ashtabula	Report Name: Sampling Date:	Upland AEWP-04 8/28/2018		
Applicant/Owner: FirstEnergy	K I I	State:	Ohio	Sampling Point:	upi-mat-8/28/2018-02		
Investigator(s): M. Inomayer, I. Qi	Jallo; Jacobs	Section	i, Township, Rang		Slope (%): 2		
Subracion (LRR or MLRA): Lake E	tie Glaciated Plat Lat :		Long :	-80 75997358	Ope (76). 2		
Soil Map Unit Name: Painsville fine s	andy loam, 0 - 2 perce	ent slopes	NWI	Classification: Nor	1e		
Are climatic/hydrologic conditions of	the site typical for this	time of the year?	Yes X	No (If no, e	xplain in remarks)		
Are vegetation soil	. or hydrology	significantly	v disturbed?	Are "normal circums	stances" Yes		
Are vegetation , soil	, or hydrology	naturally pr	, oblematic?	present?			
				(If needed, explain a	any answers in remarks		
SUMMARY OF FINDINGS							
Hydrophytic vegetation present?	No						
Hydric soil present?	No	Is the sam	pled area within	a wetland?	lo		
Wetland hydrology present?	No				<u> </u>		
······							
Remarks:							
Upland point for adjacent PE	M wetland.						
Wotland Hydrology Indigators:			Socord	n Indicatore (minin	um of two required)		
Brimany Indicators (minimum of one	in required; check all th	ant apply)	Seconda	ary mulcators (minim	ium of wo required)		
		at apply)		ace Sull Cracks (BO)	0. feet (D0)		
	True Aqua	atic Plants (B14)	Spar	Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2)	Hydrogen	Suffide Odor (C1)	Urai	nage Patterns (B10)			
Saturation (A3)	Oxidized	Rhizospheres on Liv	ving <u>Mos</u>	s Trim Lines (B16)			
Water Marks (B1)	Roots (C3	3)	Dry-	Season Water Table	(C2)		
Sediment Deposits (B2)	Presence	of Reduced Iron (C	(4)Cray	fish Burrows (C8)			
Drift Deposits (B3)	Recent In	on Reduction in Tille	ed Satu	ration visible on Aeri	al imagery (C9)		
	30iis (Co)			marchia Desition (D2	(DT)		
			Geo	morphic Position (D2)		
Inundation Visible on Aerial	Other (Ex	piain in Remarks)		iow Aquitaro (D3)	5.4		
Imagery (B7)			Micro	otopographic Relief (D4)		
Water-Stained Leaves (B9)			FAU	-Neutral Test (D5)			
Aquatic Fauna (B13)							
Field Observations:							
Surface water present? Yes	No <u>X</u>	Depth (inches):		Wetland			
Water table present? Yes	<u>No X</u>	Depth (inches):		hydrology			
Saturation present? Yes	No <u>X</u>	Depth (inches):		present?	<u> </u>		
(includes capillary fringe)							
Describe recorded data (stream gau	ge, monitoring well, ae	rial photos, previou	us inspections), if	available:			
Remarks:							

		anies of plai				Sampling Point:	upl-mdt-8/28/20
Tree Stratum	Plot Size (30 ft.)	Absolute % Cover	Dominant Species	Indicator Status	50/20 Thresholds Tree Stratum Sapling/Shrub Stratum	20% 50% 0 0 4 10
						Herb Stratum Woody Vine Stratum	20 50 4 10
	· · · · ·					Number of Dominant Species that are OBL, FACW, or FAC:	0(A)
·				Total Cover		Species Across all Strata:	<u> </u>
Sapling/Shrub	Plot Size (15 ft.)	Absolute %	Dominant	Indicator	Species that are OBL, FACW, or FAC:	0.00%(A/I
Stratum Rhamnus cath	nartica		20 Cover	Species Y	Status FACU	Prevalence Index Workshe	eet
						OBL species 0 x 1 FACW species 0 x 2 FAC species 0 x 3 FACU species 120 x 4	= 0 = 0 = 0 = 480
				Total Cavar		UPL species 0 x 5 Column totais 120 (A) Prevalence Index = B/A =	$= \frac{0}{480}$ (B) 4.00
Herb Stratum Plot Size(5ft.) Solidago canadensis		Absolute % Cover 100	Dominant Species Y	Indicator Status FACU	Hydrophytic Vegetation In Rapid test for hydrophyl Dominance test is >50%	dicators: lic vegetation 0*	
	<u> </u>		· · · · · · · · · · · · · · · · · · ·			Morphological adaptatio supporting data in Rema separate sheet) Problematic hydrophytic (explain)	ins" (provide arks or on a : vegetation*
						*Indicators of hydric soil and wetla present, unless disturbed or proble	ind hydrology must b ematic
	····					Definitions of Vegetation S Tree - Woody plants 3 in. (7 6 cm breast height (DBH), regardless o	Strata:) or more in diameter f height.
						Sapling/shrub - Woody plants les greater than 3.28 ft (1 m) tall.	is than 3 in. DBH an
Woody Vine		20.6 \	<u> </u>	Total Cover	Indicator	Herb - All herbaceous (non-wood) size, and woody plants less than 3	y) plants, regardiess 3.28 ft tali.
Stratum Rubus sp.	Plot Size (30 ft.)	Cover 20	Species Y	Status	Woody vines - All woody vines gr height.	eater than 3.28 ft in
8			·			Hydrophytic vegetation	
·			20 -	Total Cover		present? N	
SOIL

Sampling Point: upl-mdt-8/28/2018-02

Depth	Matrix		Red	lox Fea	tures		Тоу	rturo	Remarks		
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	10,	uure	Remarks		
0-10	10YR 4/3	100			1		Silt Loam				
					1		, ···		········		
									-		
									· · · · · · · · · · · · · · · · · · ·		
							}				
					[
					<u> </u>						
					1						
					1		1				
Type: C=C	oncentration. D=	Depletic	on, RM=Reduced	Matrix.	CS=Co	vered or	Coated San	d Grains	1		
Location:	PL=Pore Linina.	M=Matr	ix								
vdric Soil	Indicators:						Ind	icators for	Problematic Hydric Soils:		
yane oon	indicators.		Dark Si	inface (S	57)				r toblematic riyune cons.		
Histisol	(A1)		Polyval	ue Belo	w Surfac	e (S8)		2 cm Muck	(A10) (MLRA 147)		
Histic E	pipedon (A2)		(MLRA	147, 14	8)	- ()		Coast Prai	rie Redox (A16) (MLRA 147, 14		
Black H	listic (A3)		Thin Da	irk Surfa	ace (S9)			Piedmont I	Floodplain Soils (F19)		
 Hydrog	en Sulfide (A4)		(MLRA	147, 14	8)		(MLRA 136, 147)				
Stratifie	d Layers (A5)		Loamy	Gleyed	Matrix (F	2)	Very Shallow Dark Surface (TF12)				
2 cm M	uck (A10) (LRR	N)	Deplete	d Matrix	(F3)	•		Other (Exp	lain in Remarks)		
 Deplete	d Below Dark Su	Irface (A	(11) Redox I	Dark Su	rface (F6	5)					
Thick D	ark Surface (A12	2)	Deplete	d Dark	Surface i	(F7)					
Sandy I	Mucky Mineral (S	S1)	Redox	Depress	ions (F8)					
(LRR N	, MLRA 147, 14	8)	Iron-Ma	inganes	e Masse	s (F12) (LRR N, MLF	RA 136)			
Sandy (Gleyed Matrix (S	4)	Umbric	Surface	e (F13) (N	ILRA 13	36, 122)				
Sandy I	Redox (S5)		Piedmo	nt Flood	Jplain So	ils (F19)	(MLRA 148)			
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2	21) (MLR	A 127, 147)				
ndicators	of hydrophytic ve	getation	and wetland hy	drology	must be	present,	unless distu	irbed or pro	blematic		
	<i>(</i> ' F - h	- O .									
estrictive i	ayer (if observe	a):									
ype: g	ravel				-		Hydrie	c soil prese	ent? <u>N</u>		
ieptn (inch	es): <u>10</u>				-						
omorke:											
emarks:											
emarks:											
emarks:											
emarks:											

