# LETTER OF NOTIFICATION FOR Adjustment to Heppner-Rhodes 138 kV Transmission Line Rebuild Project



BOUNDLESS ENERGY\*\*

PUCO Case No. 18-0872-EL-BLN

Submitted to:

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

Submitted by:

AEP Ohio Transmission Company, Inc.

May 31, 2018

#### LETTER OF NOTIFICATION

# AEP Ohio Transmission Company, Inc.'s Heppner-Rhodes 138 kV Transmission Line Rebuild Project

#### 4906-6-05

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

#### 4906-6-05(B) General Information

#### **B(1) Project Description**

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

AEP Ohio Transco proposes an adjustment to the approved Heppner-Rhodes 138 kV Transmission Line Rebuild Project (Case Number 17-0807-EL-BLN), which will be referred to as Adjustment to Heppner-Rhodes 138 kV Transmission Line Rebuild Project ("Project"). The Project is located in Coal and Lick Townships, Jackson County, Ohio. The Project involves building approximately 0.2 miles of 138 kV transmission line between the Poston-Lick 138 kV transmission line and the and proposed Rhodes Substation. Figures 1 and 2 show the location of the Project in relation to the surrounding vicinity.

The Project meets the requirements for a Letter of Notification ("LON") because it is within the types of projects defined by (1)(d)(ii) of Appendix A to Ohio Administrative Code Section 4906-1-01, *Application Requirement Matrix for Electric Power Transmission Lines*:

- 1. New construction, extension, or relocation of single or multiple circuit electric power transmission line(s), or upgrading existing transmission or distributions line(s) for operation at a higher transmission voltage as follows:
  - (d) Line(s) primarily needed to attract or meet the requirements of a specific customer or customers, as follows:
    - ii. Any portion of the line is on property owned by someone other than the specific customer or applicant.

The Project has been assigned PUCO Case No. 18-0872-EL-BLN.

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#### B(2) Statement of Need

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

The existing portion of a current distribution line that is proposed to be rebuilt as the Heppner – Rhodes 138kV Transmission Line was originally constructed in 1926 with wood poles and 4/0 copper conductor. The aging structures and conductor require upgrades to meet AEP Ohio Transco's current transmission facility standards in order to ensure service adequacy and reliability to AEP Ohio Transco's customer, the City of Jackson, which requires significant support due to its population and industry, as well as to other portions of Ross and Jackson Counties. Rebuilding this circuit and constructing the Rhodes 138/69 kV substation, which is the subject of another application, will provide the area a third power source, improving the reliability for customers in the area.

For purposes of PJM Interconnection, LLC Regional Transmission, the proposed facility is a supplemental project that is necessary to renew and modernize the area's aging transmission line infrastructure. The Project will strengthen the 138 kV transmission network in southeast/southern Ohio, support the electrical load required in future economic development in that area, and provide transmission grid reliability and resiliency. This Project was submitted at the PJM RTEP meeting on March 24, 2017 and is included in AEP Ohio Transco's 2018 Long Term Forecast Report (FE-T9, page 8 of 60, see Appendix B). The PJM identifier for the Project is S1342.

#### **B(3) Project Location**

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

The location of the Project in relation to existing transmission lines and stations is shown on Figure 1. Figure 2 identified the Project components on a 2015 aerial photograph.

#### **B(4)** Alternatives Considered

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

AEP Ohio Transco previously filed an LON for the Heppner-Rhodes 138 kV transmission line in Case No. 17-0807-EL-BLN. That application was automatically approved on February 13, 2018. See Case No. 17-0807-EL-BLN, Staff Report of Investigation at 1 (Feb. 6, 2018). After the automatic approval date for that project, AEP Ohio Transco determined that the initial, approved alignment for the Heppner-Rhodes 138 kV transmission line, specifically the alignment in the vicinity of the Rhodes Substation, was not feasible. Due to the increased voltage of the new transmission line and distribution underbuild, AEP Ohio Transco determined that there is not enough clearance on the existing Poston-Lick 138 kV transmission line to allow AEP Ohio Transmission Company, Inc.

Adjustment to Heppner-Rhodes 138 kV Transmission Line

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for the Heppner-Rhodes 138 kV transmission line to cross undernearth. Therefore, the Company has proposed an adjustment to the Heppner-Rhodes 138 kV transmission line, which is the subject of this Project filing. The Project parallels and utilitizes a portion of the existing Poston-Lick 138 kV transmission right-of-way (ROW). No other alternatives were considered for the Project. Significant negative socioeconomic, ecological, or construction impacts from the proposed adjustment are not expected, as the new line will be adjacent and utilitize a portion of the existing Poston-Lick 138 kV transmission line ROW.

#### **B(5)** Public Information Program

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

AEP Ohio Transco informs affected property owners and tenants about this Project through several different mediums. Within seven days after its files this LON, AEP Ohio Transco will issue a public notice in a newspaper of general circulation in the Project area. The notice will comply with all requirements of O.A.C. 4906-6-08(A)(1)-(6). Further, AEP Ohio Transco will mail a letter, via first class mail, to affected landowners, tenants, contiguous owners, and any other landowner AEP Ohio Transco approached for an easement necessary for the construction, operation, or maintenance of the Project. That letter will comply with all the requirements of O.A.C. 4906-6-08(B). AEP Ohio Transco also maintains a website (http://aeptransmission.com/ohio/) which provides the public access to an electronic copy of this LON and the public notice for this LON. A paper copy of the LON will be provided to Jackson County Board of Commissioners, the Jackson County Engineer, Jackson County Soil and Water Conservation District, Coal Township Trustees, the Coal Township Fiscal Officer, Lick Township Board of Trustees, City of Jackson Mayor Randy Heath, and City of Jackson Councilman Eric Brown concurrently with its submittal to OPSB. A paper copy of the LON will also be provided to the Jackson City Library. AEP Ohio Transco retains ROW land agents who discuss project timelines, construction, and restoration activities with affected owners and tenants.

#### **B(6)** Construction Schedule

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

AEP Ohio Transco anticipates that construction of the Project will begin in the fall of 2018, and the inservice date of the Project will be approximately May 2019.

#### B(7) Area Map

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

Figure 1 identifies the location of the Project area on a United States Geological Survey 1:24,000 quadrangle map. Figure 2 is an aerial map of the Project area.

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To visit the Project from Columbus, Ohio, take US-23 S toward Circleville for approximately 40 miles. Continue onto US-35 E/US-50 E toward Jackson/Athens for approximately 28 miles, take the ramp right for OH-32/OH-124 and turn left. After 3.0 miles, turn left onto Rice Road, then turn right onto Fairgreens Road. Drive 1.5 miles and turn left. The eastern terminus of the Project (proposed Rhodes Subtation) will be 0.2 miles on the left side of Fairgreens Road. The approximate address of the proposed Rhodes Substation is 3103 Fairgreens Road, Jackson, Ohio 45640 at latitude 39.0824, longitude -82.5492.

#### **B(8) Property Agreements**

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

The Project will generally be constructed adjacent to the existing Poston-Lick 138 kV transmission line ROW. Provided below is a table of parcel numbers and an indication of if the easement/option necessary to construct and operate the facility has been obtained.

Property Parcel Number	Easement/ Option Obtained (Yes/No)*
B020020017900	No
B020020017600	Yes
H130010000200	Yes

<sup>\*</sup>AEP Ohio Transco may supplement its existing rights under certain blanket easements identified above

#### **B(9) Technical Features**

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

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

The transmission line construction will include the following:

Voltage: 138kV

Conductors: 1033.5 kcmil 54/7 Strands CURLEW ACSR Static Wire: 7#10 Alumoweld 7 Strands Alumoweld

Insulators: 25 Kip Polymer Suspension & 50 kip Polymer Strain

ROW Width: 100 Feet

Structure Types: (2) Guyed 3-pole dead-end

(1) H-frame tangents

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#### B(9)(b) Electric and Magnetic Fields

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

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

i) Calculated Electric and Magnetic Field Levels

No occupied residences or institutions are located within 100 feet of the Project.

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

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

No occupied residences or institutions are located within 100 feet of the Project.

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

The estimated capital cost of the project.

The capital costs estimate for the Project is approximately \$400,000. However, the cost estimate for the entire Heppner-Rhodes Project including the proposed adjustment, comprised of applicable tangible and capital costs, is approximately \$7,000,000.

#### **B(10) Social and Economic Impacts**

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

#### B(10)(a) Operating Characteristics

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

The Project is located in Coal and Lick Townships, Jackson County, Ohio; outside the city limits of the City of Jackson. Land uses in the Project area consists of deciduous forest and open land.

#### B(10)(b) Agricultural Land Information

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

The Project is not located within a registered agricultural district lands, based on May 15, 2018 coordination with the Jackson County Auditor's Office. Additionally, the Project area does not contain any active agricultural row crop land.

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#### B(10)(c) Archaeological and Cultural Resources

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

In April and May 2018, AEP Ohio Transco's consultant completed an addendum to the previously conducted Phase I cultural resource investigations for the Project, which will be provided to OPSB under separate cover. The field investigations were conducted for the Project only in areas outside of the previous survey conducted for the initial filing of the Heppner-Rhodes application.

The archaeological field reconnaissance determined that the majority of the Project area is situated in fallow and forested conditions, all of which are located in steeply sloping areas. Visual inspection of the areas and the soils survey indicated that the landforms have greater than 15 percen slope. There were no cultural materials identified in the Project area and the planned work will not impact/involve any significant cultural resources or land marks. No further archaeological work is considered to be necessary for the Project. The Ohio History Connection concurrence letters for the Project and the initial Heppner-Rhodes Phase I cultural resource investigations can be found in Appendix C.

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

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

A Notice of Intent will be filed with the Ohio Environmental Protection Agency for authorization of construction storm water discharges under General Permit OHCoooo5, and AEP Ohio Transco will implement and maintain best management practices (BMPs), as outlined in the project-specific Storm Water Pollution Prevention Plan (SWPPP), to minimize erosion and control sediment to protect surface water quality during storm events. The Project will temporarily impact streams and wetlands during construction, however, it is anticipated that the Project will meet the terms and conditions of the preauthorized Section 401 Water Quality Certification from the OEPA.

The Project is not located within a Federal Emergency Management Agency ("FEMA") 100-year floodplain area. Therefore, no floodplain permitting is required for the Project.

There are no other known local, state or federal requirements that must be met prior to commencement of the Project.

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

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

The United States Fish and Wildlife Service ("USFWS") Federally Listed Species by Ohio Counties May 2017 (available at https://www.fws.gov/midwest/endangered/lists/pdf/OhioCtyListMay2017.pdf) was reviewed to determine the threatened and endangered species known to occur in Jackson County. This USFWS publication lists the following species as occurring within Jackson County: Indiana bat (Myotis sodalis; federally endangered), northern long-eared bat (Myotis septentrionalis; federally threatened), running buffalo clover (trifolium stoloniferum; federally endangered), timber rattlesnake (Crotalus horridus; federal species of concern), and bald eagle (Haliaeetus leucocephalus; federal species of concern). As part of the ecological study completed for the the approved Heppner-Rhodes 138 kV Transmission Line Rebuild Project (Case Number 17-0807-EL-BLN), which covers the Project area, a coordination letter was submitted to the USFWS Ohio Ecological Services Field Office seeking technical assistance on the Project for potential impacts to threatened or endangered species. The June 2, 2017 response letter from USFWS (see Appendix D) indicated that the proposed Project is within the range of the Indiana bat and northern long-eared bat in Ohio, but if tree clearing occurs between October 1 and March 31, they do not anticipate the Project having any adverse effects to these species or any other federally listed endangered, threatened, proposed, or candidate species. The Project will require tree clearing within the new ROW. AEP Ohio Transco anticipates tree clearing associated with the Project will occur between October 1 and March 31.

Several state-listed threatened species, endangered species, and species of concern are listed by the ODNR (available at http://wildlife.ohiodnr.gov/portals/wildlife/pdfs/species%20and%20habitats/state-listed%20species/jackson.pdf) as occurring, or potentially occurring in Jackson County. These state-listed species are addressed in detail in the Ecological Survey Report included in Appendix D.

A coordination letter was submitted to the Ohio Department of Natural Resources ("ODNR"), Division of Wildlife ("DOW") Natural Heritage Program ("NHP") in May 2017, for the approved Heppner-Rhodes 138 kV Transmission Line Rebuild Project (Case Number 17-0807-EL-BLN), which covers the Project area. The letter was seeking an environmental review of the Project for potential impacts on state-listed and federally-listed threatened or endangered species. The October 20, 2017 response letter indicated (Project ID 17-638) that the Cerulean Warbler (*Setophaga cerulea*), a state and federal species of concern has records within a one-mile radius of the Project area. However, impacts to the nesting Cerulean Warbler are not anticipated as tree clearing is anticipated to be completed outside of the species' nesting season. The response letter is also within the range of the Indiana bat, a state endangered and federally endangered species, but if tree clearing occurs between October 1 and March 31, the ODNR DOW does not anticipate the Project having any adverse effects to the Indiana bat. The Project is also located within the range of the following state listed species: little spectaclecase (*Villosa lienosa*), Ohio lamprey (*Ichthyomyzon bdellium*), lake chubsucker (*Erimyzon sucetta*), timber rattlesnake (*Crotalus horidus* 

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horridus), Kirtland's snake (Clonophis kirtlandii), mud salamander (Pseudotriton montanus), and black bear (Ursus americanus). In regards to the little spectaclecase, the Project is not likely to impact this species due to the Project location and that there is no in-water work proposed in a perennial stream of sufficient size. For the Ohio lamprey and lake chubsucker, the DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to these indigenous aquatic species and their habitat; these species will not be impacted as no instream work is proposed for the Project. As for the remaining species, the Project is not likely to impact the timber rattlesnake, Kirtland's snake, mud salamander, and black bear due to the Project location, type of habitat along the Project route and within the vicinity of the Project route, or the mobility of the species per the ODNR.

#### B(10)(f) Areas of Ecological Concern

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

The Project area is within the area previously coordinated with the ODNR and USFWS as part of the the approved Heppner-Rhodes 138 kV Transmission Line Rebuild Project (Case Number 17-0807-EL-BLN). The ODNR DOW NHP responded in a letter dated October 20, 2017 (Project ID 17-638) indicating that the Coalton Wildlife Area (managed by the ODNR DOW) is located within a one-mile radius of the Project area. The Coalton Wilfe Area is a 1,729 acre tract of land managed for public hunting and fishing and is located approximately 1,800 feet north of the proposed Heppner Station. The Colaton Wildlife Area will not be impacted by the Project. The USFWS Columbus Ecological Services Office responded in an email dated may 31, 2017 (Project ID 03E15000-2017-TA-1326) indicating that there are no federal wilderness areas, wildlife reguges, or designated critical habitat within the vicinity of the Project area. Consultation with the ODNR NHP and USFWS is provided in Appendix D.

No properties identified in the National Conservation Easement Database (http://www.conservationeasement.us) were identified in the Project vicinity.

The FEMA Flood Insurance Rate Map was reviewed to identify any floodplains/flood hazard areas that have been mapped within the Project area (specifically, map number 39079Co16oK). Based on this mapping, no mapped FEMA floodplains are located in the Project area.

A review of the National Wetlands Inventory ("NWI") database indicated that there were no NWI-mapped wetlands identified within the Project area. Wetland and stream delineation field surveys were completed for the initial Heppner-Rhodes project by AEP Ohio Transco's consultant in July and December 2017 and revised to include the adjustment to the Heppner-Rhodes line in April 2018. During the April 2018 survey, one (1) wetland (W010) was expanded within the Project area. One (1) wetland and one (1) stream were identified within the Project area. The results of the wetland and stream delineations for the initial

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Heppner-Rhodes project, as well as a revised map showing the expanded wetland within the Project area, are presented in the Ecological Survey Report included in Appendix D.

#### **B(10)(g)** Unusual Conditions

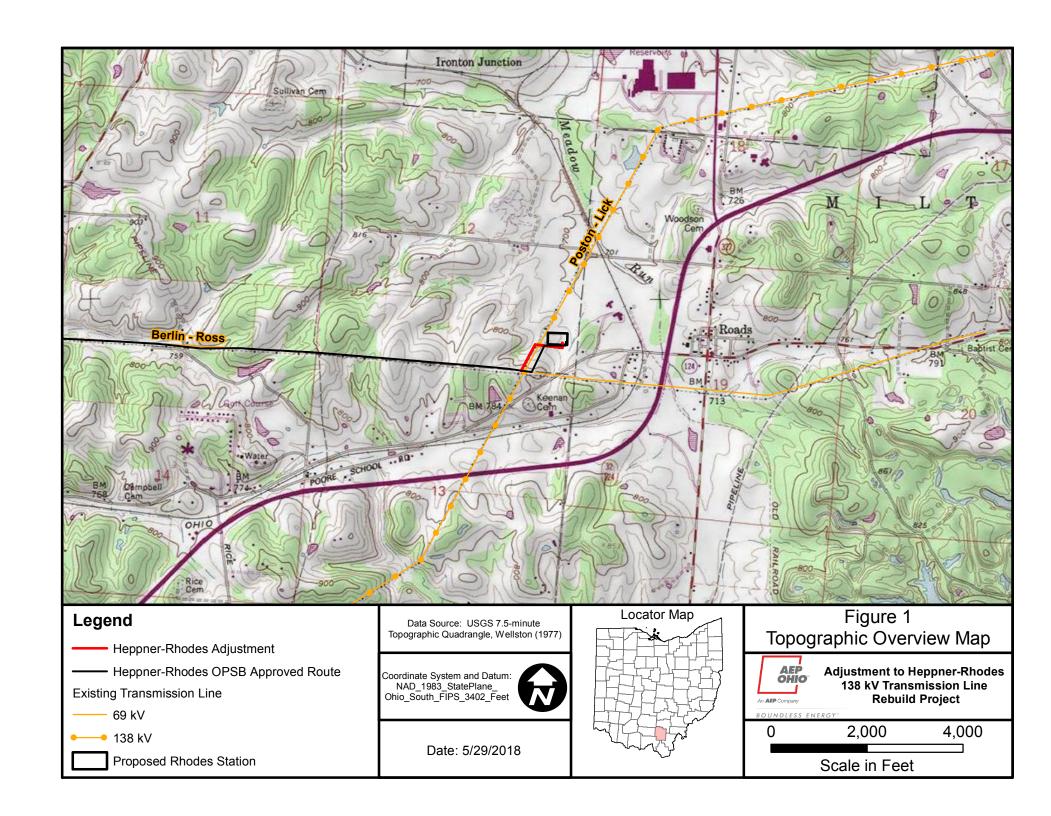
Provide any known additional information that will describe any unusual conditions resulting in significant environmental, social, health, or safety impacts.

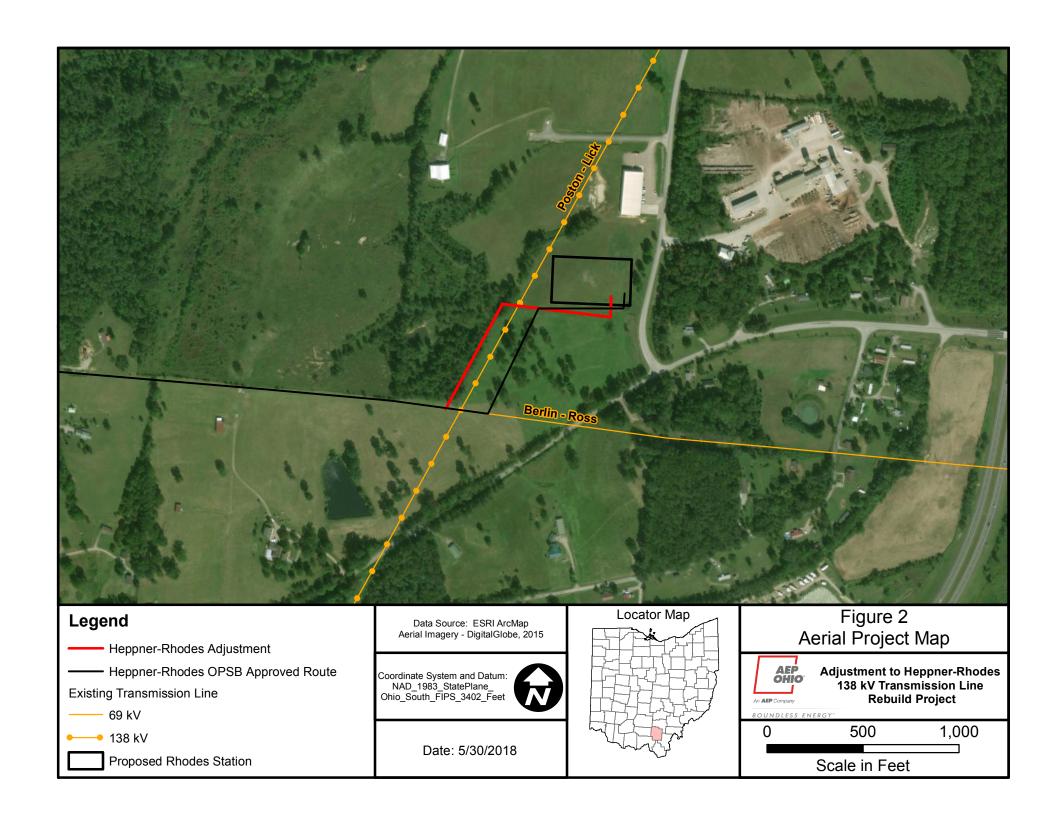
To the best of AEP Ohio Transco's knowledge, no unusual conditions exist that would result in significant environmental, social, health, or safety impacts.

Appendix A Project Maps May 2018

## Appendix A Project Maps

Figures 1 and 2





Appendix B PJM Submittal and 2018 Long Term Forecast Report May 2018

Appendix B PJM Submittal and 2018 Long Term Forecast Report

## **PJM Submittal**



# AEP Transmission Owner Criteria Violation and Supplemental Project

#### **Problem Statement:**

The City of Jackson has requested a new 69kV delivery point (Ironman Switch) capable of carrying their entire load, which will be ~37 MW due to a 4 MW load increase by the City. This new delivery point will be redundant with the existing 138kV delivery point out of Lick Station.

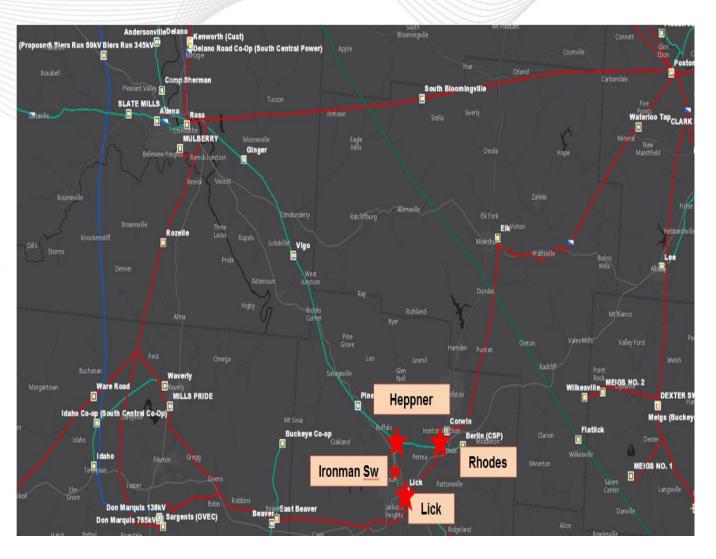
After the customer load is connected and is at the full capacity, there is an N-1 violation that drops the voltage at the customer bus to ~65% and thermally overloads the Lick-Ross 69kV Circuit to 130%. To solve this violation, a new 138/69kV station will be established (Rhodes Station), injecting a 3rd source onto the Lick-Ross 69kV circuit. Following the solution, no N-1 or N-1-1 violations appear.

The new City of Jackson delivery point is directly adjacent to the existing Berlin-Lick-Ross 69kV circuit. Of the 37+ miles of conductor on the circuit, 88% (32.96 miles) is original from the 1926 line construction – mostly 4/0 ACSR Penguin (50 MVA rating). Of the 275 structures, 98% (269) are wood and 43% (119) are older than 1960. There are 241 open conditions on the line, including issues with conductor, structures, and ROW encroachments. The line has been responsible for 1.4M CMI from 2013-2015, including over 12.5k customer interruptions. It is recommended that this circuit be rebuilt to 138kV standards in anticipation of a future 138kV conversion to become an additional 138kV path to support Ross Station as there is only one 138 kV source that currently feeds Ross station from the South.

Issues at every switch structure on this circuit (Coalton Sw, Pine Ridge Sw, Vigo, and Ginger) complicates any planned outages as momentary outages are required at all three stations in order to isolate a circuit section. AEP's MPOI calculation justifies the installation of breakers at Heppner station, which will replace Coalton switch. —City of Jackson, Jackson County, OH

#### Continued on next slide...

# **AEP Transmission Zone**





# AEP Transmission Owner Criteria Violation and Supplemental Project

Continued from previous slide...

#### **Potential Alternative Solutions Considered:**

- Extend 69kV from East Beaver-Buckeye Co-Op to Pine Ridge, construct ring bus at Pine Ridge. This alternative was ruled out due to the need to rebuild the radial from East Beaver-Buckeye Co-Op (4.53 miles) and the need for 7 miles of new right-of-way to extend the line to Pine Ridge. Estimated Cost: \$34M
- New 138/69kV Transformer at Corwin, 69kV line extension through AEP's retired Berlin Station. Expansion difficulties at Corwin would likely lead to a complete rebuild of the station, plus an additional mile of 69kV greenfield line in addition to constructing Rhodes station. Estimated Cost: \$23M

#### **Preliminary Solution:**

Install a new Ironman Switch to serve a new delivery point requested by the City of Jackson for a load increase request. Establish a new 138/69 kV station (Rhodes) to serve as a third source to the area to help relieve overloads caused by the customer load increase. Replace Coalton Switch with a new three breaker ring bus (Heppner). (Baseline)

Estimated Cost: \$13M

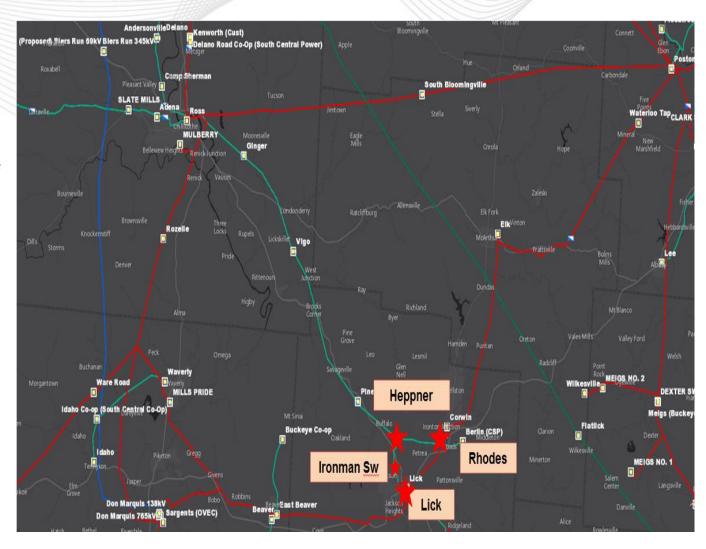
Rebuild approximately 6 miles of line from Rhodes to Heppner and from Heppner to Lick with 1033 ACSR (148 MVA rating). Build for future 138 kV conversion. (Supplemental)

Estimated Cost: \$7M

Required IS date: 3/1/2018

Status: Engineering

# **AEP Transmission Zone**



# 2018 Long Term Forecast Report

# AEP OHIO TRANSMISSION COMPANY, INC.

# LONG-TERM FORECAST REPORT TO THE PUBLIC UTILITIES COMMISSION OF OHIO

Case No. 18-1501-EL-FOR

2018

**ELECTRIC** 

# LONG-TERM FORECAST REPORT TO THE PUBLIC UTILITIES COMMISSION OF OHIO

#### Submitted by

AEP Ohio Transmission Company, Inc. 700 Morrison Road Gahanna, Ohio 43230 Telephone: (614) 716-1000

#### CERTIFICATE OF SERVICE

#### I hereby certify that:

- Pursuant to Section 4901:5-1-03(F), Ohio Administrative Code, copies of AEP Ohio Transmission Company, Inc.'s 2018 Long-Term Forecast Report have been delivered or mailed to the Office of Consumers' Counsel on the day of the filing;
- Pursuant to Section 4901:5-1-03(G), Ohio Administrative Code, a letter of notification stating where copies of AEP Ohio Transmission Company, Inc.'s 2018 Long-Term Forecast Report to the Public Utilities Commission of Ohio may be obtained, will be sent by first class mail to the appropriate county libraries within three days of filing;
- 3. Pursuant to Section 4901:5-1-03(H), Ohio Administrative Code, AEP Ohio Transmission Company, Inc. will keep at least one copy of their 2018 Long-Term Forecast Report at their principal business office for public inspection during business hours; and
- 4. Pursuant to Section 4901:5-1-03(I), Ohio Administrative Code, AEP Ohio Transmission Company, Inc. will provide a copy of their 2018 Long-Term Forecast Report to any person upon request at a cost to cover the expenses incurred.

Steve T. Nourse

American Electric Power Service Corporation

1 Riverside Plaza

Columbus, Ohio 43215

(614) 716-1608

Attorney for AEP Ohio Transmission Company, Inc.

April 16, 2018 Dated this day in Columbus, Ohio

# STATEMEMENT PURSUANT TO SECTION 4901:5-1-03(D), OHIO ADMINISTRATIVE CODE

AEP Ohio Transmission Company, Inc.'s 2018 Long-Term Forecast Report is true and correct to the best of my knowledge and belief.

Robert W. Bradish

Vice President, Transmission Planning and Engineering

AEP Ohio Transmission Company, Inc.

April 16, 2018 Dated this day in Columbus, Ohio

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# AEP OHIO TRANSMISSION COMPANY, Inc. LTFR TRANSMISSION FORMS

Case No. 18-1501-EL-FOR

# PUCO FORM FE-T9 AEP OHIO TRANSMISSION COMPANY SPECIFICATION OF PLANNED ELECTRIC TRANSMISSION LINES

<del>-</del>	Line Name and Number:	Berlin - Lick - Ross
2.	Points of Origin and Termination:	Heppner/Rhodes; Intermediate Station - N/A
3.	Right-Of-Way:	~4.2 miles / 100 ft / 1 ckt
4.	Voltage:	138KV / 69KV
5.	Application For Certificate:	2018
9	Construction:	2018
7.	Capital Investment:	\$20M
89	Planned Substations:	Name - Rhodes; Voltage - 138/12kV; Acreage - N/A; Location - Jackson
.6	Supporting Structures:	steel H - frame
10.	Participation with Other Utilities:	N/A
1.	Purpose of the Planned Transmission Line	Tie 138kV Lick-Corwin line to Lick Ross line for reliability
12.	Consequences of Line Construction Deferment or Termination:	Reduced reilability for Jackson County customers
13.	Miscellaneous	

Appendix C Ohio History Connection Concurrence Letters May 2018

## **Appendix C Ohio History Connection Concurrence Letters**



In reply refer to 2017-JAC-40081

October 23, 2017

Mr. Ryan J. Weller Weller & Associates, Inc. 1395 West Fifth Avenue Columbus, Ohio 43212

RE: Heppner-Rhodes 69kV/138kV Rebuild Project in Lick and Coal Townships, Jackson County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received on September 25, 2017 regarding the proposed Heppner-Rhodes 69kV/138kV Rebuild Project, Lick and Coal Townships, Jackson County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-4). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (16 U.S.C.470 [36 CFR 800]).

The following comments pertain to the *Phase I Archaeological Investigations for the Proposed 6.4 km* (4.0 mi) Heppner-Rhodes 69kV/138kV Rebuild Project in Lick and Coal Townships, Jackson County, Ohio by Weller & Associates, Inc. (2017).

A literature review, visual inspection, shovel probe excavation, and shovel test unit excavation was completed as part of the investigations. No previously inventoried Ohio Archaeological Inventory (OAI) site is located within the project area. Three (3) Ohio Archaeological Inventory (OAI) sites were identified as part of this survey. OAI#33JA0408 and 33JA0410 are prehistoric period lithic scatters that were identified during shovel test unit excavation. OAI#33JA0409 is a multicomponent scatter identified during subsurface testing methods. The historic-period artifacts identitied included a Point Pleasant pipe stem fragment (c. 1830-1890). None of the sites are recommended as eligible for listing in the National Register of Historic Places (NRHP). Based on the information provided, we agree the archaeological sites are not eligible for listing in the NRHP and no further archaeological work is necessary.

The following comments pertain to the History/Architecture Investigations for the Proposed 6.4 km (4.0 mi) Heppner-Rhodes 69kV/138kV Rebuild Project in Lick and Coal Townships, Jackson County, Ohio by Weller & Associates, Inc. (2017).

The investigations consisted of a systematic survey of all properties fifty years of age of older that are situated within 1,000' on either side of the proposed project site. In total, three individual properties of fifty years or age or older were identified within the survey APE that may have a direct line-of-sight to the project.

It is Weller's recommendation that none of these properties are eligible for inclusion in the National Register of Historic Places due to alterations, additions, and a loss of historic integrity. Our office agrees with Weller's recommendations regarding eligibility.

RPR Serial No: 1070648, 1070649

Mr. Ryan J. Weller Page 2 October 23, 2017

The results of the architectural investigation identified no historic properties located within the APE that exhibit potential significance for inclusion in the National Register of Historic Places. Therefore, we agree that the project as proposed will have no effect on historic properties.

Based on the information provided, we agree the project will not affect historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during implementation of this project. In such a situation, this office should be contacted.

If you have any questions, please contact me at (614) 298-2022, or by e-mail at <a href="mailto:khorrocks@ohiohistory.org">khorrocks@ohiohistory.org</a>. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager

Resource Protection and Review

cc: Ron Howard, AEP (rmhoward@aep.com)



In reply refer to 2017-JAC-39798

May 24, 2018

Mr. Ryan J. Weller Weller & Associates, Inc. 1395 West Fifth Avenue Columbus, Ohio 43212

RE: Heppner-Lick 69kV/138kV Electric Line Project Access Road Routes and Expanded/Altered Pull Areas – Additional Addendum, Coal, Milton, and Lick Townships, Jackson County, Ohio

Dear Mr. Weller:

This letter is in response to the correspondence received on May 18, 2018 regarding the proposed Heppner-Lick 69kV/138kV Electric Line Project Access Road Routes and Expanded/Altered Pull Areas – Additional Addendum, Coal, Milton, and Lick Townships, Jackson County, Ohio. We appreciate the opportunity to comment on this project. The comments of the Ohio State Historic Preservation Office (SHPO) are made pursuant to Section 149.53 of the Ohio Revised Code and the Ohio Power Siting Board rules for siting this project (OAC 4906-4). The comments of the Ohio SHPO are also submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (54 U.S.C. 306108 [36 CFR 800]).

The following comments pertain to the Additional Addendum: Phase I Cultural Resource Investigations for Access Road Routes and Expanded/Altered Pull Areas for the Heppner-Lick 69kV/138kV Electric Line Project in Coal, Milton, and Lick Townships, Jackson County, Ohio by Weller & Associates, Inc. (2018).

A literature review, visual inspection, and shovel test unit excavation was completed as part of the investigations. No previously identified archaeological sites are located within the project area. No new archaeological sites were identified during this survey. The recommendations made in our previous coordination letters, dated September 8, 2017 and December 19, 2017, remain. Based on the information provided, we still agree no additional archaeological survey is needed. No above-ground resources over the age of fifty years old were identified in the additional addendum. Therefore, we continue to agree that the project as proposed will have no indirect adverse effect on historic properties.

Based on the information provided, we agree with our original determination that the project will have no adverse effect on historic properties. No further coordination with this office is necessary, unless the project changes or unless new or additional historic properties are discovered during the implementation of this project. In such a situation, this office should be contacted.

If you have any questions, please contact me at (614) 298-2022, or by e-mail at <a href="mailto:khorrocks@ohiohistory.org">khorrocks@ohiohistory.org</a>. Thank you for your cooperation.

Sincerely,

Krista Horrocks, Project Reviews Manager

Resource Protection and Review

cc: Ron Howard, AEP (rmhoward@aep.com)

RPR Serial No: 1074073

Appendix D Ecological Survey Report May 2018

# Appendix D Ecological Survey Report



# **Ecological Survey Report**

AEP Ohio Transmission Company Heppner – Rhodes 138kV Line Rebuild Project Jackson County, Ohio

GAI Project Number: C170352.06, Task 001

October 2017



BOUNDLESS ENERGY \*\*

## **Ecological Survey Report**

#### AEP Ohio Transmission Company Heppner – Rhodes 138kV Line Rebuild Project Jackson County, Ohio

GAI Project Number: C170352.06, Task 001

October 2017

Prepared for:
American Electric Power Service Corporation
1 Riverside Place
22nd Floor
Columbus, Ohio 43215-2373

Prepared by:
GAI Consultants, Inc.
Canton Office
3720 Dressler Road Northwest
Canton, Ohio 15120-2700

Report Authors:

Allison R. Wheaton, WPIT Senior Project Environmental Specialist

> George T. Reese, MS, CE Environmental Director

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#### 1.0 Introduction

GAI Consultants, Inc. (GAI), on behalf of American Electric Power Ohio Transmission Company (AEP), completed an ecological survey for the Heppner – Rhodes 138kV Line Rebuild Project (Project) located in Jackson County, Ohio (OH). The Project involves rebuilding approximately 4.6-miles of the existing 69 kilovolt (kV) transmission line to a 138kV transmission line.

Ecological surveys were completed on July 17-19, 2017. The study area consisted of a 200-foot-wide corridor centered along the existing transmission line, as shown on Figure 1.

The Project study area is located within the Horse Creek-Little Salt Creek (United States Geological Survey [USGS] Hydrologic Unit Code [HUC] #050600020803), Dickason Run (HUC #050901010402), and Headwaters Little Raccoon Creek (HUC #050901010401) watersheds.

This report details the results of the ecological surveys regarding the existence of aquatic resources within the Project area (Figure 2). The United States Army Corps of Engineers (USACE) Wetland Determination Data Forms are provided in Appendix B. Ohio Environmental Protection Agency (OEPA) Primary Headwater Habitat Evaluation (HHEI) Data Forms are provided in Appendix C and Ohio Rapid Assessment Method for Wetlands (ORAM) Data Forms are provided in Appendix D.

#### 2.0 Methods

#### 2.1 Wetlands

The 1987 USACE *Corps of Engineers Wetlands Delineation Manual* (Wetlands Delineation Manual) (USACE, 1987) and the 2012 *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, Version 2.0* (Regional Supplement) (USACE, 2012) describe the methods used to identify and delineate wetlands that fall under the jurisdiction of the USACE. This approach recognizes the three parameters of wetland hydrology, hydrophytic vegetation, and hydric soils to identify and delineate wetland boundaries. In accordance with the Wetlands Delineation Manual and Regional Supplement, GAI completed preliminary data gathering and onsite inspections.

#### 2.1.1 Preliminary Data Gathering

The preliminary data gathering was used to compile and review information that may be helpful in identifying wetlands and/or areas that warrant further inspection during the investigation. The preliminary data gathering included a review of the following:

- ▶ USGS 7.5-minute topographic mapping for Jackson (USGS, 1978) and Wellston (USGS, 1977), OH (Figure 1);
- United States Fish and Wildlife Service (USFWS), National Wetlands Inventory (NWI) mapping (USFWS, 2015) (Figure 2);
- ► Federal Emergency Management Agency (FEMA), National Flood Hazard Layer (FEMA, 2015) (Figure 2); and
- United States Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS, 2015) soil mapping (Figure 2).

Topographic mapping was used to identify mapped streams and the overall shape of the landscape in the Project area to determine potential locations for wetlands, such as floodplains and depressions. NWI mapping was used to determine locations where probable wetlands are located based on infrared photography. Soil mapping was reviewed to determine the location and extent of mapped hydric soils that have a high probability of containing wetlands.



#### 2.1.2 Onsite Inspection

The methodology described in the Regional Supplement identifies areas meeting the definition of a wetland by evaluating three parameters: hydrology, vegetation, and soil. During the onsite inspection, GAI staff traversed the Project study area on foot to determine if any indicators of wetlands were present. When indicators of wetlands were observed, an observation point was established, and a Wetland Determination Data Form (Data Form) was completed to determine if all three wetland indicators were present.

The presence of wetland hydrology was determined by examining the observation point for primary and secondary indicators of wetland hydrology. The presence of any primary indicator signified the presence of wetland hydrology, or the presence of two or more secondary indicators signified the presence of wetland hydrology.

Vegetation was characterized by four different strata. This included trees (woody plants, excluding vines, three inches or more in diameter at breast height [DBH]), saplings/shrubs (woody plants, excluding vines, less than three inches DBH and greater than or equal to 3.28 feet tall), herbs (non-woody plants, regardless of size, and all other plants less than 3.28 feet tall), and woody vines (greater than 3.28 feet tall). In general, trees and woody vines were sampled within a thirty-foot (30') radius, saplings and shrubs were sampled within a fifteen-foot (15') radius, and herbs were sampled within a five-foot (5') radius.

When evaluating an area for the presence of hydrophytes, classification of the indicator status of vegetation was based on *The National Wetland Plant List: 2016 Update of Wetland Ratings* (Lichvar et al., 2016). The list of possible indicator statuses for plants is as follows:

- Obligate Wetland (OBL) Obligate Wetland plants occur in standing water or in saturated soils;
- ► Facultative Wetland (FACW) Facultative Wetland plants nearly always occur in areas of prolonged flooding or require standing water or saturated soils but may on rare occasions, occur in non-wetlands;
- Facultative (FAC) Facultative plants occur in a variety of habitats, including wetland and mesic to xeric non-wetland habitats but often occur in standing water or saturated soils;
- Facultative Upland (FACU) Facultative Upland plants typically occur in xeric or mesic non-wetland habitats but may frequently occur in standing water or saturated soils; and
- Obligate Upland (UPL) Obligate Upland plants almost never occur in water or saturated soils.