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WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

			Report Name: U	pland AEWP-05
Project/Site: Ashtabula - Erie West - Perry 345 KV	I-Line City/County: A	shtabula	Sampling Date: 8/	28/2018
Applicant/Owner: FirstEnergy	State: O)hio	Sampling Point: up	ol-mdt-8/28/2018-01
Investigator(s): M. Inomayer, I. Qualio, Jacobs	Section, I	i ownsnip, Kange:	N/A	Slama (9/) - 0
Subregion (LRR or MLRA): Lake Frie Glaciated Plat	at · 41.89007899	ave, convex, none)	7589271	_ Slope (%): 2
Soil Map Unit Name: Urban land		NWI Cla	assification: None	
Are climatic/hydrologic conditions of the site typical for	this time of the year?	Yes X No	(If no, exp	lain in remarks)
Are vegetation, soil, or hydrology	/ significantly di	isturbed? Are	"normal circumsta	nces" <u>Yes</u>
Are vegetation, soil, or hydrology	naturally prob	lematic? pre	sent? seeded, explain ans	answers in remarks
SUMMARY OF FINDINGS		(11)		
Hydrophytic vegetation present? No				
Hydric soil present? No	is the sample	ed area within a w	retland? No	_
Wetland hydrology present? No				
Remarks:				
Upland point for adjacent PEM wetland.				
HYDROLOGY				
wetland Hydrology indicators:	-11 44 4 1 - 3	Secondary	Indicators (minimur	n of two required)
Primary Indicators (minimum of one is required; check	all that apply)	Surface	Soil Cracks (B6)	
Surface Water (A1)	Aquatic Plants (B14)	Sparsely	y Vegetated Concav	e Surface (B8)
High Water Table (A2) Hydro	ogen Sulfide Odor (C1)	Drainag	e Patterns (B10)	
Saturation (A3) Oxidi	zed Rhizospheres on Living	gMoss Tr	im Lines (B16)	
Water Marks (B1) Roots	s (C3)	Dry-Sea	ison Water Table (C	2)
Sediment Deposits (B2) Prese	ence of Reduced Iron (C4)	Crayfish	Burrows (C8)	
Drift Deposits (B3)	nt Iron Reduction in Tilled	Saturati	on Visible on Aerial I	magery (C9)
Algal Mat or Crust (B4) Soils	(C6)	Stunted	or Stressed Plants (D1)
Iron Deposits (B5)	Muck Surface (C7)	Geomor	phic Position (D2)	
Inundation Visible on AerialOther	r (Explain in Remarks)	Shallow	Aquitard (D3)	
Imagery (B7)		Microtop	ographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Ne	utral Test (D5)	
Aquatic Fauna (B13)				
Field Observations:				
Surface water present? Yes No	X Depth (inches):		Wetland	
Water table present? Yes No	X Depth (inches):		hydrology	
Saturation present? Yes No	X Depth (inches):		present?	N
(includes capillary fringe)				
Describe recorded data (stream dauge, monitoring well	, aerial photos, previous i	inspections), if ava	ilable:	
Pomotko:				
remarks:				
]				
			. <u></u>	

VEGETATION - Use scientific names of plants

						Sampling Point:	upi-mat-8/28/2018-0
						50/20 Thresholds	
T			Absolute %	Dominant	Indicator	1	20% 50%
Tree Stratum	Plot Size (30 ft.) Cover	Species	Status	Tree Stratum	0 0
1			00101	00000	•	Sapling/Shrub Stratum	0 0
2						Herb Stratum	16 40
2						Meedy Ving Stratum	0 40
3						woody vine Stratum	0 0
4							
5				<u> </u>		Dominance Test Workshe	et
6		_			<u> </u>	Number of Dominant	
7						Species that are OBL,	
8						FACW, or FAC:	0 (A)
9						Total Number of Dominant	
10						Species Across all Strata:	1 (B)
				Total Cover		Percent of Dominant	
						Species that are OPI	
Castler (Charle				Deminant	la dia atau		0.000/ (A/D)
Sapling/Shrub	Plot Size (15 ft.	Absolute %	Dominant	Indicator	FACW, of FAC:	<u> </u>
Stratum		10 11.	' Cover	Species	Status		
1						Prevalence Index Worksh	eet
2						Total % Cover of:	
			<u></u>				- 0
<u>з</u>	·						
4						FACVY species U X 2	<u> </u>
5	"					FAU species 20 x 3	= <u>60</u>
6						FACU species 60 x 4	= _240
7						UPL species 0 x 5	i= <u>0</u>
8						Column totals 80 (A)) <u>300</u> (B)
9						Prevalence Index = B/A =	3.75
10						}	
			=	Total Cover			
						Hydronhytic Vegetation In	dicators:
			Absolute %	Dominant	Indicator	Rapid test for hydrophy	tic vegetation
Herb Stratum	Plot Size (5 ft.		Species	Statua	Dominance test is >50%	Lo vegetatori
1 Calidana cana	dancia		Cover	Species		Drouologog index in <2	° ^*
1 Solidayo cana				<u> </u>	FACU	Merobological adaptatic	U DDS ⁺ (DTOVIdo
2 <u>Anaropogon g</u>	erardii		20	·	FAC	Morphological adaptatic	ns (provide
3						supporting data in Rem	arks or on a
4						separate sheet)	
5						Problematic hydrophytic	c vegetation*
6						(explain)	
7						*Indicators of hydric soil and wetl	and hydrology must be
8						present unless disturbed or probl	lematic
å	~~~~						
10						Definitions of Vegetation	Strata:
11		·····			<u> </u>	Tree Mondy plants 3 in (7.6 cm	or more in diameter of
40						breast boubt (DBH) regardless of	of height
12						breast height (DBH), regardless o	a neight.
13					<u> </u>	Sanling/shruh - Woody plants to	ss than 3 in INSH and
14				<u></u>		oreater than 3.28 ft (1 m) tall	
15						groutes than e.z.e it (1 my tail.	
			80 =	 Total Cover 		Herb - All herbaceous (non-wood	v) plants, regardless of
						size, and woody plants less than	3.28 ft tall.
Woody Vine		00.0	, Absolute %	Dominant	Indicator	allo, and woody planta lood that	
Stratum	Plot Size (30 ft.) Cover	Species	Status	Woody vines - All woody vines a	reater than 3 28 ft in
1			0010.			height	
2						2 3 m	
3							
l							
4						Hydrophytic	
5						vegetation	
				Total Cover		present? N	
			- <u> </u>				-
Remarks: (Include p	hoto numbers ber		narate sheet)		.		
Nama Craval de		- or on a se	parate sheet)				
inone. Gravel driv	veway.						