Presence of hydrophytic vegetation was determined by using a Rapid Test, Dominance Test or Prevalence Index (USACE, 2010). The Rapid Test finds a vegetation community to be hydrophytic if all dominant species are OBL or FACW. Hydrophytic vegetation was considered present based on the Dominance Test if more than 50 percent of dominant species are OBL, FACW, or FAC. The Prevalence Index weighs the total percent of vegetation cover based on the indicator status of each plant. Hydrophytic vegetation was considered present when the Prevalence Index is less than or equal to 3.0.

To determine the presence of hydric soils, soil data was collected by digging a minimum 16-inch soil pit. The soil profile was studied and described, while possible hydric indicators were examined. Soil indicators described in the Wetlands Delineation Manual and Regional Supplement were used to determine the presence of hydric soils. The presence of any of these indicators signified a hydric soil.



If all three parameters including wetland hydrology, a dominance of hydrophytic vegetation, and hydric soils were identified at a single observation point, the area was determined to be a wetland. Once a wetland was identified, the boundary was delineated.

Wetland boundaries were determined by looking for locations in which one of the three wetland indicators would transition into an upland characteristic. When the transition was identified, a Data Form was completed in the Upland Area. Wetland boundaries were then marked in the field using pink flagging labeled "WETLAND DELINEATION." The locations of the flags were recorded using a Global Positioning System (GPS) unit. Each wetland was codified with a unique identifier indicating the feature type and number (e.g., W001).

Wetlands were then classified using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979) as modified for NWI Mapping Convention. This system classifies wetlands based on topographic position and vegetation type. Palustrine system wetlands found within the study area are classified as Palustrine Emergent (PEM), Palustrine Scrub-Shrub (PSS), Palustrine Forested (PFO), or Palustrine Unconsolidated Bottom (PUB) based on aerial coverage of the vegetative community across the extent of the wetland boundary (Cowardin et al., 1979).

#### 2.2 Waterbodies

As with wetlands, Section 404 of the Clean Water Act (CWA) and state regulations protect waterbodies in OH. Generally, waterbodies are defined as environmental features that have defined beds and banks, ordinary high water mark (OHWM), and contain flowing or standing water for at least a portion of the year.

#### 2.2.1 Preliminary Data Gathering

During the preliminary data gathering, the USGS 7.5-minute topographic mapping was examined for the presence of mapped waterbodies including perennial and intermittent streams. In addition, the topographic mapping was used to identify areas likely to contain unmapped waterbodies including ephemeral streams (USGS, 1977 and 1978) (Figure 1).

The OEPA Stream Eligibility Web Map was used to determine eligibility coverage under the 401 Water Quality Certification (WQC) for the 2017 Nationwide Permits (NWPs). Furthermore, the map was used to identify any ineligible areas that may require a CWA Section 401 individual permit from the OEPA should stream impacts occur within the Project area (OEPA, 2017) (Figure 3).

#### 2.2.2 Onsite Inspection

During the onsite inspection, GAI staff traversed the study area, concurrently with the wetland inspection, and waterbodies were identified. Waterbodies were identified based on the morphological and hydrologic characteristics of the channel and the presence of aquatic macroinvertebrates.

When a waterbody was identified, field measurements were collected. The measurements included top of bank width, top of bank depth, pool depth, water depth, OHWM width, and OHWM depth. A detailed description of substrate composition was also recorded. Waterbodies were then delineated using white flagging marked with the GAI stream code (e.g., S001). The tops-of-bank for streams wider than 10 feet were delineated and the centerline of smaller streams were delineated. The locations of the flags were recorded using a sub-meter capable hand-held GPS unit.



# 2.3 Rare, Threatened, and Endangered Species

GAI conducted a literature review of potential Rare, Threatened, and Endangered (RTE) species in the vicinity of the Project study area. Potential habitat for RTE species as a result of the literature review was noted during the ecological survey.

### 2.3.1 Preliminary Data Gathering

A request for review of the Ohio Natural Heritage Database (ONHD) was submitted to the Ohio Department of Natural Resources (ODNR) to determine if any state-listed threatened or endangered species occur within a one-mile radius of the Project area. A request was also submitted to the USFWS Ohio Ecological Services Field Office to determine if any federally-listed threatened or endangered species occur within the vicinity of the Project area.

## 2.3.2 Onsite Inspection

During the onsite inspection, GAI staff traversed the study area in conjunction with the wetland and waterbody inspections to determine if suitable habitat for state- and/or federally-listed RTE species are present within the study area.

## 3.0 Results

## 3.1 Wetlands

## 3.1.1 Preliminary Data Gathering

Desktop review of available USFWS NWI digital data for the Project revealed two NWI mapped wetlands located within the Project study area. One NWI wetland is classified as Palustrine Scrub-Shrub, Broad-Leaved Deciduous/Emergent, Persistent, Seasonally Flooded (PSS1/EM1C) and corresponds with W004 and W005. The other NWI wetland is classified as Palustrine Unconsolidated Bottom, Intermittently Exposed, Excavated (PUBGx) and corresponds with W001 (USFWS, 2015).

According to the USDA-NRCS soil mapping, a total of 15 soil map units are located within the Project study area (Figure 2). One of the soil map units is classified as hydric (Piopolis silt loam [Pio1AF]) and one is known to contain hydric inclusions (Orrville silt loam [Or]).

## 3.1.2 Onsite Inspection

Ten wetlands were identified and delineated within the Project study area, including eight PEM wetlands and two PUB wetlands. In order to document site conditions, USACE Data Forms were completed for each wetland and upland reference. Information on the delineated wetlands can be found in Table 1 and photographs of the wetlands are included in Appendix A.

#### 3.1.3 Regulatory Discussion

The USACE guidance divides waterbodies into three groups: Traditionally Navigable Waters (TNWs), non-navigable Relatively Permanent Waters (RPWs), and non-navigable Non-RPWs. TNWs are waterbodies which have been, are, or may be susceptible to use in interstate commerce, including recreational use of the waterbody. RPWs are waterbodies that flow year round, or at a minimum seasonally, by exhibiting continuous flow for at least three consecutive months, but are not TNWs (USACE, 2007). Non-RPWs are waterbodies that do not flow continuously for at least three consecutive months, are not TNWs or RPWs, but typically exhibit characteristic beds, banks, and OHWM (USACE, 2007).

The status of wetlands is determined partly based on the classification of the waterbody that the wetland is associated with, and the degree of that association. Wetlands that abut or are



adjacent to TNWs are jurisdictional. Wetlands that abut RPWs are jurisdictional. Wetlands that are adjacent to RPWs and wetlands that abut or are adjacent to Non-RPWs must be subjected to the Significant Nexus Test (SNT) to determine their jurisdictional status. Generally, the USACE considers wetlands that are isolated, meaning that they are not associated with any other surface water feature, as non-jurisdictional; and wetlands that abut or are adjacent to Non-RPWs as needing further examination by the USACE to determine and verify whether they exhibit a significant nexus to waters of the United States. If these wetlands exhibit a significant nexus, they are jurisdictional; if not, they are not subject to USACE jurisdiction.

Wetlands that do not exhibit an association with any surface water are categorized as "isolated" under present USACE guidance and policy. These wetlands are regulated by the OEPA Division of Surface Water, and may require an Isolated Wetland Permit.

As regulated by Ohio Administrative Code (OAC) rules 3745-1-50 through 3745-1-54, wetlands were also evaluated using the ORAM to determine the appropriate wetland category. Any wetland score that fell within a gray zone between categories was scored one of two ways. Either the wetland was assigned to the higher of the two categories or it was assessed using a non-rapid method to determine its quality (Mack, 2001). The category assigned to a particular wetland determines the requirement, if any, for additional levels of protection administered by the OEPA.

All wetlands within the study area were identified as jurisdictional. Jurisdictional status is the opinion of GAI and must be confirmed by USACE and state agencies through the Jurisdictional Determination (JD) process.

## 3.2 Waterbodies

## 3.2.1 Preliminary Data Gathering

Desktop review of the available USGS topographic mapping revealed three previously mapped stream segments located within the Project study area (Figure 1). Desktop review of OEPA's Stream Eligibility Web Map revealed the Project is located within eligible and possibly eligible areas for automatic 401 WQC coverage (Figure 3).

## 3.2.2 Onsite Inspection

Sixteen stream segments were identified and delineated within the Project study area. Six stream segments were classified as having a perennial flow regime, four were classified as intermittent, and six were classified as ephemeral. Information on the delineated waterbodies and their classifications can be found in Table 2, and photographs of the identified streams are included in Appendix A.

#### 3.2.3 Regulatory Discussion

As with wetlands, present USACE guidance and policy determines the jurisdictional status of waterbodies identified during the Project. TNWs and RPWs are jurisdictional. Non-RPWs must be subjected to the SNT by USACE to determine their jurisdictional status. If Non-RPWs exhibit a Significant Nexus, as defined in USACE guidance documents, they are jurisdictional. If not, they do not fall under the jurisdiction of the USACE.

Streams are generally defined as environmental features that have defined beds and banks, an OHWM as defined in Regulatory Guidance Letter No. 05-05 (USACE, 2005), and contain flowing or standing waters for at least a portion of the year. Streams were classified as perennial, intermittent, or ephemeral based upon presence of flow, estimated duration of flow, stream bed characteristics, and presence of aquatic biota. The USACE *Jurisdictional* 



*Determination Form Instructional Guidebook* (USACE, 2007) was used to determine stream classification and flow status.

As regulated by OAC Chapter 3745-1-13 and Section 401 WQC, streams were also assessed according to OEPA guidance using either the HHEI for watersheds less than one square mile in size, or the Qualitative Habitat Evaluation Index (QHEI) for watersheds between one and 20 square miles in size.

One stream segment (S002) located within the Project study area was identified as Horse Creek, which is designated as a Warmwater Habitat (WWH) stream by OAC Chapter 3745-1-09. Two stream segments (S008 and S013) were identified as Sugar Run, which is designated as a WWH stream by OAC Chapter 3745-1-09. All other stream segments located within the Project study area were identified as Unnamed Tributaries (UNTs) to Horse Creek, Sugar Run, Dickason Run, and Meadow Run.

Fifteen stream segments (S001 thru S014 and S016) are located within a possibly eligible area for coverage under the 401 WQC for NWPs. One stream segment (S015) is located within an eligible area for coverage.

## 3.3 Rare, Threatened, and Endangered Species

### 3.3.1 Preliminary Data Gathering

Desktop review of ODNR, Division of Wildlife's Ohio's Listed Species revealed 321 Endangered, Threatened, Species of Concern, and Species of Interest located in OH (ODNR, 2016). Seventeen of the state-listed species are considered federally Endangered, and four are federally Threatened.

A review of the USFWS *County Distribution of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species for Ohio* as well as the USFWS Information for Planning and Consultation (IPaC) website revealed three federally endangered or threatened species that may occur within the Project study area (USFWS, 2017). The list of species includes the following:

- ▶ Indiana bat (*Myotis sodalis*) Endangered;
- Northern long-eared bat (*Myotis septentrionalis*) Threatened; and
- Running buffalo clover (*Trifolium stoloniferum*) Endangered.

In addition to the species listed above, there are nine species of migratory birds that may occur within the Project study area.

## 3.3.2 Onsite Inspection

Potential habitat for RTE species was evaluated within the Project study area. In general, the habitat encountered within the study area consisted of cleared transmission line right-of-way, PEM and PUB wetlands, successional mixed deciduous forest, agricultural fields (fallow, pasture), and residential properties. Six perennial, four intermittent, and six ephemeral streams were also identified within the Project study area. Representative photographs of the identified habitat types are included in Appendix A.

### 3.3.3 Regulatory Discussion

State-listed RTE species fall under the jurisdiction of the ODNR, Division of Wildlife, while federally-listed species are covered under Section 7 of the Endangered Species Act. The Bald and Golden Eagle Protection Act and Migratory Bird Act aim to extend protection to certain bird species that fall under the jurisdiction of the USFWS. Based on the desktop review and on-site



inspection, informal consultation with the ODNR and USFWS has been initiated to determine if any activities associated with the proposed Project may affect state- and/or federally-listed RTE species. The ODNR and USFWS consultation letters were submitted on May 12, 2017, and are provided in Appendix E. A response from the USFWS was received on June 2, 2017, and is also provided in Appendix E. The ODNR response will be appended when received.

## 4.0 Conclusions

Ecological surveys were conducted within the Project study area on July 17-19, 2017. Eight PEM wetlands and two PUB wetlands were identified within the Project study area. Sixteen stream segments (six perennial, four intermittent, and six ephemeral) were also identified within the Project study area. Summaries of the delineated aquatic features are provided in Tables 1 and 2, and a map of their locations is depicted on Figure 2. Photographs of the wetland and stream features are included in Appendix A. Wetland Determination Data Forms documenting the investigation are provided in Appendix B, with HHEI and ORAM Data Forms provided in Appendix C and D, respectively.

The jurisdictional status of these features are considered preliminary and should be confirmed with the USACE and state agencies through the JD process.



## 5.0 References

- Cowardin, D. M., V. Carter, F. C. Golet, and E. T. La Roe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. United States Department of the Interior, Fish and Wildlife Service. Publication No. FWS/OBS 79/31. Washington, D.C.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. United States Department of the Army, United States Army Engineer Waterways Experiment Station. Technical Report Y-87-1. Vicksburg, Mississippi.
- Federal Emergency Management Agency. 2015. National Flood Hazard Layer Web Map Service (WMS). Available from https://hazards.fema.gov/femaportal/wps/portal/NFHLWMSkmzdownload.
- Lichvar, R. W., D.L. Banks N. C. Melvin, and W. N. Kirchner. 2016. The National Wetland Plant List: 2016 Update of Wetland Ratings. Phytoneuron 2016-30: 1-17. United States Army Corps of Engineers, Engineer Research and Development Center, Cold Regions Research and Engineering Laboratory, Hanover, New Hampshire, and BONAP, Chapel Hill, North Carolina. Available from http://rsgisias.crrel.usace.army.mil/NWPL/.
- Mack, John J. 2001. Ohio Rapid Assessment Methods for Wetlands Manual for Using Version 5.0. Ohio EPA Technical Bulletin Wetland/2001-1-1. Ohio Environmental Protection Agency, Division of Surface Water, 401 Wetland Ecology Unit, Columbus, Ohio.
- Ohio Administrative Code. 2011. State of Ohio: Water Quality Standards, Chapter 3745-1.
- Ohio Department of Natural Resources, Division of Wildlife. Ohio's Listed Species. https://wildlife.ohiodnr.gov/portals/wildlife/pdfs/publications/information/pub356.pdf.
- Ohio Environmental Protection Agency. 2006. Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI). Ohio EPA Division of Surface Water, Columbus, Ohio.
- Ohio Environmental Protection Agency. 2012. Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams. Version 3.0. Ohio EPA Division of Surface Water, Columbus, Ohio. 117 pp.
- Ohio Environmental Protection Agency, Division of Surface Water. 2017. 401 Water Quality Certification for the Nationwide Permits Stream Eligibility Web Map (2017 Reissuance). http://oepa.maps.arcgis.com/apps/webappviewer/index.html?id=e6b46d29a38f46229c1eb47deefe 49b6
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Soil Survey Geographic (SSURGO) Database for Jackson County, Ohio. Available online at http://websoilsurvey.sc.eqov.usda.gov/App/HomePage.htm.
- United States Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0, ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-10-9. Vicksburg, Mississippi: United States Army Engineer Research and Development Center.
- United States Army Corps of Engineers. 2007. Jurisdictional Determination Form Instructional Guidebook. Available from http://www.usace.army.mil/Portals/2/docs/civilworks/regulatory/cwa\_guide/jd\_guidebook\_051207final.pdf. Accessed August 2017.
- United States Fish and Wildlife Service, Environmental Conservation Online System. Information for Planning and Consultation. https://ecos.fws.gov/ipac/.



- United States Fish and Wildlife Service. 2015. National Wetlands Inventory for Ohio. Washington, D.C.: U.S. Fish and Wildlife Service, Division of Habitat and Resource Conservation. Available from http://www.fws.gov/wetlands/Data/Mapper.html.
- United States Fish and Wildlife Service. 2017. County Distribution of Federally-Listed Endangered, Threatened, and Proposed Species. U.S. Fish and Wildlife Service, Endangered Species, Midwest Region. Available from https://www.fws.gov/midwest/endangered/lists/ohio-cty.html.

United States Geological Survey. 1977. Wellston, Ohio 7.5-Minute Topographic Quadrangle (1:24,000).

United States Geological Survey. 1978. Jackson, Ohio 7.5-Minute Topographic Quadrangle (1:24,000).



# **TABLES**



Table 1
Wetlands Identified Within the Project Study Area

Wetland I.D. <sup>1</sup>	Latitude <sup>2</sup>	Longitude <sup>2</sup>	Proximal Waterbody	USACE Classification <sup>3</sup>	Cowardin Classification <sup>4</sup>	Size⁵ (acres)	ORAM v. 5.0 Score <sup>6</sup>	ORAM Category <sup>7</sup>	Figure 2 (sheet)
W001-PEM-CATMOD2	39.084131	-82.623131	UNT to Horse Creek	Jurisdictional; Adjacent	PEM	0.077	35.5	Modified 2	2
W002-PEM-CATMOD2	39.084342	-82.622316	UNT to Horse Creek	Jurisdictional; Abutting	PEM	1.152	40.5	Modified 2	2
W003-PEM-CAT2	39.084013	-82.621145	UNT to Horse Creek	Jurisdictional; Abutting	PEM	0.027	30	2	2
W004-PUB-CAT2	39.084462	-82.620935	Horse Creek	Jurisdictional; Adjacent	PUB	0.045	50	2	2
W005-PEM-CAT2	39.084304	-82.621049	Horse Creek	Jurisdictional; Abutting	PEM	0.030	34.5	2	2
W006-PEM-CATMOD2	39.084129	-82.620396	Horse Creek	Jurisdictional; Abutting	PEM	0.141	40.5	Modified 2	2
W007-PUB-CAT2	39.080756	-82.584114	UNT to Sugar Run	Jurisdictional; Adjacent	PUB	0.071	34	2	5
W008-PEM-CAT1	39.081021	-82.584057	UNT to Sugar Run	Jurisdictional; Abutting	PEM	0.102	21	1	5
W009-PEM-CATMOD2	39.080018	-82.564669	UNT to Dickason Run	Jurisdictional; Adjacent	PEM	0.011	37.5	Modified 2	7
W010-PEM-CATMOD2	39.080620	-82.550611	UNT to Meadow Run	Jurisdictional; Adjacent	PEM	0.202	41	Modified 2	9

#### Notes:

- <sup>1</sup> GAI map designation.
- North American Datum, 1983.
- Jurisdictional status is the opinion of GAI and must be confirmed by USACE and state agencies through the JD process.
- <sup>4</sup> PEM Palustrine Emergent; PUB Palustrine Unconsolidated Bottom.



- Total acreage of wetland located within the Project study area.
- Interim scoring breakpoints for wetland regulatory categories for ORAM v 5.0 Score: Category 1 score 0 29.9; Category 1 or 2 gray zone ORAM score 30 34.9; Category modified 2 ORAM score 35 44.9; Category 2 ORAM score 45 59.9; Category 2 or 3 ORAM score 60 64.9; Category 3 ORAM score 65 100. OEPA Ecology Unit Division of Surface Water. *ORAM v. 5.0 Qualitative Score Calibration.* Dated August 15, 2000. http://www.epa.ohio.gov/portals/35/401/oram50sc\_s.pdf.
- OAC Rule 3745-1-54(C)(2) defines Category 1 wetlands as wetlands which "...support minimal wildlife habitat, and minimal hydrological and recreation functions," and as wetlands which have "..hydrologic isolation, low species diversity, a predominance of non-native species, no significant habitat or wildlife use, and limited potential to achieve beneficial wetland functions." Category 2 wetlands are defined as wetlands which "...support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Degraded but Restorable Category 2 Wetlands are according to OAC Rule 3745-1-54(C) states that wetlands that are assigned to Category 2 constitute the broad middle category that "...support moderate wildlife habitat, or hydrological or recreational functions," but also include "...wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." OAC Rule 3745-1-54(C)(2) defines Category 3 wetlands as wetlands which "...support superior habitat, or hydrological or recreational functions," and as wetlands which have "...high levels of diversity, a high proportion of native species, or high functional values."