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SOIL

Sampling Point: upl-mdt-8/28/2018-01

Depth	Matrix		Rec	lox Feat	ures		Tautura	Domatka	
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	rexture	Remarks	
0-6	10YR 3/3	100						Gravel in soil	
	Í					1			
						1			
								-	
					┨────				
		- · · · · -			ļ				
								1	
*Type: C=C	oncentration. D=	Depletic	n. RM=Reduced	Matrix.	CS=Cov	vered or	Coated Sand Grains	1	
*Location:	PL=Pore Linina.	M=Matr	ix	,					
Hydric Soil	Indicators:						Indicators for	Problematic Hydric Soils:	
iyano oon	indicator o.		Dark St	uface (S	57)		in a load of o to	, toblematic tryane conc.	
Histisol	(A1)		Polyvalı	ue Belov	v Surfac	e (S8)	2 cm Muc	< (A10) (MLRA 147)	
Histic E	pipedon (A2)		(MLRA	147.14	8)	()	Coast Pra	irie Redox (A16) (MLRA 147, 148	
Black H	listic (A3)		Thin Da	irk Surfa			Piedmont	Floodplain Soils (F19)	
Hydrog	en Sulfide (A4)		(MLRA	147, 14	8)		(MLRA 13	6, 147)	
Stratifie	d Layers (A5)		Loamy	Gleyed	Matrix (F	2)	Very Shall	ow Dark Surface (TF12)	
2 cm M	uck (A10) (LRR I	N)	Deplete	d Matrix	(F3)		Other (Exp	plain in Remarks)	
Deplete	ed Below Dark Su	irface (A	(11) Redox I	Dark Su	rface (F6	5)	_		
Thick D	ark Surface (A12	2)	Deplete	d Dark	Surface ((F7)			
Sandy	Mucky Mineral (S	1)	Redox I	Depress	ions (F8)			
(LRR N	, MLRA 147, 148	3)	Iron-Ma	inganes	e Masse	s (F12) (LRR N, MLRA 136)		
Sandy	Gleyed Matrix (S4	4)	Umbric	Surface	(F13) (N	/LRA 13	6, 122)		
Sandy i	Redox (S5)		Piedmo	nt Flood	Iplain So	ils (F19)	(MLRA 148)		
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (F2	1) (MLR	A 127, 147)		
	•••••								
Indicators	of hydrophytic ve	getatior	and wetland hyd	arology	must be	present,	uniess disturbed or pro	blematic	
								· · · · · · · · · · · · · · · · · · ·	
Restrictive	l aver (if observe	٩ŀ							
Tune o	ravel	<i>a</i>).					Hydric soil pres	ent? N	
Depth (inch	es): 6				-		rijuno son pres		
Doput (mon					-				
Remarks:						1			

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

				Report Name: <u>U</u>	Jpland AEWP-06		
Project/Site: Ashtabula - Erie West - I	Perry 345 kV T-Lir	ne_City/County:	Ashtabula	Sampling Date: 8	/29/2018		
Applicant/Owner: FirstEnergy		State:	Ohio	Sampling Point: u	pl-mdt-8/29/2018-01		
Investigator(s): <u>M. Thomayer, T. Qualio</u> ;	Jacobs	Section	i, Township, Ran	ge: <u>N/A</u>	01		
Landform (Illislope, terrace, etc.): terra	ICE	Local relief (cor	icave, convex, no	one): none	Slope (%): <u>6</u>		
Soil Map Unit Name: Otisville gravelly sar	idy loam, 6 - 12 p	ercent slopes	Long.: NW	-60.7603 I Classification: <u>None</u>	Datum:B		
Are climatic/hydrologic conditions of the s	ite typical for this	time of the year?	Yes X	No(If no, exp	plain in remarks)		
Are vegetation, soil, soil	, or hydrology , or hydrology	significantly pr	v disturbed? oblematic?	Are "normal circumsta present? (If needed, explain an	ances" <u>Yes</u> y answers in remarks		
SUMMARY OF FINDINGS					1		
Hydrophytic vegetation present? N	0						
Hydric soil present? N	0	Is the sam	pled area within	a wetland? No			
Wetland hydrology present? N	0						
Demodra							
Upland point for adjacent PEM we	etland.						
HYDROLOGY							
Wetland Hydrology Indicators:			Second	ary Indicators (minimu	m of two required)		
Primary Indicators (minimum of one is rec	juired; check all th	at apply)	Sur	face Soil Cracks (B6)			
Surface Water (A1)	True Aqua	atic Plants (B14)	Spa	rsely Vegetated Concav	ely Vegetated Concave Surface (B8)		
High Water Table (A2)	Hydrogen	Sulfide Odor (C1)	Dra	inage Patterns (B10)	age Patterns (B10)		
Saturation (A3)	Oxidized I	Rhizospheres on Liv	vingMos	ss Trim Lines (B16)			
Water Marks (B1)	Roots (C3	3)	Dry	-Season Water Table (C	(2)		
Sediment Deposits (B2)	Presence	of Reduced Iron (C	4)Cra	yfish Burrows (C8)			
Drift Deposits (B3)	Recent Irc	on Reduction in Tille	d Sati	uration Visible on Aerial	Imagery (C9)		
Algal Mat or Crust (B4)	Soils (C6)		Stu	nted or Stressed Plants	(D1)		
fron Deposits (B5)	Thin Muc	(Surface (C7)	Geo	marphic Pasition (D2)			
Inundation Visible on Aerial	Other (Ex	plain in Remarks)	Sha	llow Aquitard (D3)			
Imagery (B7)			Mic	rotopographic Relief (D4	•)		
Water-Stained Leaves (B9)			FAC	C-Neutral Test (D5)			
Aquatic Fauna (B13)							
Field Observations:							
Mater table present? Yes		Deptn (inches): Depth (inches):		wettand bydrology			
Saturation present? Tes		Depth (inches):		nresent?	м		
(includes capillary fringe)		Depth (hioles).		Present: _			
Describe recorded data (stream gauge, m	ionitoring well, aei	rial photos, previou	is inspections), if	available:			
Remarks:							

1

VEGETATION - Use scientific names of plants

							Sampling Point:	upl-mdt-8/29/2018-0
							50/20 Thresholds	
				Absolute %	Dominant	Indicator	1	20% 50%
I ree Stratum	Plot Size (30 ft.)	Cover	Species	Status	Tree Stratum	0 0
4				00461	opecies	Jaius	Conling/Chrub Chesture	0 0
							Saping/Shrub Stratum	0 0
2							Herb Stratum	8 20
3					<u> </u>		Woody Vine Stratum	20 50
4								
5							Dominance Test Workshe	et
6							Number of Dominant	
7							Species that are OBL.	
8							FACW, or FAC:	1 (A)
9							Total Number of Dominant	(* */
10							Species Across all Strata	3 (B)
				=	Total Cover		Descent of Descinent	(5)
							Percent of Dominant	
						.	Species that are OBL,	
Sapling/Shrub	Plot Size (15 ft)	Absolute %	Dominant	Indicator	FACW, or FAC:	<u>33.33%</u> (A/B)
Stratum	1 101 0120 ('	Cover	Species	Status		
1							Prevalence Index Worksh	oot
<u>`</u>							Total 0/ Course of	
2							I otal % Cover of:	•
³								=
4						<u> </u>	ACW species x 2	=
5							FAC species 30 x 3	=
6							FACU species 40 x 4	= <u>160</u>
7							UPL species 0 x 5	= 0
8							Column totals 70 (A)	250 (B)
9							Prevalence Index = B/A =	3.57
10								
				0 =	Total Cover			
							Hydronhytic Vegetation In	dicators:
				Absolute %	Dominant	Indicator	Rapid test for hydrophy	lic vegetation
Herb Stratum	Plot Size (5 ft.)	Cover	Species	Statue	Dominance test in >50%	is vegetation
1 Solidago capa	dancis			40	Species	EACU	Dominance test is >307) ()*
Solidayo canad	Jensis			40		FACU	Morphological adaptatis	J nat (provido
2							Morphological adaptatio	ns (provide
3				<u></u>			supporting data in Rem	arks or on a
4							separate sheet)	
5				<u> </u>			Problematic hydrophytic	vegetation*
6							(explain)	
7							*Indicators of hydric soil and wetla	and hydrology must be
8							present, unless disturbed or probl	ematic
9						••••••		
10					······································		Definitions of Vegetation S	Strata:
11							Tree - Woody plants 3 in. (7.6 cm) or more in diameter at
12						<u> </u>	breast height (DBH), regardless o	f height.
13				<u> </u>				-
14			<u> </u>		·		Sapling/shrub - Woody plants les	ss than 3 in. DBH and
15							greater than 3.28 ft (1 m) tall.	
· · · · · · · · · · · · · · · · · · ·					Total Course	<u> </u>		
				40 =	rotal Cover		Herb - All herbaceous (non-wood) plants, regardless of
Mandulling				Aboolite 0/	Dominant	Indiantes	size, and woody plants less than 3	3.28 ft tall.
woody vine	Plot Size (30 ft.	}	ADSOIUTE %	Dominant	indicator	1	
Stratum			,	Cover	Species	Status	Woody vines - All woody vines ge	eater than 3.28 ft in
1 <u>Rubus sp.</u>				70	<u> </u>		height.	
2 Toxicodendron	radicans			30	Y	FAC	L	
3								
4							Hydrophytic	
5							variation	
⁻	····· · ·						vegetation	
				100 =	Total Cover		present? <u>N</u>	-
Remarks: (Include ph	ioto numbers her	e or on a se	parat	e sheet)				
1								

SOIL

Sampling Point: upl-mdt-8/29/2018-01

Inches) Color (moist) % Color (moist) % Type* Loc** Type*	Depth	Matrix		Re	dox Feat	tures		Те		Remarks
0-8 19YR 2/2 100	(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**	16.		
Image: Sector of the sector	0-8	10YR 2/2	100					Silty Loa	m į	
			1							
ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains				1		1	1			
ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains			1							
ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains .ocation: PL=Pore Lining, M=Matrix ydric Soil Indicators: Histisol (A1) Histisol (A2) Histisol (A2) Straitfed Layers (A5) Straitfed Layers (A5) Depleted Matrix (F2) Very Shallow Dark Surface (A1) Depleted Matrix (F2) Depleted Dark Surface (F7) Straitifed Layers (A5) Leary Gleyed Matrix (F2) Depleted Dark Surface (F6) Thick Dark Surface (F1) Red Natrix (F3) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) Incon-Manganese Masses (F12) (LRR N, MLRA 145, 147) Straiped Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Gleyed Matrix (S4) Itermont Floodplain Solis (F19) (MLRA 147, 148) Striped Matrix (S6) Red Parent Material (F21) (MLRA 147, 148) Striped Matrix (S4) Umbric Surface (F13) Mctare (F13) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 147, 148) Striped Matrix (S6)										
ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains										
ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains										·····
ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains cocation: PL=Pore Lining, M=Matrix ydric Soil Indicators: Histisol (A1) Dark Surface (S7) Polyvalue Below Surface (S8) 2 cm Muck (A10) (MLRA 147, 148) Black Histic (A3) Thin Dark Surface (S9) 2 cm Muck (A10) (MLRA 147, 148) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Very Shallow Dark Surface (TF12) 2 cm Muck (A10) (IRR N) Depleted Matrix (F2) Very Shallow Dark Surface (TF12) 2 cm Muck (A10) (IRR N) Depleted Matrix (F2) Very Shallow Dark Surface (TF12) Stratified Layers (A10) (IRR N) Depleted Matrix (F2) Very Shallow Dark Surface (TF12) Sandy Rucky Mineral (S1) Redox Dark Surface (F7) Other (Explain in Remarks) Sandy Rucky Mineral (S1) Predmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S4) Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 147, 148) Inor-Manganese Masses (F12) (LRR N, MLRA 136) Stripped Matrix (S6) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 147, 147) M					ļ	ļ	ļ			
ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains										
ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains Location: PL=Pore Lining, M=Matrix ydric Soil Indicators: Indicators for Problematic Hydric Soils: Histisol (A1) Dark Surface (S7) Histisol (A1) Older Matrix Histisol (A2) Other Matrix Histisol (A3) Coast Prairie Redox (A16) (MLRA 147, 148) Black Histic (A3) (MLRA 147, 148) Hydrogen Sulfide (A4) (MLRA 147, 148) Coarm Mick (A10) (LRR N) Depleted Matrix (F2) Very Shallow Dark Surface (TF12) 2 cm Muck (A10) (LRR N) Depleted Dark Surface (F6) Other (Explain in Remarks) Depleted Dark Surface (F12) Depleted Dark Surface (F13) Other (Explain in Remarks) Stratified Layers (S5) Piedmont Floodplain Soils (F19) (MLRA 136, 122) Depleted Dark Surface (F13) (MLRA 136, 122) Sandy Mucky Mineral (S1) Redox Depressions (F8) Piedmont Floodplain Soils (F19) (MLRA 147, 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 147, 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or										
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ype: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains							†			
Joint Standard, P.L.=Pore Lining, M=Matrix vocation: PL.=Pore Lining, M=Matrix vdric Soil Indicators: Indicators for Problematic Hydric Soils: Histisol (A1) Polyvalue Below Surface (S8) 2 cm Muck (A10) (MLRA 147, 147) Black Histic (A3) Thin Dark Surface (S9) Piedmont Floodplain Soils (F19; Hydrogen Sulfide (A4) (MLRA 147, 148) Coast Prairie Redox (A16) (MLRA 147, 147) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Very Shallow Dark Surface (TF12) 2 cm Muck (A10) (LRR N) Depleted Matrix (F3) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Other (Explain in Remarks) Thick Dark Surface (A12) Depleted Dark Surface (F13) Other (Explain in Remarks) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 136, 122) Sandy Redox (S5) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) Hidicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic estrictive Layer (if observed): Piedmont Floodplain Soils (F19) MLRA 148) Hydric soil present? N	[vpe: C=C	oncentration D=	Depletir	n RM=Reduce	d Matrix	CS=Co	L vered or	L Coated Sar	d Grains	······································
ydric Soil Indicators:	Location: 1	PI =Pore Lining	M=Matr	ix	a marina,	00 00		000100 001		
And Soft Matcators:	udata Catl	Indicatora							liantara far D	ablematic Hudrin Spilos
Histisol (A1) Polyvalue Below Surface (S8) 2 cm Muck (A10) (MLRA 147) Histic Epipedon (A2) (MLRA 147, 148) Coast Prairie Redox (A16) (MLRA 147, 14 Black Histic (A3) Thin Dark Surface (S9) Piedmont Floodplain Soils (F19) Hydrogen Sulfide (A4) (MLRA 147, 148) Coast Prairie Redox (A16) (MLRA 147, 14 Stratified Layers (A5) Loamy Gleyed Matrix (F2) Very Shallow Dark Surface (TF12) 2 cm Muck (A10) (LRR N) Depleted Matrix (F3) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thinck Surface (A12) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) (LRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Umbric Surface (F3) (MLRA 147, 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 147) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic	yaric Soli	Indicators:		Dark S	urfano (S	271		and	licators for P	roblematic Hydric Solis.
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Inside Lippedon (n2)	Histisol (A1) Histia Epinadon (A2)			/MIRA	147 14	(8)	8 (00)		_2 cm Muck (Redov (A16) (MI RA 147 14
Build Higting Suffice (A4) (MLRA 147, 148) (MLRA 136, 147) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Very Shallow Dark Surface (TF12) 2 cm Muck (A10) (LRR N) Depleted Matrix (F3) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) (ILRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) Mdicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic estrictive Layer (if observed):	-Black H	istic (A3)			ark Surfa	ace (S9)			Piedmont Ele	odnlain Soils (F19)
Indiana (Indiana) Indiana (Indiana) Stratified Layers (A5) Loamy Gleyed Matrix (F2) Very Shallow Dark Surface (TF12) 2 cm Muck (A10) (LRR N) Depleted Matrix (F3) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Other (Explain in Remarks) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) (LRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic Stripped (if observed): rpe: rocky	-Hydroor	en Sulfide (A4)		(MIRA	147 14	8)			(MI RA 136.	147)
2 cm Muck (A10) (LRR N) Depleted Matrix (F3) Other (Explain in Remarks) Depleted Below Dark Surface (A11) Redox Dark Surface (F6) Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) (LRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic astrictive Layer (if observed):	Stratifie	d Lavers (A5)			Loamy Gleved Matrix (F2)				Very Shallov	/ Dark Surface (TE12)
	-2 cm M	uck (A10) /I BB	N)	Deplet	ed Matrix	(E3)	-,		Other (Expla	in in Remarks)
Thick Dark Surface (A12) Depleted Dark Surface (F7) Sandy Mucky Mineral (S1) Redox Depressions (F8) (LRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) ndicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic astrictive Layer (if observed): rpe: rocky apth (inches): 8	Denlete	d Below Dark Si	urface (A	(11) Redox	Dark Su	rface (Ef	5)		-	in in romanoy
Sandy Mucky Mineral (S1) Redox Depressions (F8) (LRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic estrictive Layer (if observed):	Thick D	ark Surface (A12	7)	Deplet	ed Dark	Surface	-, (F7)			
(LRR N, MLRA 147, 148) Iron-Manganese Masses (F12) (LRR N, MLRA 136) Sandy Gleyed Matrix (S4) Umbric Surface (F13) (MLRA 136, 122) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic estrictive Layer (if observed):		Aucky Mineral (S	51)	Redox	Depress	ions (F8				
	(LRR N	MLRA 147, 14	8)	Iron-M	andanes	e Masse	, s (F12) (LRR N. ML	RA 136)	
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148) Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147) indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic estrictive Layer (if observed): rpe: rocky epth (inches): 8 emarks:	Sandy (Gleved Matrix (S	4	Umbrid	Surface	(F13) (N	MLRA 13	6, 122)	,	
Stripped Matrix (S6)Red Parent Material (F21) (MLRA 127, 147) andicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic estrictive Layer (if observed): rpe:rocky epth (inches): Hydric soil present? emarks:	Sandy F	Redox (S5)	,	Piedmo	ont Flood	plain So	oils (F19)	(MLRA 148	()	
adicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic estrictive Layer (if observed): rpe: rocky epth (inches): 8 emarks:	Stripped	Matrix (S6)		Red Pa	arent Ma	terial (F2	21) (MLŔ	A 127, 147)		
estrictive Layer (if observed): pe: rocky epth (inches): 8 emarks:		()					<i>,</i> ,	. ,		
estrictive Layer (if observed): rpe: rocky epth (inches): 8 emarks:	ndicators of	of hydrophytic ve	egetation	and wetland hy	drology	must be	present,	unless dist	urbed or probl	ematic
estrictive Layer (if observed): rpe: rocky epth (inches): 8 emarks:			-	-						
estrictive Layer (if observed): <pre> pe: rocky epth (inches): 8 emarks: </pre> Hydric soil present? N							Ι			
rpe: <u>rocky</u> Epth (inches): <u>8</u> Emarks:	estrictive L	ayer (if observe	d):							
epth (inches): <u>8</u>	ype: <u>r</u> o	ocky				_		Hydri	c soil presen	t? <u>N</u>
emarks:	epth (inch	es): 8								
emarks:										
	emarks:									