Table 2
Waterbodies Identified Within the Project Study Area

Stream I.D. <sup>1</sup>	Waterbody Name	OEPA WQ Designation <sup>2</sup>	OEPA Stream Eligibility³	Stream Type	USACE Classification <sup>4</sup>	HHEI Score <sup>5</sup>	PHWH Class⁵	QHEI Score <sup>6</sup>	Bank Width <sup>7</sup> (feet)	OHWM Width (feet)	OHWM Depth (inches)	Stream Length <sup>8</sup> (feet)	Latitude <sup>9</sup>	Longitude <sup>9</sup>	Figure 2 (sheet)
S001	UNT to Horse Creek	-	Possibly Eligible	Perennial	RPW	35	Class II	-	2	1.5	6	674	39.084471	-82.622058	2
S002	Horse Creek	WWH	Possibly Eligible	Perennial	RPW	=	-	-	15	10	24	233	39.084222	-82.620882	2
S003	UNT to Horse Creek	-	Possibly Eligible	Ephemeral	NRPW	25	Class I	-	3	1.5	6	246	39.083316	-82.604563	3
S004	UNT to Sugar Run	-	Possibly Eligible	Intermittent	RPW	53	Class II	-	6	4.5	12	389	39.083311	-82.600450	4
S005	UNT to Sugar Run	-	Possibly Eligible	Intermittent	RPW	36	Class II	-	4	1	6	137	39.083355	-82.600390	4
S006	UNT to Sugar Run	-	Possibly Eligible	Ephemeral	NRPW	32	Class II	-	4	2	6	54	39.082946	-82.598937	4
S007	UNT to Sugar Run	-	Possibly Eligible	Perennial	RPW	62	Class II	-	5	4	12	295	39.081770	-82.591587	5
S008	Sugar Run	WWH	Possibly Eligible	Perennial	RPW	-	-	-	9	7	12	593	39.081693	-82.590576	5
S009	UNT to Sugar Run	-	Possibly Eligible	Ephemeral	NRPW	20	Class I	-	2	1	3	36	39.081609	-82.588623	5
S010	UNT to Sugar Run	-	Possibly Eligible	Perennial	RPW	52	Class II	-	5	3	12	258	39.081184	-82.586919	5
S011	UNT to Sugar Run	-	Possibly Eligible	Intermittent	RPW	34	Class II	-	2	1.5	6	252	39.081039	-82.584161	5
S012	UNT to Sugar Run	-	Possibly Eligible	Intermittent	RPW	39	Class II	-	2	1	4	188	39.080883	-82.581156	6
S013	Sugar Run	WWH	Possibly Eligible	Perennial	RPW	ı	-	-	9	7	6	1,869	39.080808	-82.579107	6
S014	UNT to Sugar Run	-	Possibly Eligible	Ephemeral	NRPW	16	Class I	-	2	2	4	306	39.080390	-82.568980	7
S015	UNT to Dickason Run	-	Eligible	Ephemeral	NRPW	22	Class I	-	3	1	6	218	39.080041	-82.562660	7,8
S016	UNT to Meadow Run	-	Possibly Eligible	Ephemeral	NRPW	24	Class I	-	2	1	4	911	39.081751	-82.549501	9

#### Notes:

- GAI map designation.
- As defined by OAC Chapter 3745-1 Water Quality Standards, Water use designations and statewide criteria (OAC 3745-1-09). http://www.epa.ohio.gov/dsw/rules/3745\_1.aspx.
- As defined by the 401 WQC conditions for stream eligibility coverage under the 2017 NWP program. Streams located in Possibly Eligible areas are eligible for coverage if the pH is <6.5 or stream flow is ephemeral. Streams located in Possibly Eligible areas are also eligible for coverage if the HHEI score is <50, or if the HHEI score is between 50-69 and substrate composition is ≤10% coarse types (includes cumulative percentage of bedrock, boulders, boulder slabs, and cobble).
- Jurisdictional status is the opinion of GAI and must be confirmed by USACE and state agencies through the JD process. RPW Relatively Permanent Waters.
- Scoring for OEPA Headwater Habitat Evaluation Index (HHEI) Primary Headwater Habitats (PHWH). Class I = 0 29.9 and include "normally dry channels with little or no aquatic life present"; Class I = 30 69.9 and are equivalent to "warm water habitat"; Class I = 70 100 and typically have perennial flow with cool-cold water adapted native fauna.
- Narrative rating for headwater streams using the OEPA Qualitative Habitat Evaluation Index (QHEI). Excellent = ≥70; Good = 55 60; Fair = 43 54; Poor = 30 42; Very Poor = <30.
- Width in feet from tops of stream bank.
- <sup>8</sup> Total stream length (in feet) located within the Project study area.
- 9 North American Datum, 1983.



Table 3
ODNR and USFWS RTE Species and Critical Habitat Review Results<sup>1</sup>

Common Name	Scientific Name	Habitat Type	Listing Status <sup>2</sup>	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates		
Amphibians								
Midland mud salamander	Pseudotriton montanus diastictus	Springs, seeps and creeks under large, flat stones	Т	No	No; Known habitat types are not present within the Project area	-		
Bats								
Indiana bat	Myotis sodalis	Trees >3" dbh	E, FE	Yes	No; Avoided with winter tree clearing	April 1 to September 30		
Northern long-eared bat	Myotis septentrionalis	Roost in cavities or in crevices of both live trees and snags; Hibernate in caves and mines with constant temperatures, high humidity, and no air currents	FT	Yes	No; Avoided with winter tree clearing	April 1 to September 30		
Fish								
Ohio lamprey	Ichthyomyzon bdellium	The Ohio River and the lower portion of its tributaries.	Е	No	No; Known habitat types are not present within the Project area	-		
Lake chubsucker	Erimyzon sucetta	Natural lakes and very sluggish streams or marshes with dense aquatic vegetation and clear waters	Т	No	No; Known habitat types are not present within the Project area	-		
Insects								
Regal fritillary	Speyeria idalia	Tall-grass and mixed-grass prairies	Е	No	No; Known habitat types are not present within the Project area	-		
Mammals	Mammals							
Black bear	Ursus americanus	Large forested areas	Е	Yes	No; Impacts are unlikely due to the migratory nature of this species	-		
Allegheny woodrat	Neotoma magister	Rocky areas associated with mountain ridges such as cliffs, caves, and rocky fissures	Е	No	No; Known habitat types are not present within the Project area	-		



Common Name	Scientific Name	Habitat Type	Listing Status <sup>2</sup>	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates
Mammals (Cont.)						
Bobcat	Lynx rufus	Varies; Generally solitary, territorial, and elusive	Т	No	No; Impacts are not anticipated due to the Project location	-
Mussels						
Elephant-ear	Elliptio crassidens crassidens	Large rivers in mud, sand, or fine gravel	E	No	No; Known habitat types are not present within the Project area	-
Sharp-ridged pocketbook	Lampsilis ovata	Large rivers in coarse sand or gravel	E	No	No; Known habitat types are not present within the Project area	-
Little spectaclecase	Villosa lienosa	Small to medium streams in sand or gravel	Е	Yes	No; In-stream work is not proposed	-
Black sandshell	Ligumia recta	Medium to large rivers in riffles or raceways in gravel or firm sand	Т	No	No; Known habitat types are not present within the Project area	-
Fawnsfoot	Truncilla donaciformis	Large rivers or the lower reaches of medium-sized streams in sand or gravel	Т	No	No; Known habitat types are not present within the Project area	-
Pondhorn	Uniomerus tetralasmus	Ponds, small creeks, and the headwaters of larger streams in mud or sand	Т	No	No; Known habitat types are not present within the Project area	-
Plants						
Small white snakeroot	Ageratina aromatic	A variety of well-drained open areas on acidic soils	E	No	No; Known habitat types are not present within the Project area	-
Louisiana sedge	Carex louisianica	Swamp woods and shaded alluvial situations	E	No	No; Known habitat types are not present within the Project area	-
Willdenow's croton	Croton willdenowii	Barren stony or sandy clearings	E	No	No; Known habitat types are not present within the Project area	-
Sessile dodder	Cuscuta compacta	Low woods and thickets	E	No	No; Known habitat types are not present within the Project area	-



Common Name	Scientific Name	Habitat Type	Listing Status <sup>2</sup>	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates
Plants (Cont.)						
Many-flowered umbrella sedge	Cyperus lancastriensis	A variety of open, dry situations, usually in sandy soils; Fields, barrens, clearings, and open woods	E	No	No; Known habitat types are not present within the Project area	-
Rough umbrella-sedge	Cyperus retrofractus	A variety of open, dry situations, usually in sandy soil; Fields, open woods, clearings, and barrens	E	No	No; Known habitat types are not present within the Project area	-
Velvet panic grass	Dichanthelium scoparium	Seepage meadows	Е	No	No; Known habitat types are not present within the Project area	-
Engelmann's spike rush	Eleocharis engelmannii	Mudflats along margins of ponds and lakes	Е	No	No; Known habitat types are not present within the Project area	-
Wolf's spike-rush	Eleocharis wolfii	Moist, open areas; Pond margins; Fields	E	No	No; Known habitat types are not present within the Project area	-
Hyssop thoroughwort	Eupatorium hyssopifolium	A variety of well-drained, open areas on acidic soils	Е	No	No; Known habitat types are not present within the Project area	-
Sampson's snakeroot	Gentiana villosa	Mesic woodlands, pinelands, dry ravines, and roadsides	E	No	No; Known habitat types are not present within the Project area	-
Coppery St. John's-wort	Hypericum denticulatum	Usually wet, shaded to open situations; Low woods, bogs, and marshes	E	No	No; Known habitat types are not present within the Project area	-
Appalachian quillwort	Isoetes engelmannii	Open sun in shallow bodies of water; Pond margins and ditches	Е	No	No; Known habitat types are not present within the Project area	-
Woodland rush	Juncus subcaudatus	Marshes, edges of streams, and peaty acidic and basic wetlands including fens; Wide variety of wet habitats	E	No	No; Known habitat types are not present within the Project area	-
One-coned club-moss	Lycopodium lagopus	Openings in woodlands and fields	E	No	No; Known habitat types are not present within the Project area	-
Bigleaf magnolia	Magnolia macrophylla	Mesic wooded ravines and near the tops of these ravines in oak woods	E	No	No; Known habitat types are not present within the Project area	-



Common Name	Scientific Name	Habitat Type	Listing Status <sup>2</sup>	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates
Plants (Cont.)						
Curtiss' milkwort	Polygala curtissii	Open to semi-open situations in dry to moist, rocky to sandy soil; Wood borders, old fields, and thickets	E	No	No; Known habitat types are not present within the Project area	-
Spotted pondweed	Potamogeton pulcher	Peaty or muddy, acid waters or shores	E	No	No; Known habitat types are not present within the Project area	-
Flame azalea	Rhododendron calendulaceum	Open woods and cleared areas on well-drained, acidic soils	Е	No	No; Known habitat types are not present within the Project area	-
Narrow-leaved bluecurls	Trichostema dichotomum var. lineare	Dry upland or sandy woods; Old fields	Е	No	No; Known habitat types are not present within the Project area	-
Running buffalo clover	Trifolium stoloniferum	Mesic habitats with partial sunlight including woodlands and mowed lawns	E, FE	No	No; Known habitat types are not present within the Project area	-
Primrose-leaved violet	Viola primulifolia	Moist, open situations, usually in sandy soil; Meadows, edges of ponds, streams, marshes, and swamps	E	No	No; Known habitat types are not present within the Project area	-
Bluehearts	Buchnera americana	Full sun in well-drained, often rocky, openings and woodlands; prairies, pastures, roadbanks; at times on severely eroded slopes	Т	No	No; Known habitat types are not present within the Project area	-
Bartley's Reed Grass	Calamagrostis porteri ssp. insperata	Dry upland areas in sun or partial shade; <i>Jackson County</i> population is under a powerline	Т	Yes	Unknown	-
Bush's sedge	Carex bushii	Moist prairies, fields, and meadows in full sun	Т	No	No; Known habitat types are not present within the Project area	-
Flattened sedge	Carex companata	Dry, open woods with neutral to acidic soils	Т	No	No; Known habitat types are not present within the Project area	-
Short-fringed sedge	Carex crinita var. brevicrinis	Swamp woods, seeps in woods, and along streams	Т	No	No; Known habitat types are not present within the Project area	-



Common Name	Scientific Name	Habitat Type	Listing Status <sup>2</sup>	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates
Plants (Cont.)						
Reznicek's sedge	Carex reznicekii	Dry woods on sandy soils	Т	No	No; Known habitat types are not present within the Project area	-
Lindheimer's panic grass	Dichanthelium lindheimeri	Open, moist, gravelly, often calcareous shores	Т	No	No; Known habitat types are not present within the Project area	-
Slender spike-rush	Eleocharis tenuis	Moist soils in xeric limestone prairies; Wet meadows, shores of ponds, ditches, and disturbed, moist habitats	Т	No	No; Known habitat types are not present within the Project area	-
White thoroughwort	Eupatorium album	A variety of well-drained, open areas on acidic soils	Т	No	No; Known habitat types are not present within the Project area	-
Round-fruited hedge-hyssop	Gratiola virginiana	Wet places: stream margins, pools, ditches, swamps; generally in shade or semi shade	Т	No	No; Known habitat types are not present within the Project area	
Ashy sunflower	Helianthus mollis	A variety of well-drained, sunny openings; Dry prairies, railroad embankments, roadsides, wood borders, and clearings; Usually in neutral substrates	Т	No	No; Known habitat types are not present within the Project area	-
Inland rush	Juncus interior	Moist to dry, open to semi-open situations; Often in sandy soil; Roadsides, prairies, meadows, fallow fields, clearings, and upland woods	Т	No	No; Known habitat types are not present within the Project area	-
Potato-dandelion	Krigia dandelion	Open oak woods and prairies, usually in moist sandy soils	Т	No	No; Known habitat types are not present within the Project area	-
Thyme-leaved pinweed	Lechea minor	Usually in full sun in dry, sandy woods, clearings, and roadside banks	Т	No	No; Known habitat types are not present within the Project area	-
Downy white beard-tongue	Penstemon pallidus	Fields, roadsides, and open woods	Т	No	No; Known habitat types are not present within the Project area	-



Common Name	Scientific Name	Habitat Type	Listing Status <sup>2</sup>	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates
Plants (Cont.)						
Carolina leaf-flower	Phyllanthus caroliniensis	A variety of moist, open to semi- open situations, usually in sandy soil; Low woods, meadows, fields, and gravelly banks	Т	No	No; Known habitat types are not present within the Project area	-
Pink milkwort	Polygala incarnata	Open to semi-open situations in dry, often sandy soil; Open upland woods, wood borders, prairies, and old fields	Т	No	No; Known habitat types are not present within the Project area	-
Tennessee pondweed	Potamogeton tennesseensis	Still or flowing water	Т	No	No; Known habitat types are not present within the Project area	-
Spanish oak	Quercus falcata	Usually in dry upland woods, less frequently in alluvial woods	Т	No	No; Known habitat types are not present within the Project area	-
Chalky ramalina	Ramalina pollinaria	Rock and bark in sheltered areas; Recent Ohio collections have all been from sandstone, either cliff face or boulders below a cliff; Prefers light shade	Т	No	No; Known habitat types are not present within the Project area	-
Low spearwort	Ranunculus pusillus	Low wet ground, swamps, and shallow pools	Т	No	No; Known habitat types are not present within the Project area	-
Great rhododendron	Rhododendron maximum	Moist, cool, acidic, well-drained soils; Partial shade	Т	No	No; Known habitat types are not present within the Project area	-
Narrow-leaved aster	Sericocarpus linifolius	Dry, open to semi-open situations; Upland woods, thickets, and clearings	Т	No	No; Known habitat types are not present within the Project area	-
Sweet goldenrod	Solidago odora	Dry woods and roadsides	Т	No	No; Known habitat types are not present within the Project area	-
Prairie wedge grass	Sphenopholis obtusata var. obtusata	Very generalized; Moist to dry soil of open woods, prairies, old fields, and fen meadows	Т	No	No; Known habitat types are not present within the Project area	-
Large marsh St. John's-wort	Triadenum tubulosum	Swamp woods, buttonbush swamps, thickets, and streambanks	Т	No	No; Known habitat types are not present within the Project area	-



Common Name	Scientific Name	Habitat Type	Listing Status <sup>2</sup>	Habitat Type Present Within the Project Area?	Impacts to Habitat/Species Anticipated?	Restricted Construction Dates
Plants (Cont.)						
Walter's St. John's-wort	Triadenum walteri	Swamp woods, buttonbush swamps, thickets, and streambanks	Т	No	No; Known habitat types are not present within the Project area	-
Reptiles						
Timber rattlesnake <sup>1</sup>	Crotalus horridus	Wooded areas	E, SC	Yes	No; Per the ODNR response, this Project is not likely to impact this species	-
Kirtland's snake <sup>1</sup>	Clonophis kirtlandii	Wet meadows or fields	Т	Yes	No; Per the ODNR response, this Project is not likely to impact this species	-

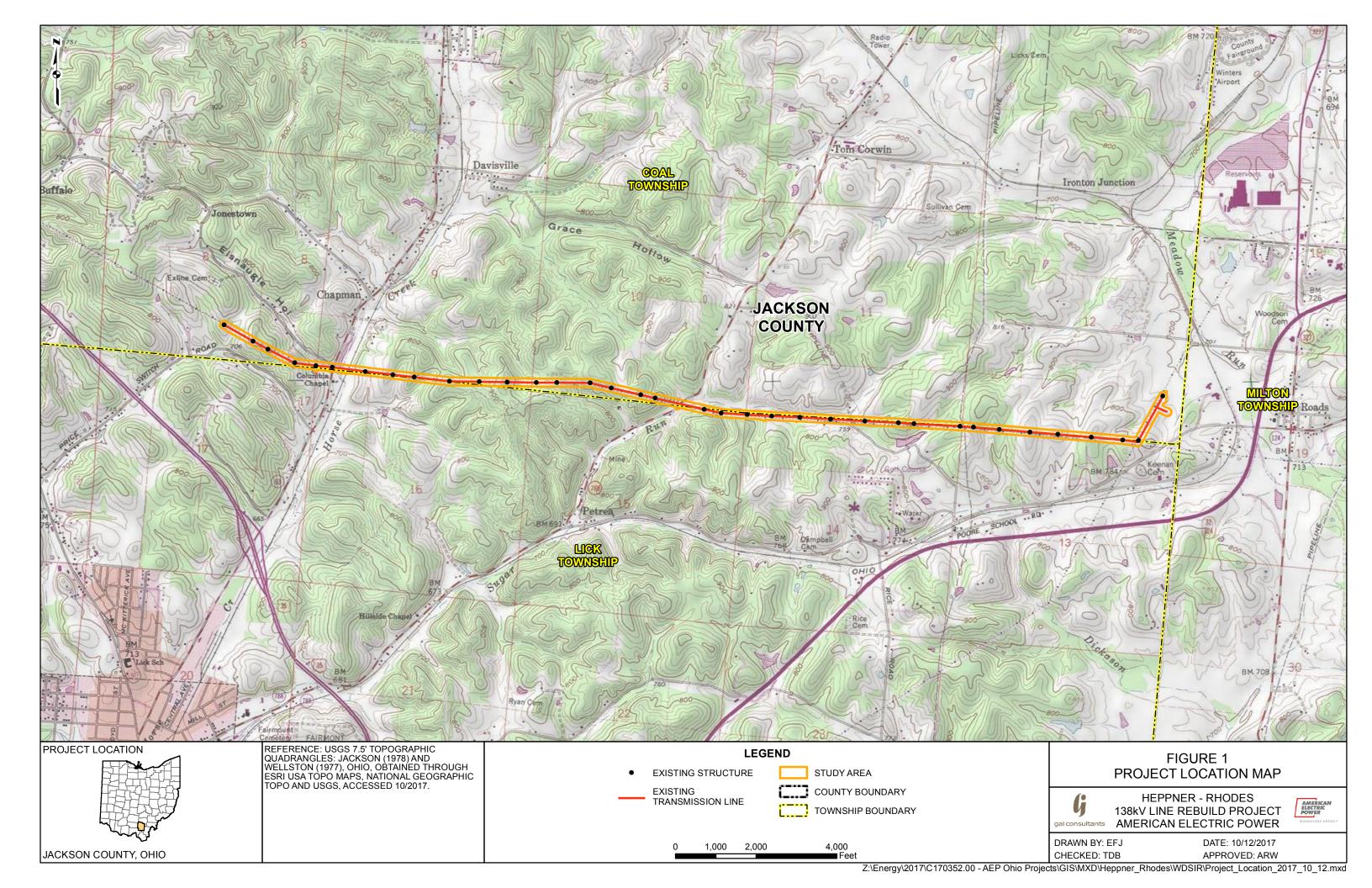
#### Notes:

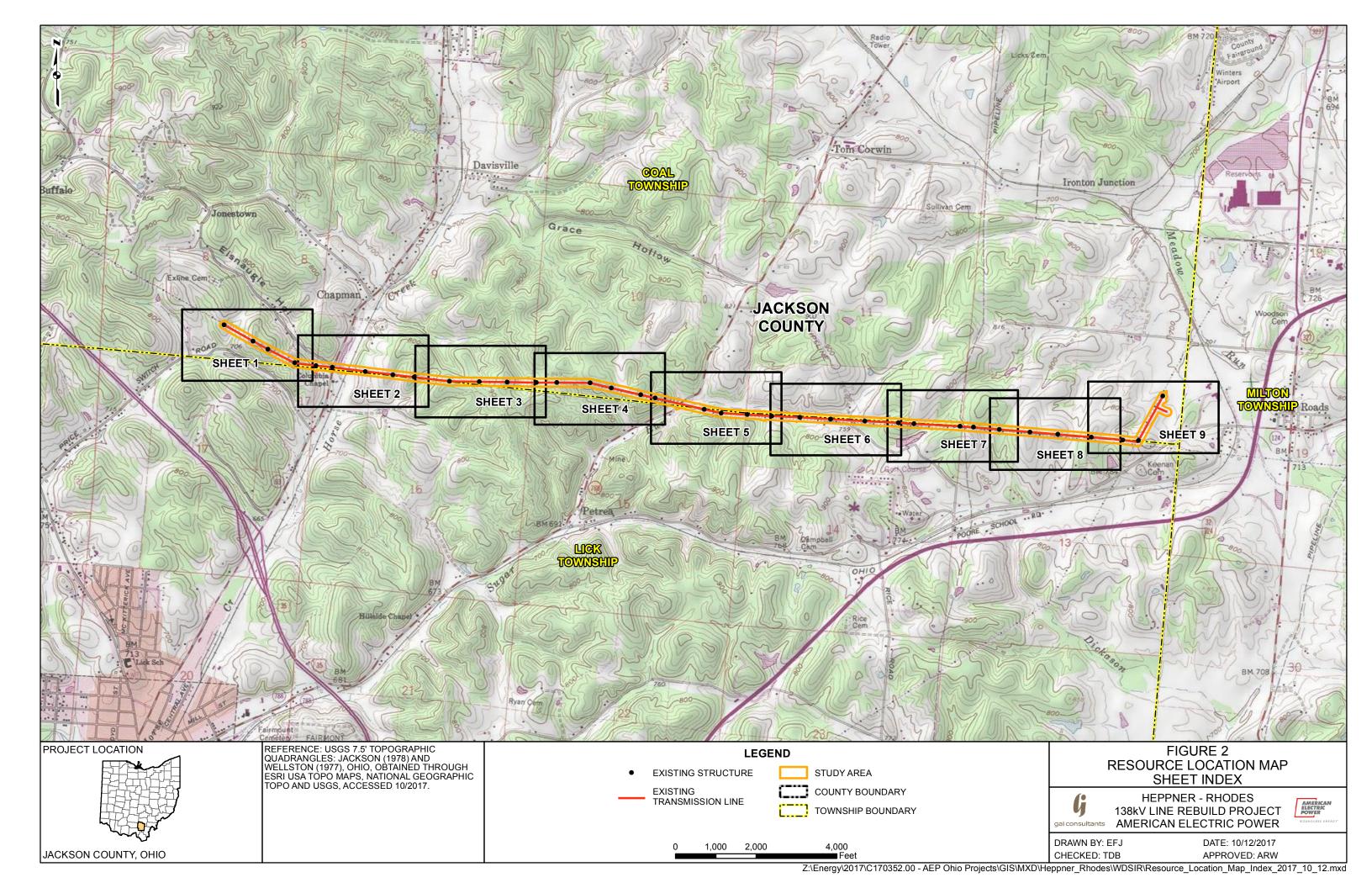
- Results are tentatively based upon the State Listed Species list(s) for Jackson County and will be updated once the ODNR response is received.
- E = state endangered; T = state threatened; P = state potentially threatened; SC = state species of concern; FE = federal endangered; FT = federal threatened; FSC = federal species of concern; FC = federal candidate.

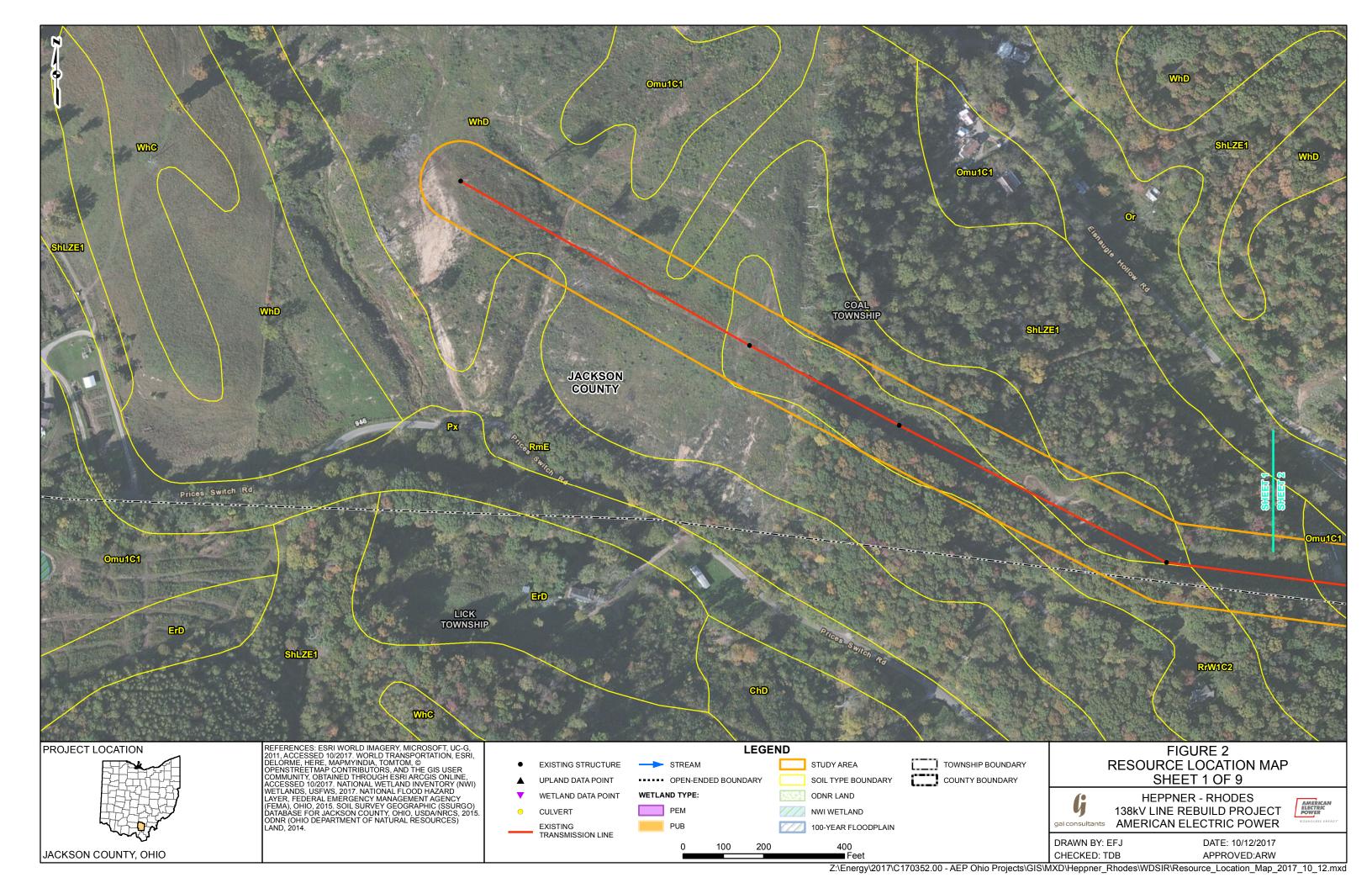


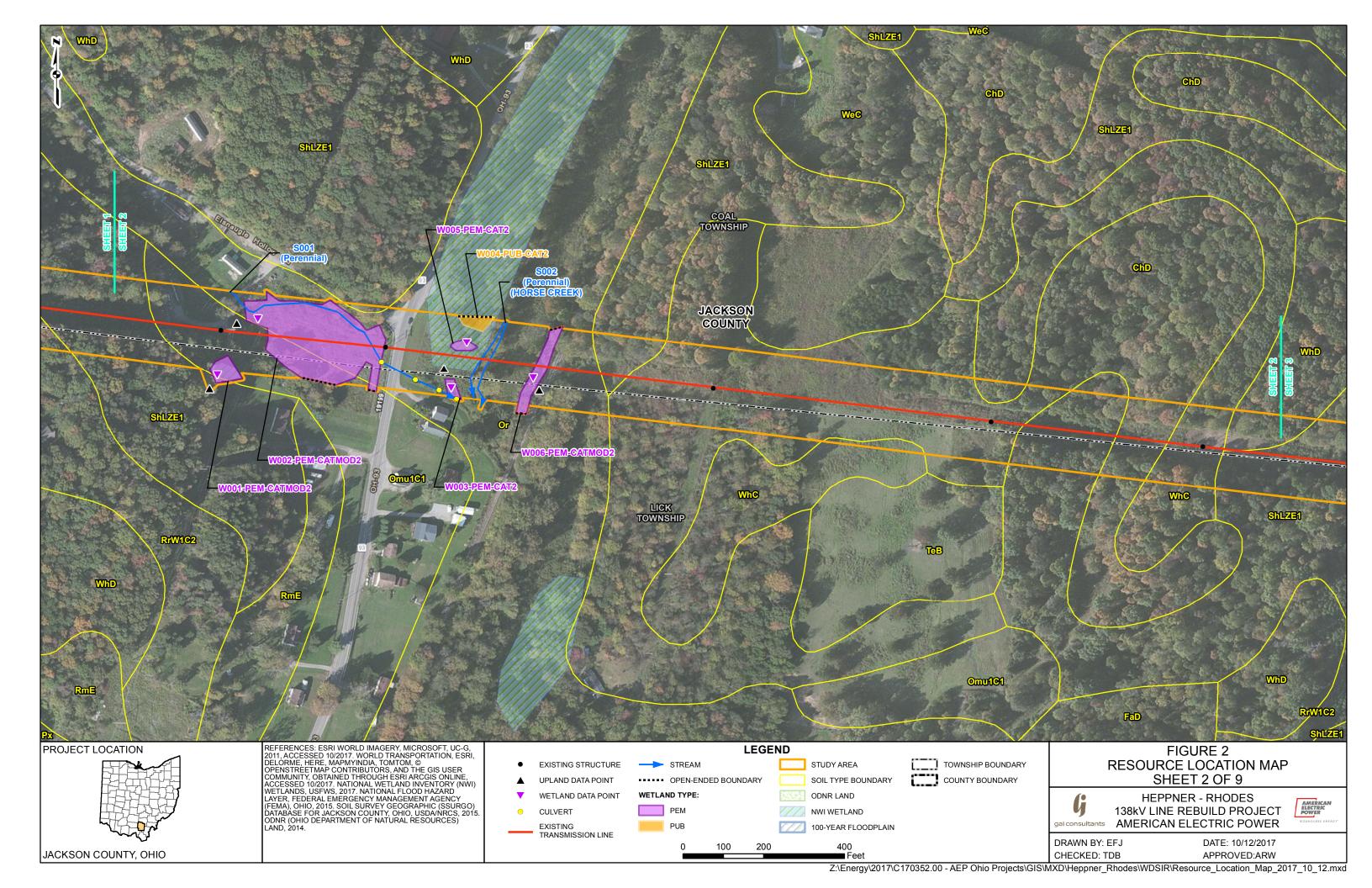
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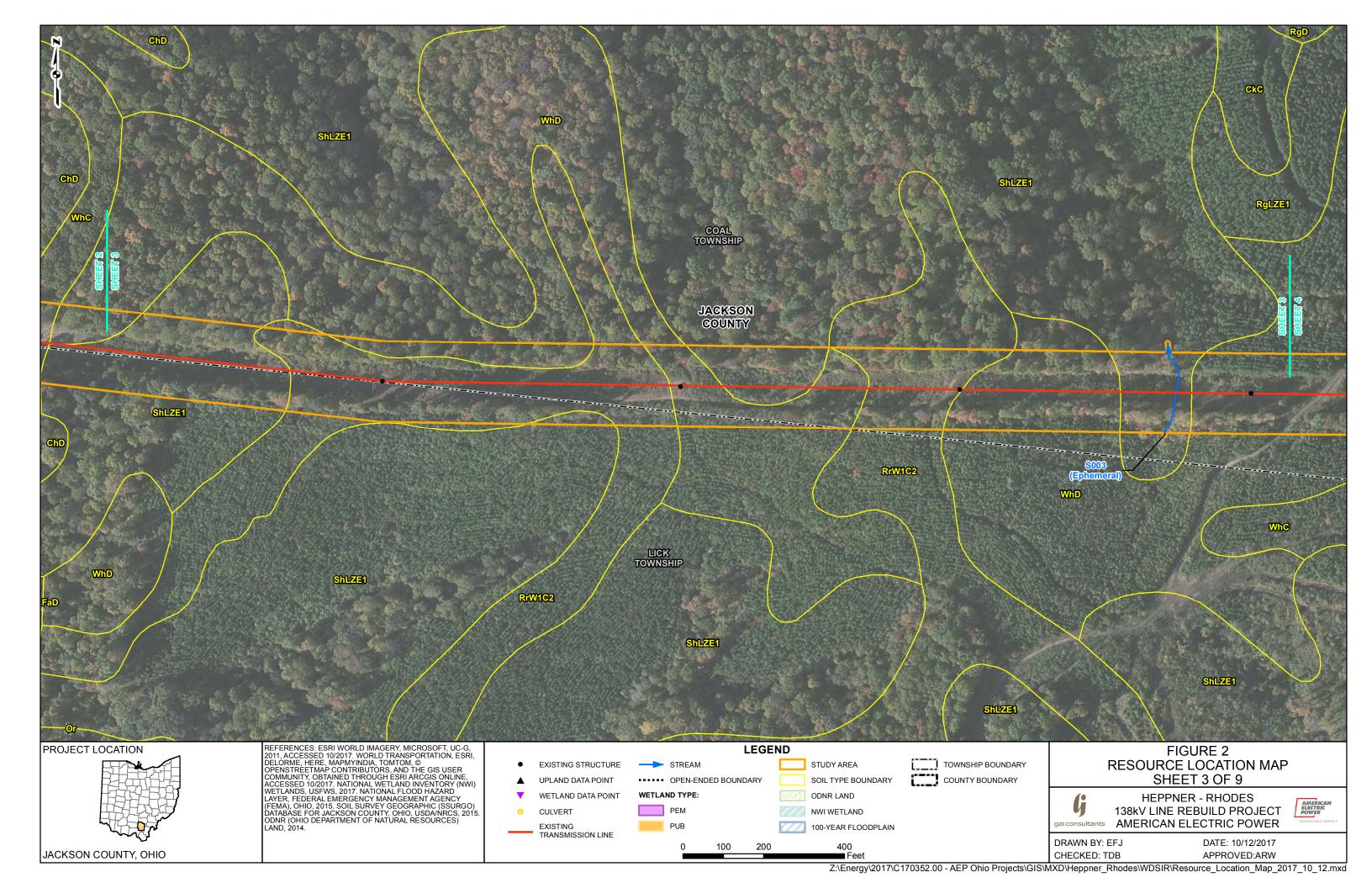