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WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

			Report Name: Upland AEWP-12
Project/Site: Ashtabula - Erie West - P	erry 345 kV T-Line_City/County:	Ashtabula	Sampling Date: <u>12/27/2018</u>
Applicant/Owner: FirstEnergy	State:	Ohio Taurahia Daaraa	Sampling Point: upl-bcr-12/27/18-01
Landform (billslope terrace etc.): depri	ssion Local relief (co	n, Townsnip, Range. ncave convex none)	: flat Stope (%): 1
Subregion (LRR or MLRA): Lake Erie Gla	ciated PlatLat.: 41.905498	Long.: -80	.771698 Datum: WGS 84
Soil Map Unit Name: Udorthents		NWI Cla	assification: None
Are climatic/hydrologic conditions of the sit	e typical for this time of the year?	Yes <u>X</u> No	(If no, explain in remarks)
Are vegetation, soil,	or hydrology significantl	y disturbed? Are	"normal circumstances" Yes
Are vegetation, soil,	or hydrology naturally p	roblematic? pres	sent?
SUMMARY OF FINDINGS		((1)	iccucu, explain any answers in ternarks
Hydrophytic vegetation present? No	1		
Hydric soil present? Yes	s Is the sam	pled area within a w	retland? No
Wetland hydrology present? No			
Remarks:			
Upland data point within low forme	erly industrial area, adjacent to	PEM wetland.	
Wetland Hydrology Indicators:		Secondary	Indicators (minimum of two required)
Primary Indicators (minimum of one is requ	ured: check all that apply)	Surface	Soil Cracks (B6)
Surface Water (A1)	True Aquatia Planta (P14)	Sunace	Vegeteted Conceve Surface (D9)
High Water Table (A2)	Hudrogop Sulfide Oder (C1)	Sparsery	a Betterne (B10)
Right Water Table (A2)	Hydrogen Suinde Odor (C1)	Drainagi	e Patterns (B10)
Saturation (AS)	Oxidized Rhizospheres on Li	vingMoss Tr	Im Lines (BTO)
Sediment Deposite (B2)	Robis (C3) Rresence of Reduced Iron (C	(1) Ury-Sea	Burrows (CB)
Drift Deposits (B3)	Becent Iron Reduction in Till	ed Saturatio	on Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Soils (C6)	Stunted	or Stressed Plants (D1)
Iron Deposits (B5)	Thin Muck Surface (C7)	Geomor	phic Position (D2)
Loundation Visible on Aerial	Other (Explain in Remarks)	Shallow	Aquitard (D3)
Imagery (B7)		Microtor	pographic Relief (D4)
Water-Stained Leaves (B9)		FAC-Ne	utral Test (D5)
Aquatic Fauna (B13)			
Field Observations:			
Surface water present? Yes	No X Depth (inches)	:	Wetland
Water table present? Yes	No X Depth (inches)		hydrology
Saturation present? Yes	No X Depth (inches)	:	present? N
(includes capillary fringe)	, , , ,		·
Describe recorded data (stream davias, ma	nitoring well period photos, provid		ilable:
peschile recorded data (stream gauge, mo	nitioning wen, aeriai photos, previo	us inspections), il ava	ildule.
Demorius			
Remarks:			

VEGETATION - Use scientific names of plants

EGETATION - Use scientific harries of pla				Sampling Point: upl-bcr-12/27/18-
	Absoluto %	Dominant	Indicator	50/20 Thresholds
Tree Stratum Plot Size (30 ft.) Cover	Species	Status	Tree Stratum 0 0
1	00701	opeoles	Olalus	Sanling/Shruh Stratum 1 3
2				Herb Stratum 27 68
3				Woody Vine Stratum 0 0
4				,
5				Dominance Test Worksheet
7				Species that are OBI
8				EACW or EAC: 1 (A)
9				Total Number of Dominant
10				Species Across all Strata: 3 (B)
	= 0 =	Total Cover		Percent of Dominant
				Species that are OBL,
Sapling/Shrub	Absolute %	Dominant	Indicator	FACW, or FAC: 33.33% (A/B
Stratum Plot Size (15 ft.) Cover	Species	Status	`
1 Cornus alba	5	Ý	FACW	Prevalence Index Worksheet
2				Total % Cover of:
3				OBL species 0 x 1 = 0
4	····			FACW species 10 x 2 = 20
5				FAC species 0 x 3 = 0
6	·····			FACU species <u>125</u> x 4 = <u>500</u>
7				UPL species $5 \times 5 = 25$
8				Column totals 140 (A) 545 (B)
9				Prevalence index = $B/A = -3.89$
0	=	Total Cover		
				Hydrophytic Vegetation Indicators:
Herb Stratum Plot Size (5 ft	Absolute %	Dominant	Indicator	Rapid test for hydrophytic vegetation
	Cover	Species	Status	Dominance test is >50%
1 Poa pratensis		<u>Y</u>	FACU	Prevalence index is ≤3.0*
2 Andropogon virginicus		<u> </u>	FACU	worphological adaptations (provide
3 Symphyotricnum ericoldes		<u> </u>	FACU	supporting data in Remarks of on a
5 Daucus carota	5			Problematic hydrophytic vegetation*
6 Phragmites australis	5	<u> </u>	FACW	(explain)
7				*Indicators of hydric soil and wetland hydrology must be
8				present, unless disturbed or problematic
9				
0				Definitions of Vegetation Strata:
1			<u> </u>	Free - Woody plants 3 in. (7.5 cm) or more in diameter a
2				breast neight (DDA), regardless of height.
4		<u> </u>		Sapling/shrub - Woody plants less than 3 in. DBH and
5	<u> </u>			greater than 3 28 ft (1 m) tall.
	135 =	Total Cover		Herb - Ali herbaceous (non-woody) plants, regardless o
Mandelling	Abortite 0/	Dominant	Indiantar	size, and woody plants less than 3.28 ft tall.
Stratum Plot Size (30 ft.) Absolute %	Dominant	Indicator	
Stratum	Cover	Species	Status	woody vines - All woody vines greater than 3.28 ft in beight
2		<u></u>		neight.
3				
4				Hydrophytic
5				vegetation
	0 =	Total Cover		present? N
omotion (Include abote surplane base as a				
emarks: (Include photo numbers here or on a sep	arate sheet)			
	` ·			

Sampling Point: upl-bcr-12/27/18-01

Depth	Matrix		Rec	lox Feat	tures		Toxturo	Bomodro
(Inches)	Color (moist)	%	Color (moist)	%	Type*	Loc**		Remarks
0-8	10YR 4/1	75	10YR 5/8	25	С	M	Silty Clay	
			1					
				-			· -····	
						1		
					1		·	
					1			<u> </u>
								<u> </u>
	<u> </u>		· · · · · · · · · · · · · · · · · · ·					
					<u> </u>			
	operation Dr	Daplati	PM-Boducos	Motrix	08-00	l orad ar	Control Sand Croine	_ <u></u>
i ype: C=C *Location:	PI=Pore Lining	M=Matr	iy Exivi-ryeuuced	i ividiliX,	U3=U01	verea or	Cualeu Sanu Grains	
LUCALION	l = Pore cining,	141-1418()						
yaric Sol	i indicators:		Dark S	ufaca (S	271		indicators for	Problematic Hydric Solis:
Histicol	(41)		Daik St	unace (a ue Belov	v Surfaci	e (S8)	2 cm Muck	(A10) (MI RA 147)
Histic F	ninedon (A2)		(MI RA	147 14	.R)	0 (00)	Coast Prai	rie Redox (A16) (MI RA 147 14
Black H	listic (A3)		Thin Da	irk Surfa	-, ace (S9)		Piedmont I	Floodplain Soils (F19)
Hydrog	en Sulfide (A4)		(MLRA	147, 14	8) (8		(MLRA 13	6, 147)
Stratifie	d Layers (A5)		Loamy	Gleyed	Matrix (F	2)	Very Shall	ow Dark Surface (TF12)
2 cm M	uck (A10) (LRR	N)	X Deplete	d Matrix	(F3)		Other (Exp	olain in Remarks)
Deplete	ed Below Dark Su	urface (A	11) Redox 1	Dark Su	rface (F6	5)		
Thick D	ark Surface (A12	2)	Deplete	d Dark	Surface ((F7)		
Sandy	Mucky Mineral (S	51) D	Redox I	Depress	ions (F8)		
	l, MLRA 147, 146 Cloued Metrix (S	8) 4)	Iron-Ma	nganes		S (F12) (LRR N, MLRA 136)	
Sandy	Bedox (S5)	4,	Umbric Piedmo	of Floor	n) (c i c) (n Inlain So	ile (E10)	00, 122) (MI DA 148)	
Strippe	d Matrix (S6)		Red Pa	rent Ma	terial (E2	13 (F 19) 13 (MIR	A 127 147)	
							A 12/, 14/)	
	of hydrophytic ve	getation	and wetland hyd	drology	must be	present,	unless disturbed or pro	blematic
ndicators		-				•	,	
Indicators								
Indicators								
Indicators	Layer (if observe	d):						
Indicators	Layer (if observe Gravel	d):			_		Hydric soil prese	ent? Y
testrictive	Layer (if observe Gravel es): 8	d):			-		Hydric soil prese	ent? <u>Y</u>
Indicators Restrictive	Layer (if observe Gravel es): <u>8</u>	d):			-	, 	Hydric soil prese	ent?Y
Restrictive ype: <u>C</u> epth (inch	Layer (if observe Gravel es): 8	d): 			-		Hydric soil prese	ent? <u>Y</u>
Restrictive Ype: <u>C</u> Pepth (inch Remarks:	Layer (if observe Gravel es): <u>8</u>	d): 			-		Hydric soil prese	ent?Y
Lestrictive ype: <u>C</u> epth (inch	Layer (if observe Gravel es): 8	d): 			-	· · ·	Hydric soil prese	ent?Y
ndicators estrictive ype: <u>C</u> epth (inch emarks:	Layer (if observe Gravel es): 8	d):			-		Hydric soil prese	ent? <u>Y</u>

SOIL

Appendix B Ohio Rapid Assessment Method for Wetlands (ORAM) Forms

Date: 8/28/2018



last revised 1 February 2001 jjm



3 GRAND TOTAL (max 100 pts)

19

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address http://www.epa state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

2

of marginal quality

and of highest quality

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts

Date: 8/28/2018



last revised 1 February 2001 jjm





Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html fast revised 1 February 2001 jjm

2

3

Present in moderate amounts, but not of highest guality or in small amounts of highest guality

Present in moderate or greater amounts

and of highest quality

 Rater(s): M. Thomayer, T. Qualio
 Date: 8/28/2018

 w-mdt-8/28/2018-03





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

25 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address. http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jim





U	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

33.5 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address. http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm





13.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 iim

2

3

of marginal quality

and of highest quality

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts



woody debris removal

toxic pollutants

farming

nutrient enrichment

Wetland AEWP-06

27.

subtotal this page



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

Wetland AEWP-06

24.5 GRAND TOTAL (max 100 pts)

Amphibian breeding pools

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

Date: 10/30/2018



Rater(s): B. Robertson, B. Otto

last revised 1 February 2001 jjm



28.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

2

3

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts

and of highest quality





13.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

1

2

3

Present very small amounts or if more common

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts

of marginal quality

and of highest quality



w-bao-12/27/18-01



Rater(s): B. Robertson, B. Otto



12 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

1

2

3

Present very small amounts or if more common

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts

of marginal quality

and of highest quality

Date: 12/27/2018





9.5 **GRAND TOTAL** (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

2

3

of marginal quality

and of highest quality

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts

Date: 12/27/2018

w-bao-12/27/18-02



Rater(s): B. Robertson, B. Otto

last revised 1 February 2001 jjm



11.5 GRAND TOTAL (max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html last revised 1 February 2001 jjm

1

2

3

of marginal quality

and of highest quality

Present in moderate amounts, but not of highest quality or in small amounts of highest quality

Present in moderate or greater amounts

Date: 12/27/2018

w-bcr-12/27/2018-01



Rater(s): B. Robertson, B. Otto

last revised 1 February 2001 jjm




11.5 **GRAND TOTAL (max 100 pts)**

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address; http://www.epa.state.oh.us/dsw/401/401 html last revised 1 February 2001 jjm

and of highest quality

Appendix C Primary Headwater Habitat Evaluation Index (HHEI) and Qualitative Habitat Evaluation Index (QHEI) Stream Datasheets