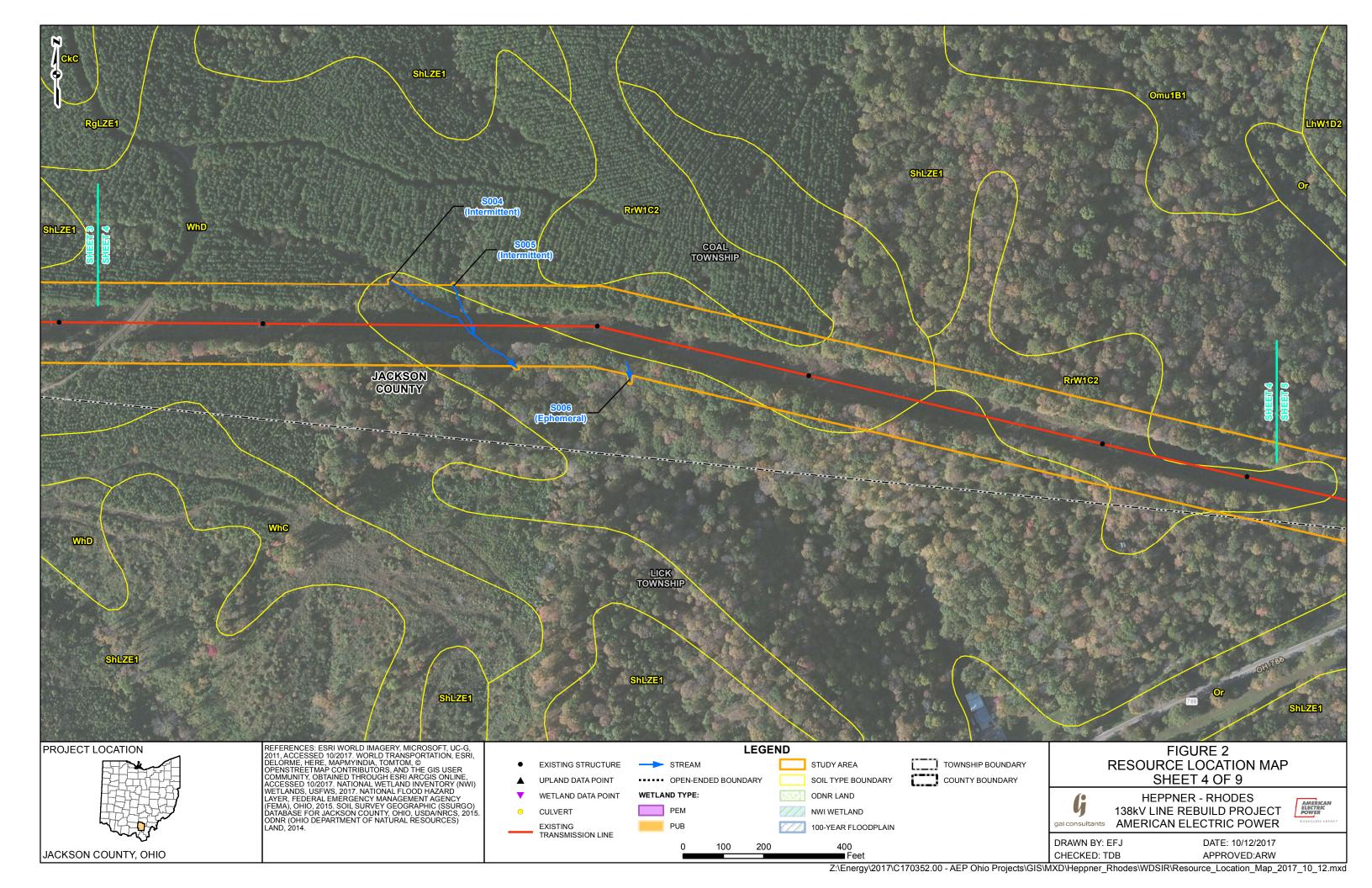


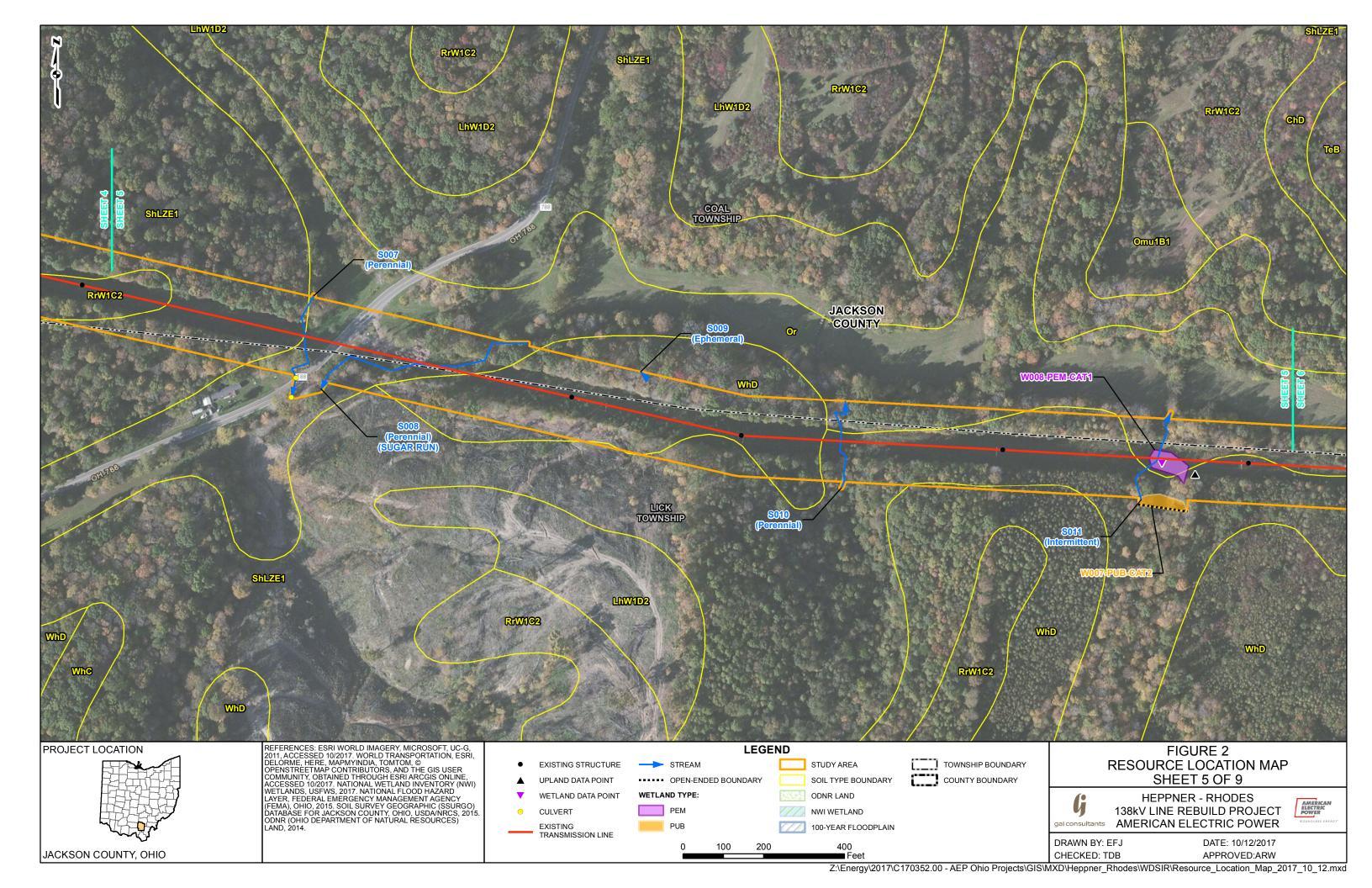


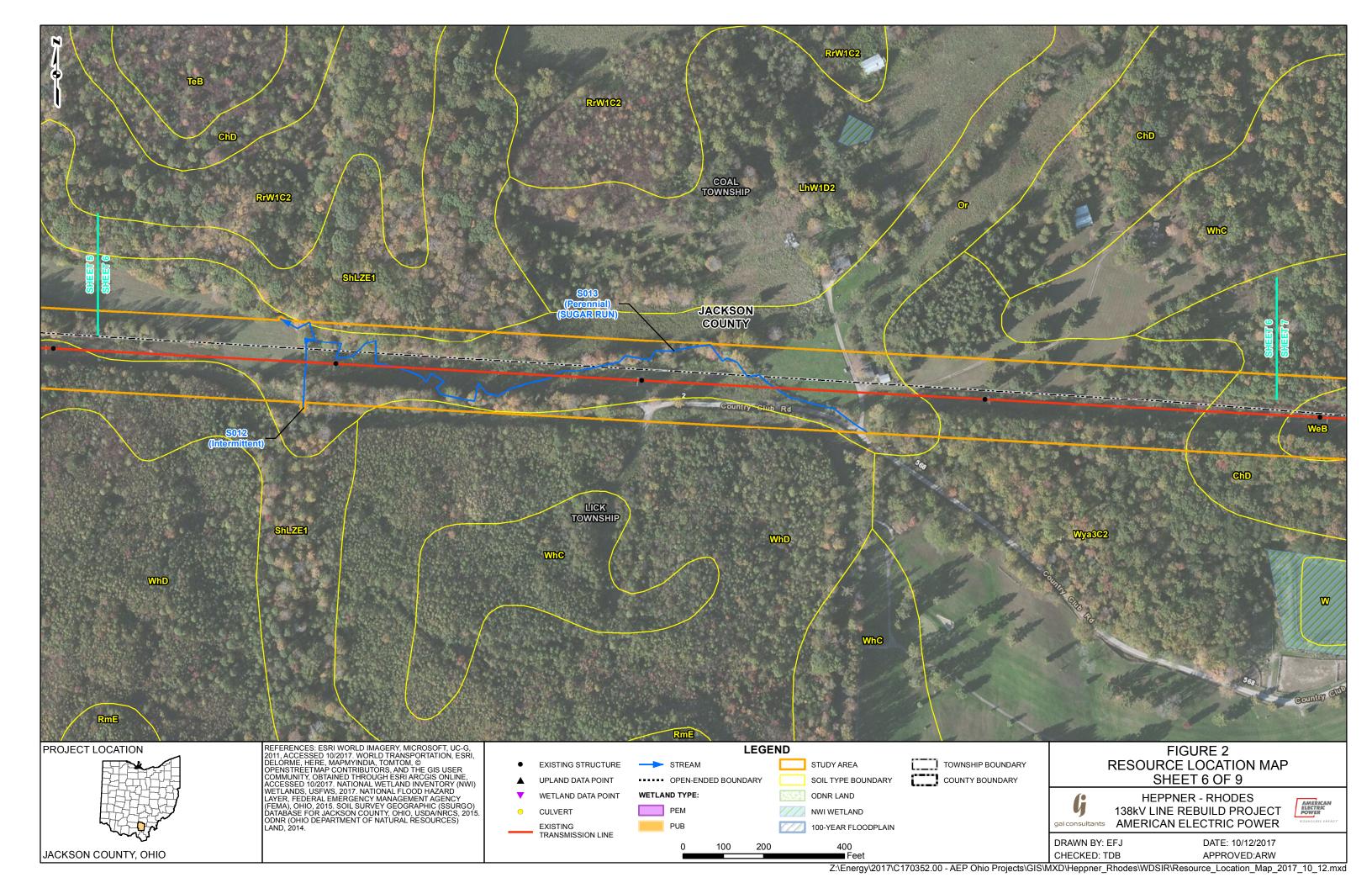


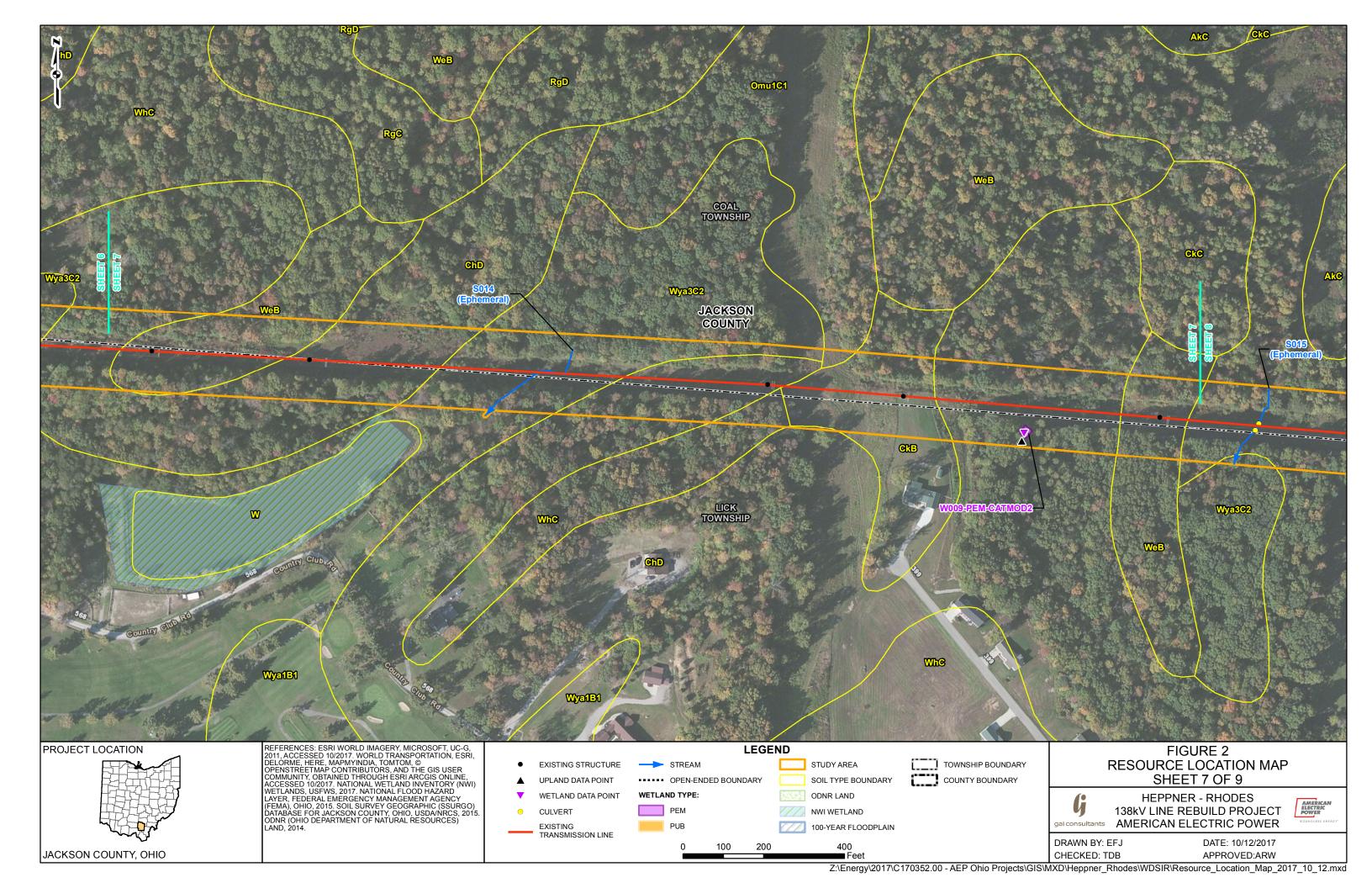


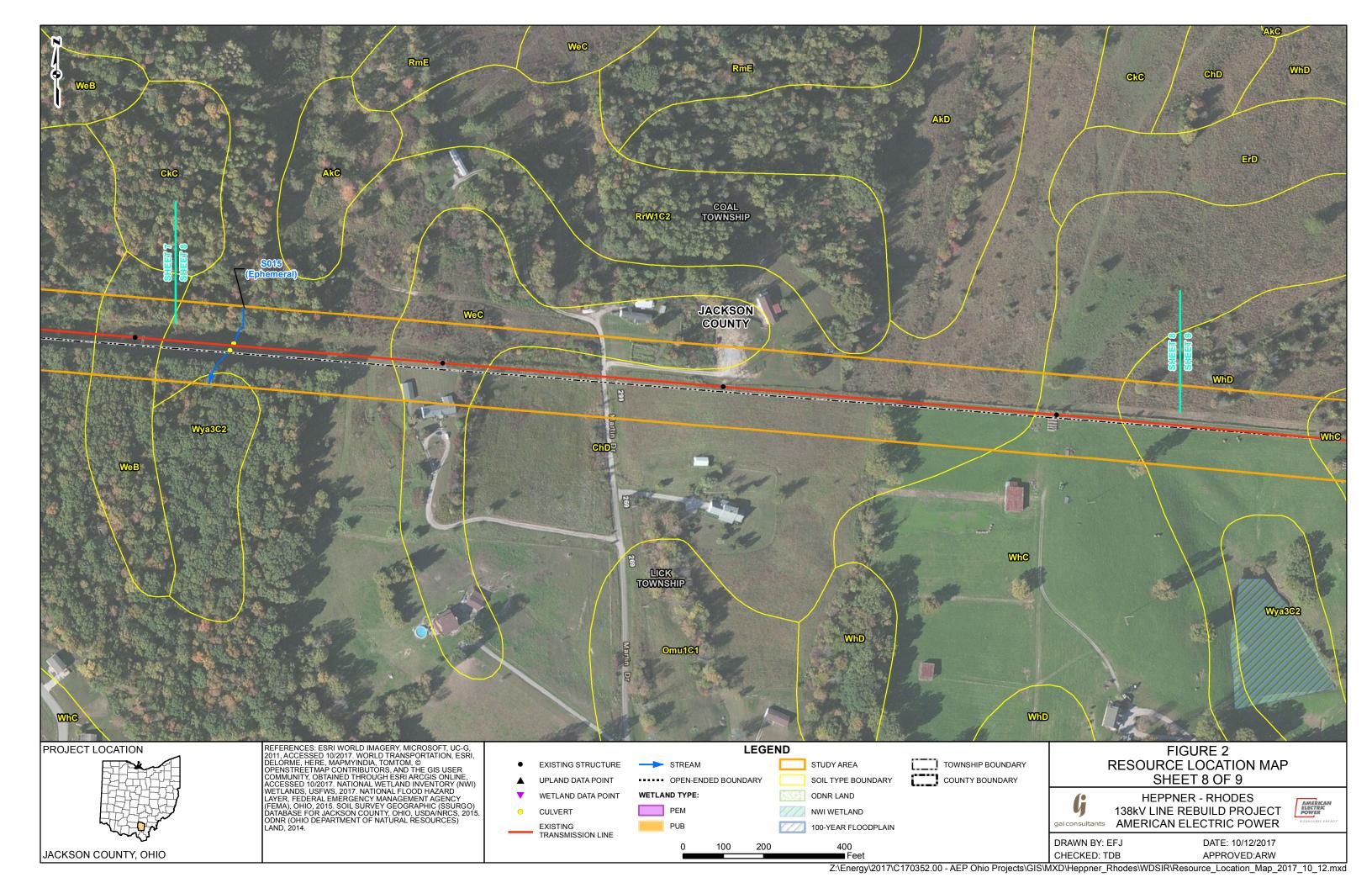


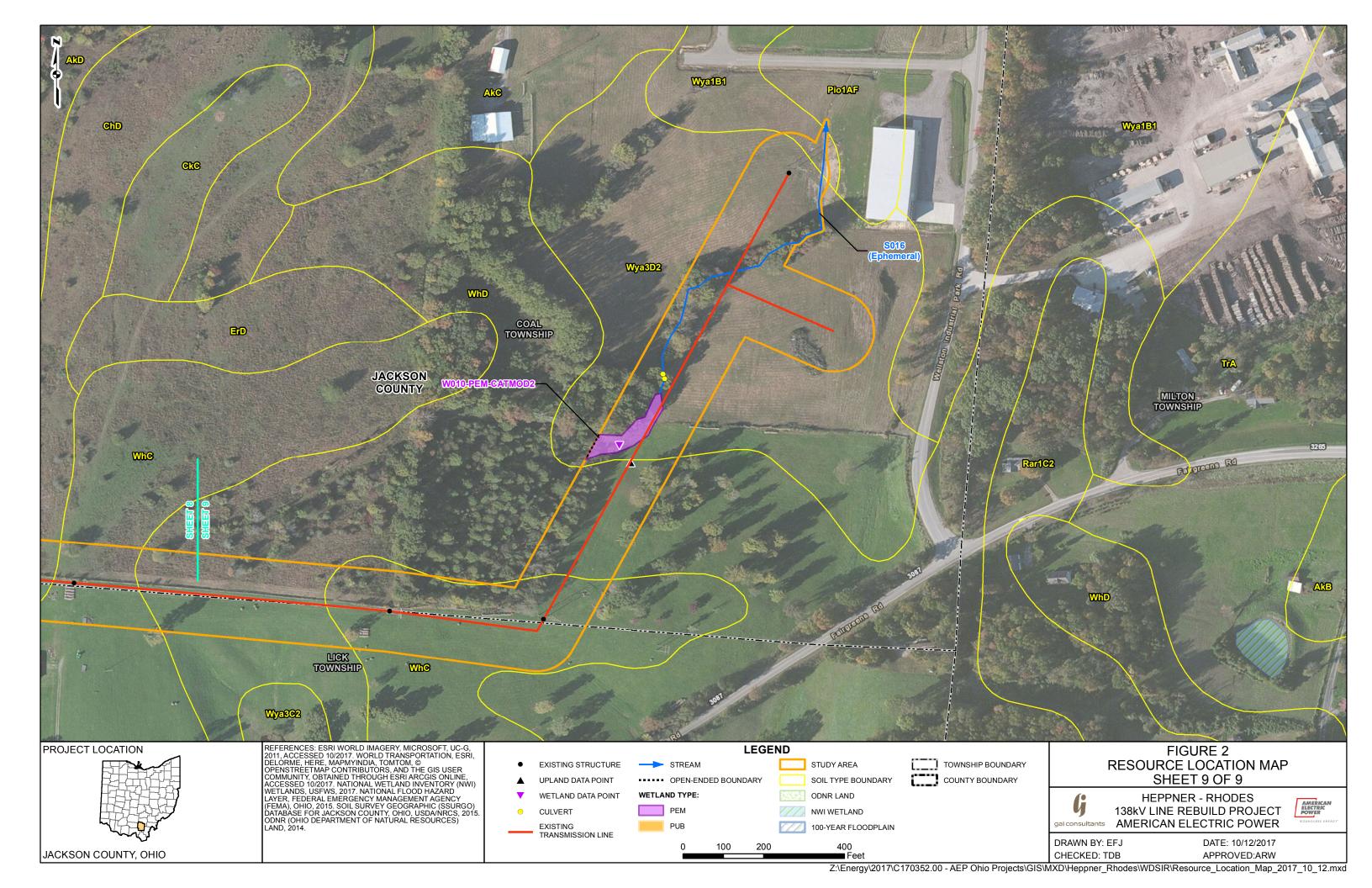


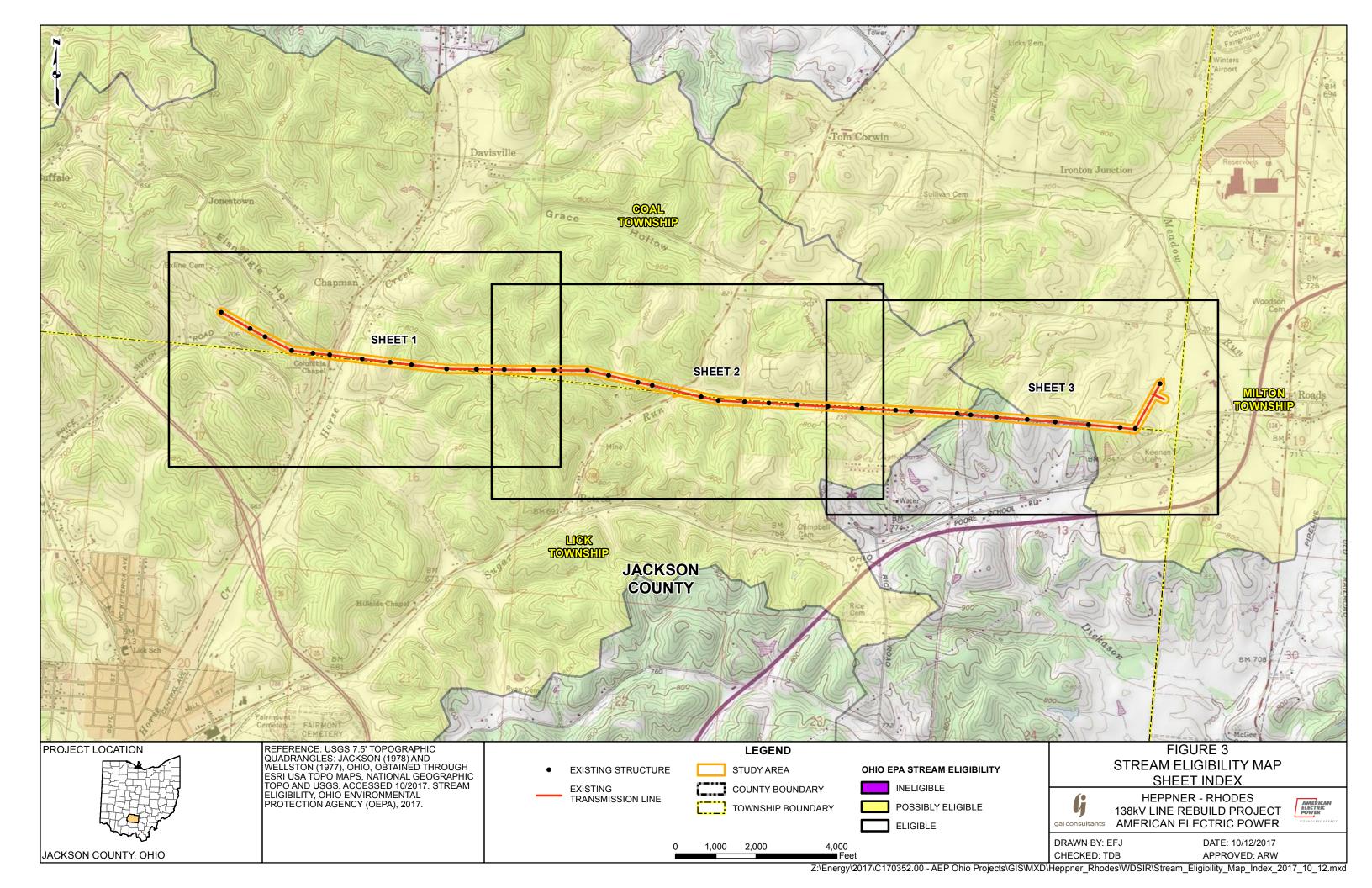


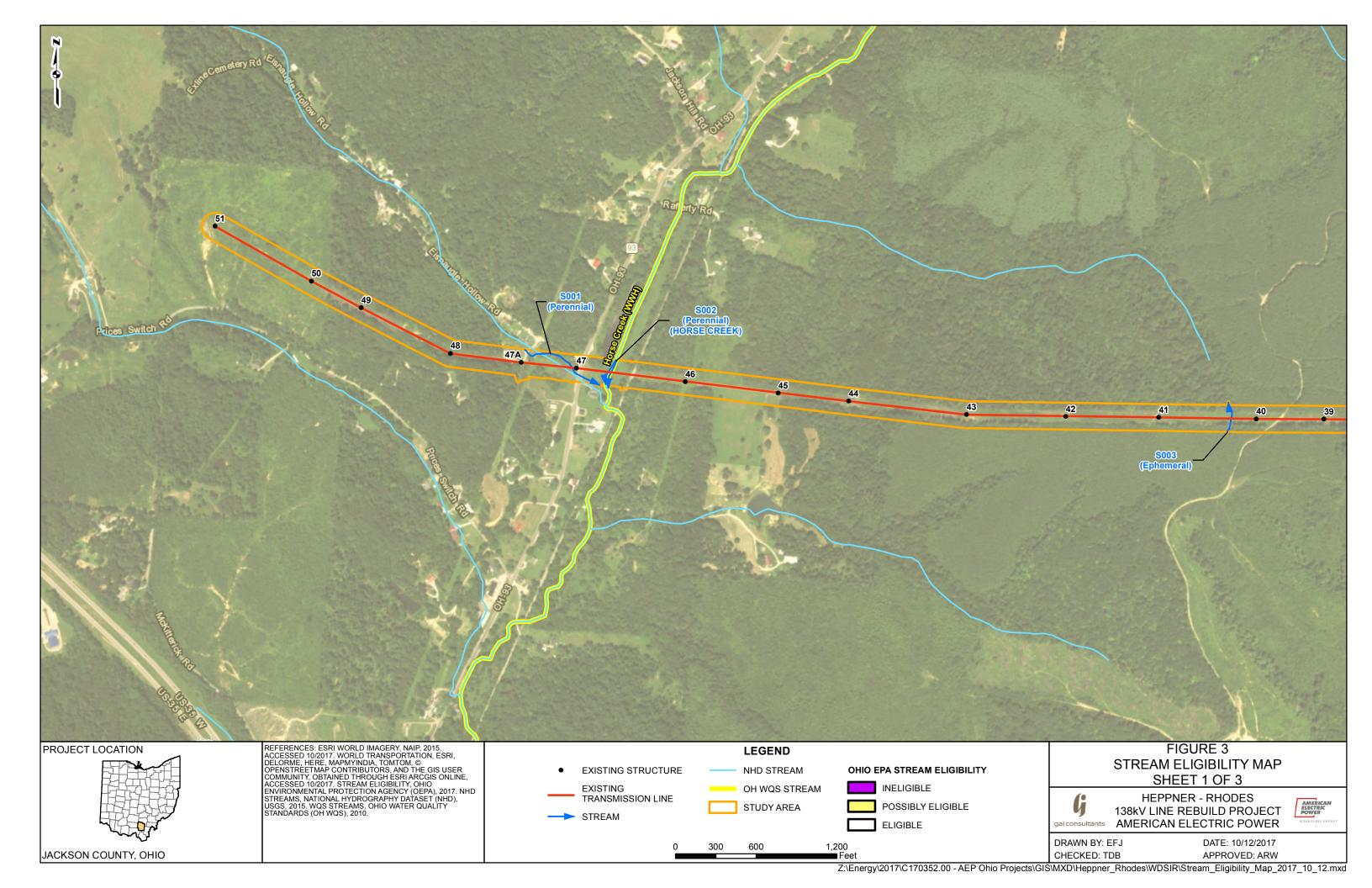


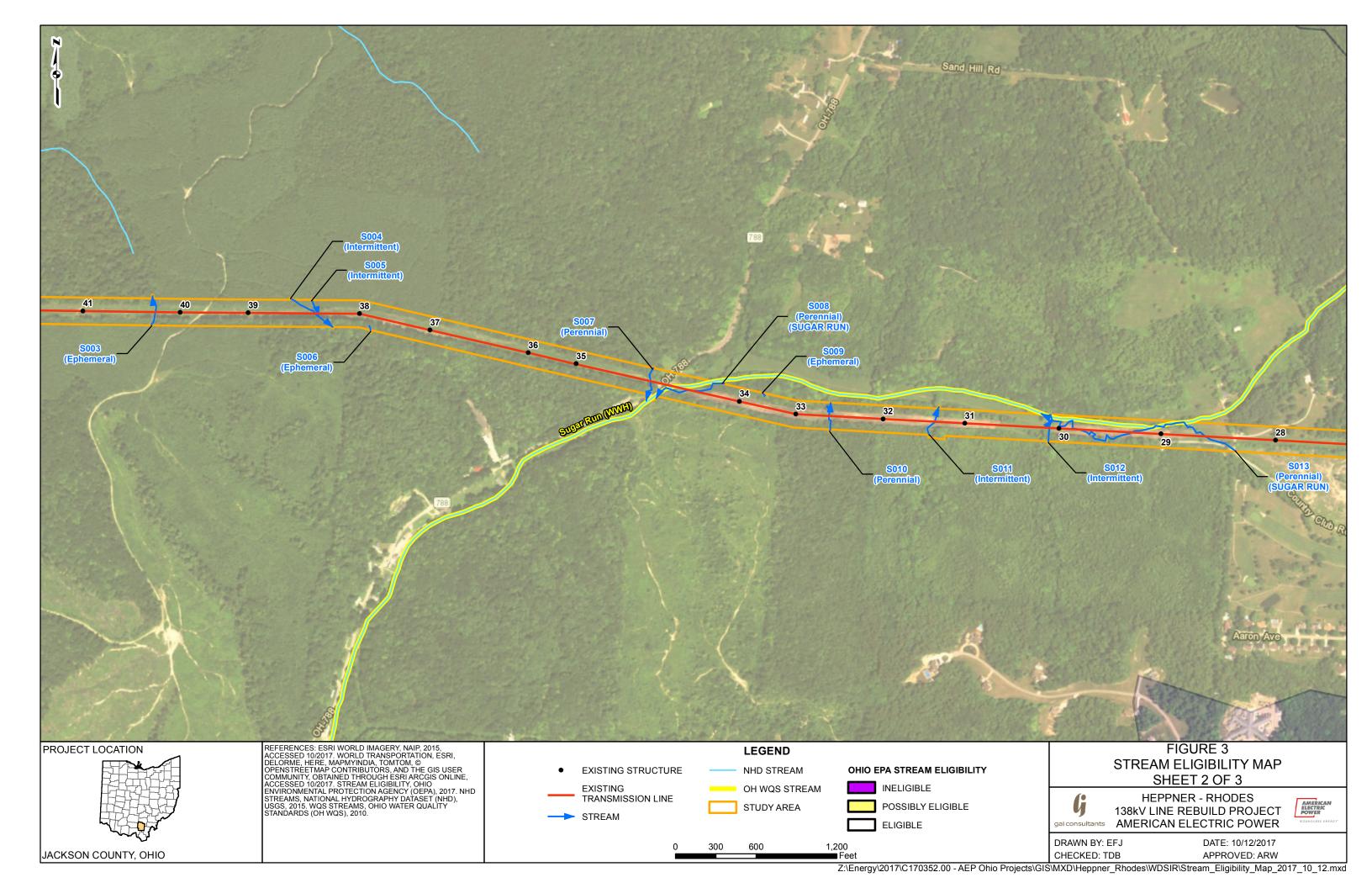


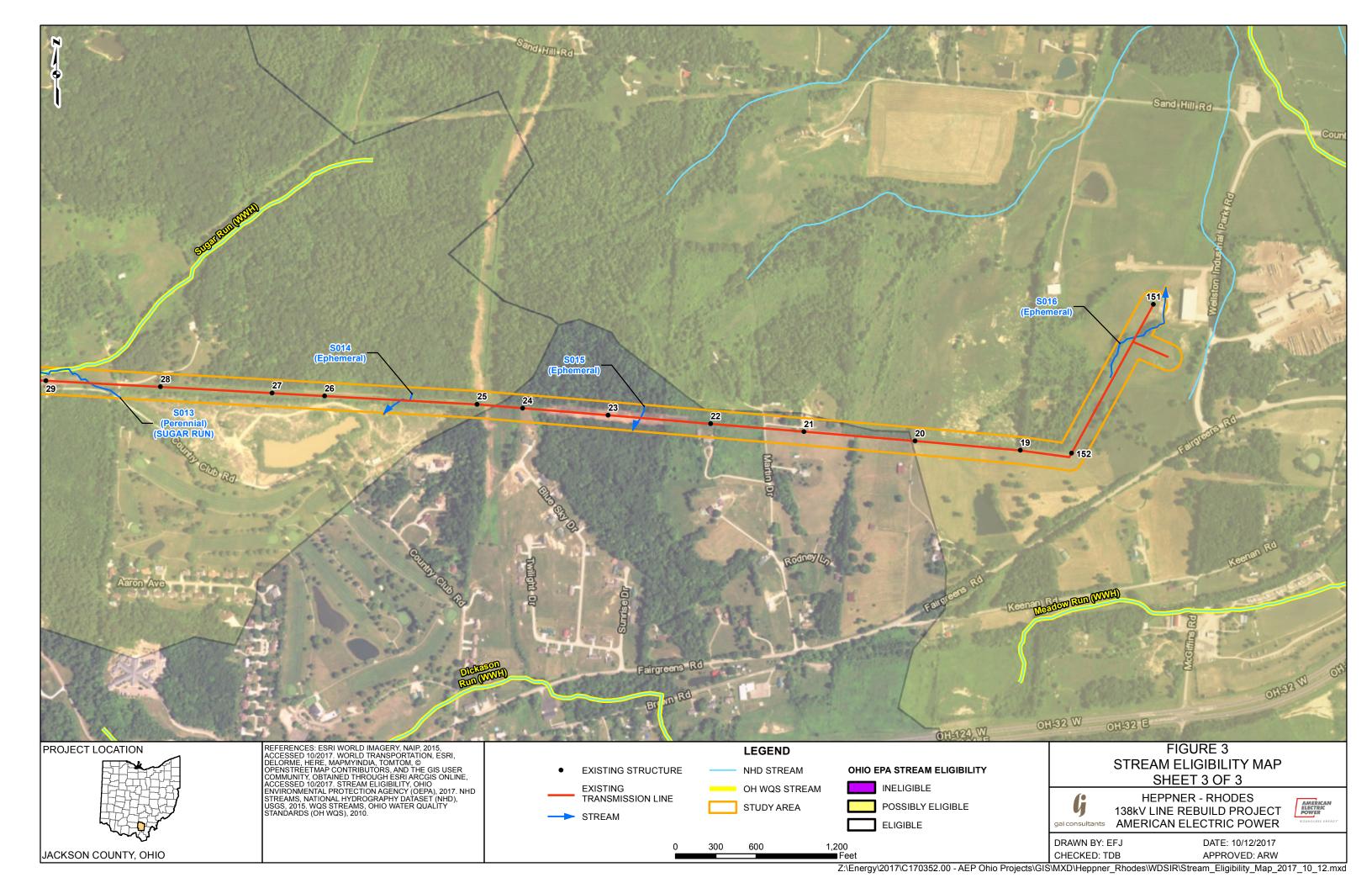


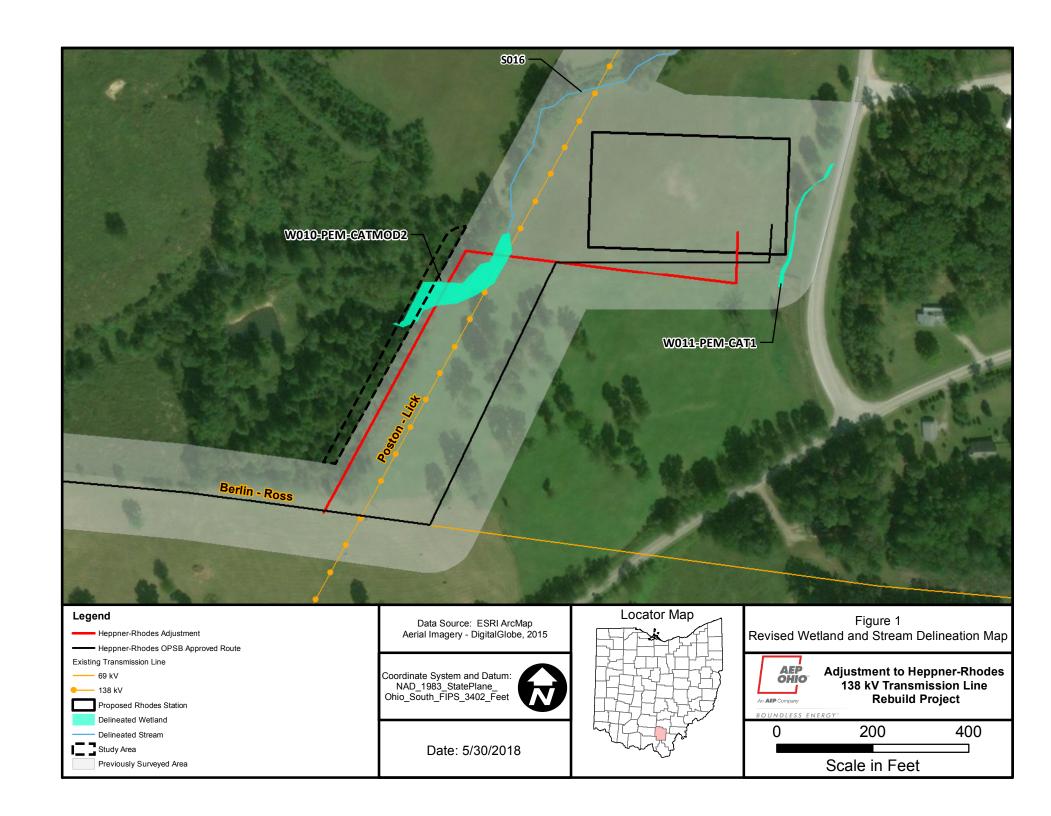














Photograph 1. Wetland W001-PEM-CATMOD2, Facing East



Photograph 2. Wetland W001-PEM-CATMOD2, Facing West





Photograph 3. Wetland W002-PEM-CATMOD2, Facing South



Photograph 4. Wetland W002-PEM-CATMOD2, Facing East





Photograph 5. Wetland W003-PEM-CAT2, Facing South



Photograph 6. Wetland W003-PEM-CAT2, Facing North





Photograph 7. Wetland W004-PUB-CAT2, Facing North



Photograph 8. Wetland W004-PUB-CAT2, Facing South





Photograph 9. Wetland W005-PEM-CAT2, Facing East



Photograph 10. Wetland W005-PEM-CAT2, Facing West





Photograph 11. Wetland W006-PEM-CATMOD2, Facing North



Photograph 12. Wetland W006-PEM-CATMOD2, Facing East





Photograph 13. Wetland W007-PUB-CAT2, Facing South



Photograph 14. Wetland W007-PUB-CAT2, Facing West





Photograph 15. Wetland W008-PEM-CAT1, Facing East



Photograph 16. Wetland W008-PEM-CAT1, Facing West





Photograph 17. Wetland W009-PEM-CATMOD2, Facing North



Photograph 18. Wetland W009-PEM-CATMOD2, Facing South





Photograph 19. Wetland W010-PEM-CATMOD2, Facing North



Photograph 20. Wetland W010-PEM-CATMOD2, Facing South





Photograph 21. Stream S001, Upstream, Facing Northwest



Photograph 22. Stream S001, Downstream, Facing Southeast



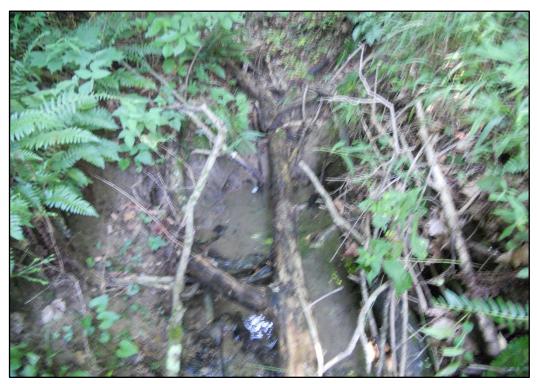


Photograph 23. Stream S002 (Horse Creek), Upstream, Facing North



Photograph 24. Stream S002 (Horse Creek), Downstream, Facing South





Photograph 25. Stream S003, Upstream, Facing South



Photograph 26. Stream S003, Downstream, Facing North





Photograph 27. Stream S004, Upstream, Facing North



Photograph 28. Stream S004, Downstream, Facing South





Photograph 29. Stream S005, Upstream, Facing North



Photograph 30. Stream S005, Downstream, Facing South





Photograph 31. Stream S006, Upstream, Facing North



Photograph 32. Stream S006, Downstream, Facing South





Photograph 33. Stream S007, Upstream, Facing North



Photograph 34. Stream S007, Downstream, Facing Southeast





Photograph 35. Stream S008 (Sugar Run), Upstream, Facing North



Photograph 36. Stream S008 (Sugar Run), Downstream, Facing South





Photograph 37. Stream S009, Upstream, Facing South



Photograph 38. Stream S009, Downstream, Facing North