		Stream AEWP-01 Poor	Warmwater
ChicEPA Qualit and U	ative Habitat Evaluation se Assessment Field S	Index Sheet QHEI Score:	37
Stream & Location: Unnamed Tributary to Fie	Ids Brook/Ashtabula 345kV Transmission	Line RM: Date:08	3 28 18
s-mdt-08/28/2018-01	Scorers Full Name & Afi	filiation: M. Thomayer, T. Qualio-Jac	obs
River Code:STORE	T #: Lat./Long.:	/8	Office verified location
1] SUBSTRATE Check ONLY Two substrate Ty estimate % or note every type BEST TYPES POOL RIFELE OTH	PEBOXES; present ER TYPES POOL RIFELE OR	Check ONE (<i>Or 2 & average</i>)	 'Y
BLDR /SLABS [10] H BOULDER [9] D COBBLE [3] D GRAVEL [7] O BEDROCK [5] O NUMBER OF BEST TYPES: 4 or more [Comments 3 or less [0]	ARDPAN [4] ILIMEST ETRITUS [3] TILLS [UCK [2] WETLA LT [2] 100 100 ZHARDP RTIFICIAL [0] SANDS Score natural substrates; ignore RIP/RAI 2] sludge from point-sources) LACUS] SHALE COAL F	ONE [1] ☐ HEAVY [-2] I] SILT MODERATI NDS [0] SILT NORMAL [I AN [0] ☐ FREE [1] TONE [0] ØDEO Ø EXTENSIVI P [0] ØDEO Ø MODERATI FURINE [0] ØDEO Ø NORMAL [I [-1] Ø NONE [1] INES [-2] Ø	E [-1] Substrate 0] 0 E [-2] 0 E [-1] Maximum 20
2] INSTREAM COVER Indicate presence 0 to quality; 2-Moderate ar quality; 3-Highest quality in moderate or greater an diameter log that is stable, well developed rootwad UNDERCUT BANKS [1]	3: 0-Absent; 1-Very small amounts or if m nounts, but not of highest quality or in sma nounts (e.g., very large boulders in deep or in deep / fast water, or deep, well-defined POOLS > 70cm [2] OXBOWS, B ROOTWADS [1] AQUATIC M/ BOULDERS [1] LOGS OR W	ore common of marginal AMOU Ill amounts of highest r fast water, large Check ONE (Or , functional pools. EXTENSIVE > ACKWATERS [1] Ø MODERATE 2 ACROPHYTES [1] SPARSE 5-<2! OODY DEBRIS [1] NEARLY ABSI	NT 2 & average) 75% [11] 5-75% [7] 5% [3] ENT <5% [1]
Comments			aximum 8 20
3] CHANNEL MORPHOLOGY Check ONE in SINUOSITY DEVELOPMENT C □ HIGH [4] □ EXCELLENT [7] □ NO □ MODERATE [3] □ GOOD [5] □ RE □ LOW [2] □ FAIR [3] □ RE □ NONE [1] □ POOR [1] □ RE Comments □ □	Heach category (Or 2 & average) HANNELIZATION STAB DNE [6] HIGH COVERED [4] MODI COVERING [3] I LOW COVERING NO RECOVERY [1]	ILITY [3] ERATE [2] [1] C M	Channel aximum 20
4] BANK EROSION AND RIPARIAN ZO/ River right looking downstream EROSION IN RIPARIAN V RIPARIAN V RIPARIAN V RIPARIAN V I RODERATE [3] INODERATE 10 I MODERATE [2] INODERATE 10 I HEAVY / SEVERE [1] INODERATE 10 Comments	VE Check ONE in each category for EACH VIDTH FLOOD PLAIN [] [] FOREST, SWAMP [3] -50m [3] [] SHRUB OR OLD FIELD n [2] [] RESIDENTIAL, PARK, N V < 5m [1] [] FENCED PASTURE [1] [] OPEN PASTURE, ROW	A BANK (Or 2 per bank & average) N QUALITY C CONSERVATION C [2] I C CONSERVATION C [2] I C CONSERVATION I C C C C C C C C C C C C C C C C C C C	TILLAGE [1] ISTRIAL [0] RUCTION [0] d use(s) Riparian aximum 10
5] POOL / GLIDE AND RIFFLE / RUN QU MAXIMUM DEPTH CHANNEL Check ONE (<i>ONLY</i>) Check ONE (<i>Or 2</i>) > 1m [6] POOL WIDTH > RIFF 0.7-<1m [4] POOL WIDTH = RIFF 0.4-<0.7m [2] POOL WIDTH < RIFF 0.2-<0.4m [1] 0.2 < 0.2m [0]	JALITY CURRENT VE WIDTH CURRENT VE & average) Check ALL tha ELE WIDTH [2] TORRENTIAL [-1] I ELE WIDTH [1] VERY FAST [1] I ELE WIDTH [0] FAST [1] I ILE WIDTH [0] FAST [1] I	LOCITY at apply SLOW [1] INTERSTITIAL [-1] INTERMITTENT [-2] EDDIES [1] pools and riffles.	Potential Contact Contact Menton back
Comments 10" Max pool depth			aximum 12
of riffle-obligate species: RIFFLE DEPTH RUN DEPTH ☐ BEST AREAS > 10cm [2] ☐ MAXIMUM > 50cm ☐ BEST AREAS 5-10cm [1] ☑ MAXIMUM < 50cm	Areas must be large enough to s Check ONE (<i>Or 2 & average</i>). RIFFLE / RUN SUBSTRAT n [2]	Image: Construction of the second s	FFLE (metric=0) DNESS
[metric=0] Comments			Run 1 Iaximum
6] GRADIENT (27 ft/mi) UVERY LOW DRAINAGE AREA MODERAT (1.14 mi ²) HIGH - VER	- LOW [2-4] %POOL: E [6-10] RY HIGH [10-6] %RUN:	20 %GLIDE: 20 G 50 %RIFFLE: 10 M	Bradient 10



		Stream A	EWP-02 Poor Warmwater
ChicEPA	Qualitative Habitat I and Use Assessme	Evaluation Index ent Field Sheet	QHEI Score: 42
Stream & Location: Fields Brook	Ashtabula 345kV Transmission Line		: Date: 08 28 18
s-mdt-08/28/2018-02	Scorers Fi	Ill Name & Affiliation: M. Th	omayer, T. Qualio-Jacobs
River Code:		AD 83 - decimal * /	8location
1] SUBSTRATE Check ONLY Two sestimate % or note BEST TYPES POOL RIFFL	Substrate TYPE BOXES; every type present OTHER TYPES POOL RII DETRITUS [3] DETRITUS [3] DIMUCK [2] ID SILT [2]	Check ONE (4 FFLE ORIGIN I LIMESTONE [1] I TILLS [1] WETLANDS [0] ON I HARDPAN [0]	Or 2 & average) QUALITY HEAVY [-2] BILT MODERATE [-1] Substrate NORMAL [0]
	ARTIFICIAL [0] (Score natural substrates; i 4 or more [2] sludge from point-sou	Comparison (Comparison (C	DEC MODERATE [-1] MODERATE [-1] Maximum NORMAL [0] NONE [1]
Comments	2 01 1622 [0]	COAL FINES [-2]	
2] INSTREAM COVER Indicate pr quality; 2- quality; 3-Highest quality in moderate o diameter log that is stable, well develop UNDERCUT BANKS [1] 2OVERHANGING VEGETATION SHALLOWS (IN SLOW WATER) ROOTMATS [1]	esence 0 to 3: 0-Absent; 1-Very sma Moderate amounts, but not of highes r greater amounts (e.g., very large b bed rootwad in deep / fast water, or o <u>1</u> POOLS > 70cm [2] [1] ROOTWADS [1] [1] BOULDERS [1]	all amounts or if more common of m st quality or in small amounts of hig oulders in deep or fast water, large deep, well-defined, functional pools OXBOWS, BACKWATERS [1 AQUATIC MACROPHYTES [LOGS OR WOODY DEBRIS]	AMOUNT hest Check ONE (<i>Or 2 & average</i>) EXTENSIVE >75% [11] MODERATE 25-75% [7] SPARSE 5-<25% [3] NEARLY ABSENT <5% [1]
Comments			Maximum 10
3] CHANNEL MORPHOLOGY C SINUOSITY DEVELOPMEI HIGH [4] EXCELLENT MODERATE [3] GOOD [5] LOW [2] FAIR [3] NONE [1] POOR [1] Comments	heck ONE in each category (<i>Or 2 &</i> NT CHANNELIZATION [7] NONE [6] RECOVERED [4] RECOVERING [3] RECENT OR NO RECOVE	average) STABILITY HIGH [3] MODERATE [2] I LOW [1] ERY [1]	Channel Maximum 20
4) BANK EROSION AND RIPAL River right looking downstream RIF REROSION NONE / LITTLE [3] MODERATE [2] HEAVY / SEVERE [1] Comments	RIAN ZONE Check ONE in each PARIAN WIDTH R E > 50m [4] Image: Constraint of the cons	category for EACH BANK (Or 2 per FLOOD PLAIN QUALITY IST, SWAMP [3]	T bank & average) CONSERVATION TILLAGE [1] URBAN OR INDUSTRIAL [0] MINING / CONSTRUCTION [0] Indicate predominant land use(s) ast 100m riparian. Riparian Maximum 10 T.5
5] POOL / GLIDE AND RIFFLE MAXIMUM DEPTH CH Check ONE (ONLY!) Check □ > 1m [6] □ POOL W □ 0.7-<1m [4] ☑ POOL W □ 0.4-<0.7m [2] □ POOL W □ 0.2-<0.4m [1] □ < 0.2m [0] Comments	/ RUN QUALITY ANNEL WIDTH CONE (Or 2 & average) IDTH > RIFFLE WIDTH [2] IDTH = RIFFLE WIDTH [1] IDTH < RIFFLE WIDTH [0] FAS IDTH < RIFFLE WIDTH [0] IDTH < RIFFLE WIDTH [0] IDTH < RIFFLE WIDTH [0] IDTH = RIFFLE	CURRENT VELOCITY Check ALL that apply RENTIAL [-1] 2 SLOW [1] Y FAST [1] 1 INTERSTITIAL [T [1] 1 INTERMITTENT DERATE [1] 2 EDDIES [1] dicate for reach - pools and riffles.	-1] [-2] Recreation Potential <i>Primary Contact</i> Secondary Contact (circle one and comment of back) Pool / Current Maximum
Indicate for functional riffle obligate species: RIFFLE DEPTH RUI BEST AREAS > 10cm [2] MAXIM BEST AREAS 5-10cm [1] MAXIM BEST AREAS < 5cm	es; Best areas must be larg Check ONE (<i>Or 2</i> N DEPTH RIFFLE / RU MUM > 50cm [2] STABLE (e.g., 1 MUM < 50cm [1] MOD. STABLE UNSTABLE (e.g	ie enough to support a po & average). IN SUBSTRATE RIFFLE / Cobble, Boulder) [2] (e.g., Large Gravel) [1] g., Fine Gravel, Sand) [0]	12 pulation NO RIFFLE [metric=0] RUN EMBEDDEDNESS NONE [2] LOW [1] MODERATE [0] Riffle / Run 2 Maximum 2
6] <i>GRADIENT</i> (27 ft/mi) □ DRAINAGE AREA □ (1.24 mi ²) □	VERY LOW - LOW [2-4] MODERATE [6-10] HIGH - VERY HIGH [10-6]	%POOL: 10 %G %RUN: 20 %RI	LIDE: 60 Gradient FLE: 10 Maximum 10