Photograph 39. Stream S010, Upstream, Facing South



Photograph 40. Stream S010, Downstream, Facing North





Photograph 41. Stream S011, Upstream, Facing South



Photograph 42. Stream S011, Downstream, Facing North





Photograph 43. Stream S012, Upstream, Facing Southwest



Photograph 44. Stream S012, Downstream, Facing Northeast





Photograph 45. Stream S013 (Sugar Run), Upstream, Facing West



Photograph 46. Stream S013 (Sugar Run), Downstream, Facing West





Photograph 47. Stream S014, Upstream, Facing South



Photograph 48. Stream S014, Downstream, Facing North





Photograph 49. Stream S015, Upstream, Facing North



Photograph 50. Stream S015, Downstream, Facing South





**Photograph 51. Stream S016, Upstream, Facing Southwest** 



Photograph 52. Stream S016, Downstream, Facing Northeast





Photograph 53. Representative upland habitat, Facing East



Photograph 54. Representative upland habitat (existing right-of-way), Facing East





Photograph 55. Representative upland habitat, Facing West



Photograph 56. Representative upland habitat, Facing South



## **APPENDIX B**Wetland Determination Data Forms



Investigator(s):  Landform (hilslope, terrace, etc.):  Subregion (LRR or MLRA):  Soil Map Unit Name:  Are climatic/hydrologic conditions on the site typical for this time of year?  Are Vegetation  NO, Soil  NO, or Hydrology  Are "I	Sampling Date: 7/13/2017 ate: OH Sampling Point: W001 PEM  nge: 10 No Slope (%) 0/1 nge: NWI classification: PUB 6X  No (If no, explain in Remarks)  Normal Circumstances" present? Yes No eded, explain any answers in Remarks.)  ons, transects, important features, etc.  in a Wetland? Yes No No Model  OD 2.
Data point tanen in maintained trensmission i	NOW .
Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required, check all that apply)  Surface Water (A1)  High Water Table (A2)  Saturation (A3)  Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water Stained Leaves (B9)  Aquatic Fauna (B13)  Field Observations:  Surface Water Present?  Weter Stained Leaves (Pants (And Apply)  True Aquatic Plants (B14)  Hydrogen Sulfide Odor (C1)  Oxidized Rhizospheres on Living Roots (C3)  Presence of Reduced Iron (C4)  Recent Iron Reduction in Tilled Soils (C6)  Thin Muck Surface (C7)  Other (Explain in Remarks)  Field Observations:	Secondary Indicators (minimum of two required)  Surface Soil Cracks (B6)  Sparsely Vegetated Concave Surface (B8)  Drainage Patterns (B10)  Moss Trim Lines (B16)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)
Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Wetland (includes capillary fringe)	d Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:  Wetland hydrology Indicators are ALAS, Ca	3, D2, and D5.