Comment RE: Reach consistency/Is reach typical of steam?, Recreation/Observed - Inferred, Other/Sampling observations, Concerns, Access directions, etc.

			Stream AEV	VP-03
ChieFPA Primary Headw	ater Habita	t Evaluation	Form	26
	HH	El Score (sum of r	netrics 1, 2, 3) :	50
SITE NAME/LOCATION FirstEnergy Ashtabula 34	5kV Transmissio	n Line Field II): s-mdt-08/29/2018-	01
SITE NUMBER	RIVER BASIN		DRAINAGE AREA (mi²)	1
LENGTH OF STREAM REACH (ft) 200 LAT.	LONG.	RIVER CODE	RIVER MILE	i
DATE 08/29/18 SCORER MDT, TMQ CO	MMENTS Epheme	eral flow regime		·
NOTE: Complete All Items On This Form - Refer to	o "Field Evaluation	Manual for Ohio's Pl	HWH Streams" for Inst	ructions
STREAM CHANNEL				COVERY
MODIFICATIONS: Channelized and appears to have been dredged a	it some point.		_	
1. SUBSTRATE (Estimate percent of every type of s	ubstrate present. Ch	eck ONLY two predomina	nt substrate TYPE boxes	
(Max of 32). Add total number of significant substrat	e types found (Max of	8). Final metric score is si	um of boxes A & B.	
TYPE PERCENT BLDR SLABS [16 pts] 0%		3 pt]	<u>PERCENT</u> 55%	Points
BOULDER (>256 mm) [16 pts]		PACK/WOODY DEBRIS	3 pts] 0%	Substrata
BEDROCK [16 pt] COBBLE (65.256 mm) [12 pte]0%		DETRITUS [3 pts]	20%	Max = 40
GRAVEL (2-64 mm) [9 pts] 5%		[0 pts]	0%	
SAND (<2 mm) [6 pts]		ICIAL [3 pts]	0%	D D
Total of Percentages of 0.00%	(A)	100%	(B)	A + B
Bidr Slabs, Boulder, Cobble, Bedrock			STRATE TYPES 3	
 Maximum Pool Depth (Measure the maximum po evaluation. Avoid plunge pools from road culverts or 	ol depth within the 6 storm water pipes)	1 meter (200 ft) evaluatio (Check ONLY one box):	n reach at the time of	Pool Depth Max = 30
> 30 centimeters [20 pts]	> 5 cr	m - 10 cm [15 pts]		
 ✓ 22.5 - 30 cm [30 pts] ✓ 10 - 22.5 cm [25 pts] 		M [5 pts] VATER OR MOIST CHAN	NEL [0 pts]	25
COMMENTS		MAXIMUM POOL DEPT	H Inches 8	emerana a service d
3. BANK FULL WIDTH (Measured as the average of	3-4 measurements)	(Check ONLY on		Bankfull
> 4.0 meters (> 13') [30 pts]	> 1.0	m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	Width
> 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]		m (<-3-3-) [5 pts]		MIGY-20
COMMENTS		AVERAGE BANKFULL		5
		-		
Th	is information must :	also be completed		
RIPARIAN ZONE AND FLOODPLAIN QUAL RIPARIAN WIDTH FLOODP	L ITY ⇒≵NOTE: Riv 2LAIN QUALITY	er Left (L) and Right (R) a	is looking downstream 🖓	
LR (Per Bank) LR	(Most Predominant p	erBank) <u>LR</u>		
✓ ✓ Wide >10m	Mature Forest, Wetla Immature Forest, Sh	and LL rub or Old	Conservation Tillage	
Moderate 5-10m	Field		Urban or Industrial	
Narrow <5m	Residential, Park, Ne	ew Field	Open Pasture, Row Ci	rop
	Fenced Pasture		Mining or Construction	I
				-
Stream Flowing	heck ONLY one box):	Moist Channel, isolated	pools, no flow (Intermitten	t)
Subsurface flow with isolated pools (Interstitia	l) [Dry channel, no water	(Ephemeral)	
				-
SINUOSITY (Number of bends per 61 m (20)	Utt) of channel) (Che	eck ONLY one box): 2.0	3.0	
0.5		2.5	>3	
STREAM GRADIENT ESTIMATE	erate (2.6/100.#)	Moderate to Severa		100 ft)
				199.14

ADDITIONAL STREAM INFORMATION (This Information Must Al	so 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	INTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name:	NRCS Soil Map Page NRCS Soil Map Stream Order
County: Tow	nship / City: Ashtabula
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Y Date of last precipitation:	Quantity: 0.00
Photograph Information: 2 photos	
Elevated Turbidity? (Y/N): Canopy (% open): 10	0%
Were samples collected for water chemistry? (Y/N):	ab 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)	t, please explain:
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION	
ID number. Include appropriate field da	the collections optional. NOTE: all voucher samples must be labeled with the site ata sheets from the Primary Headwater Habitat Assessment Manual)
N N	
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Frogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aqu	Observed? (Y/N) Voucher? (Y/N) atic 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 parrative description of the stream's location



Appendix D Representative Photographs



Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland AEWP-01	PEM	North	8/28/2018





Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland AEWP-02	PEM	South	8/28/2018





Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland AEWP-03	PEM	West	8/28/2018





Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland AEWP-05	PEM	North	8/28/2018





Site Name	Cowardin Class	Photo Direction	Date of Survey
Wetland AEWP-11	PEM	East	12/27/2018