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1011
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Soil Profile De	escription: (Describe to	the depth	needed to document t			ne absence	e or indicators.)	
Depth	Matrix	0/	0.1()	Redox Featu		12	Touton	B
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc²	Texture	Remarks
0-2	10 1K 414	100	10110 11/1	=		101	loam_	,
2-16	104K411	80_	104R414	20	<u> </u>	<u>PL</u>	Clayloam	- P
							T.	
	-				-		:=	
	Ă Total						A	
				-	-	-		
		F		-	-	-		
			-		+	*	× × × × × × × × × × × × × × × × × × ×	
	3	% <del>* =</del>		-	-	-		
	.(V	v <del></del>		, <u></u>				
ype: C=cond	centration, D=Depletion,	RM=Reduce	ed Matrix, MS=Masked	Sand Grains			<sup>2</sup> Location: PL=Pore	Lining, M=Matrix.
ydric Soil Inc	dicators:						Indicators for Probl	ematic Hydric Solls <sup>3</sup> :
Histosol (	A4\		Dark Surface (S	27)			2 cm Muck (A1	n) (MI DA 147)
	pedon (A2)		Polyvalue Belov	•	2) /MI DA 4.4	7 448\		edox (A16) (MLRA 147, 148)
			2					
_ Black His	. ,		Thin Dark Surfa		XA 147, 140,	1	-	lplain Soils (F19)
	Sulfide (A4)		Loamy Gleyed				(MLRA 136, 14	
	Layers (A5)		Depleted Matrix					ark Surface (TF12)
	k (A10) (LRR N)		Redox Dark Su				Other (Explain i	n Remarks)
	Below Dark Surface (A1	1)	Depleted Dark					
	k Surface (A12)	_	Redox Depress	, ,				
	ucky Mineral (S1) (LRR I	1,	Iron-Manganes			MLRA 136)		
MLRA 14	•		Umbric Surface			4.40\		
	eyed Matrix (S4)		Piedmont Flood					
Sandy Re			Red Parent Ma	teriai (F21) (N	/ILRA 127, 1	47)		
Stripped i	Matrix (S6)							
<sup>3</sup> Indicator	s of hydrophytic vegetati	on and wetla	and hydrology must be	present, unle	ss disturbed	or problema	tic.	
estrictive La	ayer (if observed):							
Type:						Hydr	ic	1
Depth (inc	ches):					Soil Pre	sent? Yes	No
oil Descript	ion Remarks:	١						
	Me	ets F	<b>ろ</b> ・					

WETLAND DETERMINATION DATA FORM - Eastern Mo	ountains and Piedmont Region
Project/Site: HCDOWY + UCK 38 City/County: )ACKS	(C) Sampling Date: 7/13/2017
Applicant/Owner:	State: OH Sampling Point: W001 -UP
Investigator(s): Section, Township,	
Landform (hilslope, terrace, etc.):	0
Subregion (LRR or MLRA): Lat: 39, 084 00813	Long: -82,102324409 Datum: NAD 83
Soil Map Unit Name: ShlzEI-Shcloctd-Latham association, Ste	CD NWI classification: NA
Are climatic/hydrologic conditions on the site typical for this time of year?	No (If no, explain in Remarks)
	Are "Normal Circumstances" present?  Yes  No
	If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sampling point loc	
/ Account of the property of t	actions, transporter, important routeres, etc.
Hydrophytic Vegetation Present? Yes No	/
Hydric Soil Present? Yes No Is the Sampled Area w	within a Wetland? Yes No
Wetland Hydrology Present? Yes No	
Remarks: Upland data point for woon	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
at the middle of the original Day	\. <i>I</i>
Data point taken in maintained transmission Ro	W 3
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 Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3) — Oxidized Rhizospheres on Living Roots (C3)	Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduced Iron (C4) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2)  Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
Drift Deposits (B3)  Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)  Shallow Aquitard (D3)
Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Addition and (5.6)	
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes No/_ Depth (inches): We	etland Hydrology Present? Yes No
(includes capillary fringe)	Mand Hydrology 1 1000M.
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Damanica	
Remarks: 1/2 lettand hydrobran is not accept	
Wetland hydrobayy is not present	

-UPL

Soil Profile De	scription: (Describe t	o the depth ne	eded to document th	ne indicator	or confirm th	e absence	e of indicators.)	
Depth	Matrix			Redox Featu				
(inches)	Color (moist) 10 YR 4 2	100	Color (moist)	% 	Type <sup>1</sup>	Loc <sup>2</sup>	SiHlodm	Remarks
·								
<sup>1</sup> Type: C=conce	entration, D=Depletion	, RM=Reduced	Matrix, MS=Masked S	Sand Grains			<sup>2</sup> Location: PL=Pore Li	ning, M=Matrix.
Hydric Soil Ind	icators:						Indicators for Probler	natic Hydric Soils³:
Stratified L 2 cm Muck Depleted B Thick Dark Sandy Muc MLRA 147 Sandy Gley Sandy Red Stripped M	edon (A2) c (A3) Sulfide (A4) ayers (A5) c (A10) (LRR N) delow Dark Surface (A: Surface (A12) cky Mineral (S1) (LRR ,148) yed Matrix (S4) lox (S5) atrix (S6) of hydrophytic vegetal	N,	Dark Surface (S Polyvalue Below Thin Dark Surfac Loamy Gleyed M Depleted Matrix Redox Dark Surfac Depleted Dark S Redox Depressic Iron-Manganese Umbric Surface Piedmont Floody Red Parent Mate	v Surface (Si ce (S9) (MLI Matrix (F2) (F3) face (F6) Surface (F7) ons (F8) Masses (F1 (F13) (MLR/ plain Soils (F	12) (LRR N, M A 136, 122) F19) (MLRA 14 MLRA 127, 147	LRA 136) 18) 7)	Piedmont Floodpl (MLRA 136, 147) Very Shallow Dar Other (Explain in	dox (A16) (MLRA 147, 148) lain Soils (F19) k Surface (TF12)
Type: _ Depth (inch	yer (if observed):					Hydr Soil Pre		No
Soil Description	on Remarks:	Soils a	re not pres	sent.				

WETLAND DETERMINATION DATA FORM - Easte	W -
Project/Site: Heponer to Khades city/County: Jd	Son Co Sampling Date: 7/17/2017
Applicant/Owner:	State: OH Sampling Point W002 (PEM)
	wnship, Range: Coal Tup
	ncave, convex, none): CONCOLO Slope (%) O
Subregion (LRR or MLRA): Lat: 39.0844.8152	Long: -82. 622 84211 Datum: NAD 83
Soil Map Unit Name: Or - Orriville Sitt Jam, Oto 31. trequently-	NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes $^{\circ}$ _  Are Vegetation $\bigcap$ , Soil $\bigcap$ , or Hydrology $\bigcap$	No (If no, explain in Remarks)  Are "Normal Circumstances" present?  Yes  No
Are Vegetation $\bigcap$ , Soil $\bigcap$ , or Hydrology $\bigcap$ naturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sampling po	
Hydrophytic Vegetation Present? Yes V	
	Area within a Wetland? Yes No
Wetland Hydrology Present? Yes No	
Data point taken in maintained transmiss	advocent to residential
Data point taken in maintained transmiss	ion kow and anjective to resolution
property.	
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 Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3)  Oxidized Rhizospheres on Living Roots (0)	
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2)  Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
D-10 D-10-11-1 (DO)	Caturation Visible on April Imagent (CO)
Drift Deposits (B3)  Thin Muck Surface (C7)  Other (Explain in Remarks)	Saturation Visible on Aerial Imagery (C9) Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Algal Mat or Crust (B4) Other (Explain in Remarks)	
Algal Mat or Crust (B4) Other (Explain in Remarks)	Stunted or Stressed Plants (D1)  Geomorphic Position (D2)
Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3)
Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Aquatic Fauna (B13)  Field Observations:	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Aquatic Fauna (B13)	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Aquatic Fauna (B13)  Field Observations:	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Algal Mat or Crust (B4) Other (Explain in Remarks)  Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13)  Field Observations: Surface Water Present? Yes No Depth (inches):	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)
Algal Mat or Crust (B4) Other (Explain in Remarks)  Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13)  Field Observations: Surface Water Present? Yes No Depth (inches):	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4)
Algal Mat or Crust (B4)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Aquatic Fauna (B13)  Field Observations:  Surface Water Present?  Water Table Present?  Yes No Depth (inches):  Saturation Present?  Yes No Depth (inches):	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): Ves No Depth (inches): O Vestartation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): 2" Water Table Present? Yes No Depth (inches): O Saturation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): 2" Water Table Present? Yes No Depth (inches): O Saturation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): Ves No Depth (inches): O Vestartation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): 2" Water Table Present? Yes No Depth (inches): O Saturation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): 2" Water Table Present? Yes No Depth (inches): O Saturation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): 2" Water Table Present? Yes No Depth (inches): O Saturation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
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Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): 2" Water Table Present? Yes No Depth (inches): O Saturation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): 2" Water Table Present? Yes No Depth (inches): O Saturation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): 2" Water Table Present? Yes No Depth (inches): O Saturation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): 2" Water Table Present? Yes No Depth (inches): O Saturation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): 2" Water Table Present? Yes No Depth (inches): O Saturation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): 2" Water Table Present? Yes No Depth (inches): O Saturation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No
Algal Mat or Crust (B4) Other (Explain in Remarks) Iron Deposits (B5) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Aquatic Fauna (B13) No Depth (inches): 2" Water Table Present? Yes No Depth (inches): O Saturation Present? Yes No Depth (inches): O (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5)  Wetland Hydrology Present?  Yes No

Tree Stratum	(Plot size: 30	Absolute ) % Cover	Dominant Indicator Species? Status	Dominance Test worksheet:
1. NMC	(FIOI SIZE	) _/6 COVE	species: Status	Number of Dominant Species That Are OBL, FACW, or FAC:
2			n 47 - 12-3	8.
				Total Number of Dominant Species Across All Strata: (E
3				ACCUSE ALI SITALO.
4				Percent of Dominant Species That Are
5				OBL, FACW, or FAC:
6. 7.				Prevalence Index worksheet:
··-		0	= Total Cover	Total % Cover of: Multiply by:
	101			OBL species x 1 =
Sapling/Shrub Stratum	(Plot size: 15'	)		FACW species x 2 =
1. none			<del></del>	FACU species x 3 =
2. 3.			4 8	UPL species x 5 =
3. 4.				Column Totals: (A)
5				
6				Prevalence Index = B/A =
7				Hydrophytic Vegetation Indicators:
8 9			24	1 - Rapid Test for Hydrophytic Vegetation
10				2 - Dominance Test is >50%
			= Total Cover	3 - Prevalence Index is ≤3.0 <sup>1</sup>
	(Plot size: 5	Q.		4 - Morphological Adaptations <sup>1</sup> (Provide supporti
1 Onoclea sens	A PUIS	ao	V FOCK	data in Remarks or on a separate sheet)  Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. Typha xalauc	d	10	N Obl	(2,4,5)
3. Impatient cap	rensis	15	Fach	Indicators of hydric soil and wetland hydrology must
4. Junicus ettus	US	10	N Fach	be present, unless disturbed or problematic.
6. Mimulus al	atic	- 15	7 881	Definitions of Vegetation Strata:
6. Mimulus ali	alus		N DOL	Tree Meady plants evaluding vines 2 in (7.6 cm) or more
8.			9	Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more diameter.
9.				*
10				
11				Sapling/Shrub- Woody plants, excluding vines, less than 3 DBH and greater than or equal to 3.28 ft (1 m) tall.
12		75	= Total Cover	DBH and greater than or equal to 3.26 it (1 iii) tail.
4				
	201			Herb - All herbaceous (non-woody) plants, regardless
Voody Vine Stratum	(Plot size: 30)	)		of size, and woody plants less than 3.28 ft tall.
1. None				
2				Woody Vines - All woody vines greater than 3.28 ft in
4				height.
5	2/			
6				
			= Total Cover	
				Hydrophytic
				Vegetation
				Present? Yes No
Jametetian Remarks: (Include pho	to numbers here or on a sono	rata abaat\		ļ
/egetation Remarks: (Include pho	·		1	1 1 1 1 1 1
Westland year	5 dominant -	passes 4	ne domina	nce test and rapid test.
TO COUNTY VO)	w wormingto	1 - 3 - 3 (	500.7111101	
O				
iV				

Soil Profile De	escription: (Describe to	the depth n	eeded to document th	e indicator	or confirm t	he absence	of indicators.	)		
Depth	Matrix			Redox Featur	res					
(inches)	Color (mpist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Rer	marks	
0-3	104R412	80	7.5 YR414	20	<u> </u>	PL	loam	-		
3-16	101/R4/1	75	7.54R414	25		PL	Clay 100	lm		
	1. 33									
-		,		)	-	-			<del></del>	
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		-		<del></del>			<del>;</del>	-		
,		/								
<sup>1</sup> Type: C=conc	entration, D=Depletion,	RM=Reduced	Matrix, MS=Masked S	Sand Grains.			<sup>2</sup> Location: P	L=Pore Lining, M=M	atrix.	
Hydric Soil Ind	icators:						Indicators fo	or Problematic Hydi	ric Soils <sup>3</sup> :	
.,								-		
Histosol (A	•		Dark Surface (S7					uck (A10) (MLRA 14		
	edon (A2)		Polyvalue Below			', 148)		rairie Redox (A16) (		
Black Histi			Thin Dark Surfac		A 147, 148)			nt Floodplain Soils (I	-19)	
	Sulfide (A4)		Loamy Gleyed M					136, 147)	(TE40)	
_	ayers (A5) (A10) (LRR N)		Depleted Matrix					iallow Dark Surface ( Explain in Remarks)	(1712)	
-	Below Dark Surface (A1	1)	Redox Dark Surf Depleted Dark S				— Other (E	-xpiairi iii rtemarks)		
	: Surface (A12)	')	Redox Depression							
	cky Mineral (S1) (LRR N	,	Iron-Manganese		2) (LRR N, M	ILRA 136)				
MLRA 147	,148)		Umbric Surface (	F13) (MLRA	136, 122)					
Sandy Gley	yed Matrix (S4)		Piedmont Floodp	lain Soils (F	19) <b>(MLRA 1</b>	48)				
Sandy Red			Red Parent Mate	rial (F21) (M	LRA 127, 14	47)				
Stripped M	atrix (S6)									
<sup>3</sup> Indicators	of hydrophytic vegetation	n and wetlan	d hydrology must be pr	esent, unles	s disturbed o	or problemat	ic.			
Restrictive Lay	yer (if observed):									
Туре:						Hydri	c			
Depth (inch	ies).					Soil Pres		Yes V	No	
Bepair (inter						OOM 1 TOO				
Soil Description	n Remarks:									
				1						
	Mects F3									
3										
								2.	23	

WETI AND DETERMINATION DATA FORM - Eastern	Mountains and Piedmont Region
Project/Site: Heppiner to Rhods City/County: ACC	Sampling Date: 7/17/2017
Applicant/Owner:	State: OH Sampling Poin W002 - UPL
14.	ship, Range: Cal Twp.
Ol a L	ave, convex, none): NOW Slope (%)
Subregion (LRR or MLRA): Lat: 39. 08445276	Long: -82, 6230276 Datum: NAD 83
Soil Map Unit Name: OmulCI-Omulag Sittleam, 10to 12%, Slopes	NWI classification:
Are climatic/hydrologic conditions on the site typical for this time of year?	No (If no, explain in Remarks)
Are Vegetation NO, Soil NO, or Hydrology NO significantly disturbed?	Are "Normal Circumstances" present? Yes / No
Are Vegetation $\overline{\Omega}$ , Soil $\overline{\Omega}$ , or Hydrology $\overline{\Omega}$ naturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sampling point	•
/	tioutions, it amounts, important routiness, sto.
Hydrophytic Vegetation Present? Yes No	
Hydric Soil Present? Yes No Is the Sampled Ar	ea within a Wetland? Yes No
Wetland Hydrology Present? Yes No	
Dawarka	
Upland data point for wooz.	
opining chala point nov	
Data point taken in maintained transmission	n ROW and residential property.
Data point taker in the market	
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 Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)  Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3) Oxidized Rhizospheres on Living Roots (C3)	Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2)  Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No V Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes No Depth (inches):	Wetland Hydrology Present? Yes No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	
Wetland hydrology is not present	
11313111	
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	- ×
·	

Sampling Point: W002 - UPL

W.D. A	Absolute  _) <u>% Cover</u>		Dominance Test worksheet:  Number of Dominant Species That Are OBL, FACW, or FAC: (A)
1			Total Number of Dominant Species Across All Strata:  (B)
5	-		Percent of Dominant Species That Are OBL, FACW, or FAC:  (A/B
Sapling/Shrub Stratum  1. Robinia pscuanacacia 2. Rhus copa Ilinum 3. 4. 5.	5 10	= Total Cover  FacU FacU	Prevalence Index worksheet:           Total % Cover of:         Multiply by:           OBL species         x 1 =           FACW species         x 2 =           FAC species         x 3 =           FACU species         x 4 =           UPL species         x 5 =           Column Totals:         (A)         (B)
6. 7. 8.			Prevalence Index = B/A =  Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation
10.  Herb Stratum  1. Glechoma hadracad  2. Poa pratansis 3. Taraxacum officinale	30 20 10	= Total Cover    FacU   FacU	2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4			Definitions of Vegetation Strata:  Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter.
1.	40	= Total Cover	Sapling/Shrub- Woody plants, excluding vines, less than 3 in DBH and greater than or equal to 3.28 ft (1 m) tall.
Yoody Vine Stratum (Plot size:	_)		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2. 3. 4. 5.			Woody Vines - All woody vines greater than 3.28 ft in height.
6	0	= Total Cover	Hydrophytic Vegetation
	_ ×	27	Present? Yes No
regetation Remarks: (Include photo numbers here or on a separate		ē	

Soil Profile Description: (Describe to the dept			e absence	of indicators.)
Depth   Matrix	Color (moist)	% Type <sup>1</sup>	Loc <sup>2</sup>	Silladm Remarks
<sup>1</sup> Type: C=concentration, D=Depletion, RM=Redu	ced Matrix, MS=Masked Sa	nd Grains.		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:				Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1) Histic Epipedon (A2) Black Histic (A3) Hydrogen Sulfide (A4) Stratified Layers (A5) 2 cm Muck (A10) (LRR N) Depleted Below Dark Surface (A11) Thick Dark Surface (A12) Sandy Mucky Mineral (S1) (LRR N, MLRA 147,148) Sandy Gleyed Matrix (S4) Sandy Redox (S5) Stripped Matrix (S6)  3Indicators of hydrophytic vegetation and we	Thin Dark Surface Loamy Gleyed Mat Depleted Matrix (F Redox Dark Surface Depleted Dark Sur Redox Depression Iron-Manganese M Umbric Surface (F Piedmont Floodpla	3) ce (F6) face (F7) s (F8) lasses (F12) (LRR N, Mi 13) (MLRA 136, 122) in Soils (F19) (MLRA 14 al (F21) (MLRA 127, 147	LRA 136) 18) 7) r problemati	
Type: Depth (inches):			Hydric Soil Preso	
Soil Description Remarks: Hydric Soils	are not present			

WETLAND DETERMINATION DATA FORM - Easter	n Mountains and Piedmont Region
Project/Site: Hcppit to Rhad 5 City/County: 000 Applicant/Owner: Investigator(s): Section, Tox	Sampling Date: 7 7 7 2017  State: Sampling Point: W003 (PEM)  which, Range: Lick Tup  ncave, convex, none): Slope (%)  Long: 82, 62 1549 Datum: NAD 83  NWI classification: NA  No (If no, explain in Remarks)  Are "Normal Circumstances" present? Yes No  (If needed, explain any answers in Remarks.)
Hydrophytic Vegetation Present?  Hydric Soil Present?  Yes No Is the Sampled  Wetland Hydrology Present?  Yes No	Area within a Wetland? Yes No
Data point taken in maintained trans	missim Row
HYDROLOGY	
Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required, check all that apply)  Surface Water (A1) True Aquatic Plants (B14)  High Water Table (A2) Hydrogen Sulfide Odor (C1)  Saturation (A3) Oxidized Rhizospheres on Living Roots (C)  Water Marks (B1) Presence of Reduced Iron (C4)  Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6)  Drift Deposits (B3) Thin Muck Surface (C7)  Algal Mat or Crust (B4) Other (Explain in Remarks)  Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Aquatic Fauna (B13)	Secondary Indicators (minimum of two required)  Surface Soil Cracks (B6)  Sparsely Vegetated Concave Surface (B8)  Drainage Patterns (B10)  Moss Trim Lines (B16)  Dry-Season Water Table (C2)  Crayfish Burrows (C8)  Saturation Visible on Aerial Imagery (C9)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches):  Water Table Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:	Wetland Hydrology Present? Yes No
Wetland Hydrology Indicators are	L C3, D2, and D5.

ree Stratum (Plot size:	) % Cove	er Species? Status	
hone			Number of Dominant Species That Are OBL, FACW, or FAC:
<u> </u>	<u></u>		Total Number of Dominant Species
			Across All Strata: (E
\$ <del></del>			Percent of Dominant Species That Are OBL. FACW, or FAC: (A
			OBL, FACW, or FAC:
			Prevalence Index worksheet:
		= Total Cover	Total % Cover of:   Multiply by:     OBL species   x 1 =
pling/Shrub Stratum (Plot size:	15'		FACW species x 2 =
nme		3 —— ——	FAC species x 3 =
			FACU species x 4 =
			Column Totals: (A)
			Prevalence Index = B/A =
			Hydrophytic Vegetation Indicators:
		-	1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%
		= Total Cover	3 - Prevalence Index is ≤3.0 <sup>1</sup>
b Stratum / Plot şize:	5'		4 - Morphological Adaptations <sup>1</sup> (Provide supporti
Eupatorium perfoliatur		N Fach	111
Scirpus atrovirens.		N OP	1)
Carex lucida.	15	h tack	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
carex vulpinoided	10	N Obl	Definitions of Vegetation Strata:
Agrimonia parvitlora		Factor Factor	4
Asclepias incarnata		N. ODI	Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or mon diameter.
<u> </u>			DBH and greater than or equal to 3.28 ft (1 m) tall.
	85	= Total Cover	
	0-1		Herb - All herbaceous (non-woody) plants, regardless
ody Vine Stratum (Plot size:	30'		of size, and woody plants less than 3.28 ft tall.
none			
			Woody Vines - All woody vines greater than 3.28 ft in
			height.
		= Total Cover	
			Hydrophytic
			Vegetation
			Present? Yes/ No

Soil Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)						
Depth Matrix Redox Features						
(inches) Color (moist)	% Color (moist)	% Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-14 IOVR 412 -	75 751K444	25 C	PL	Sittloam		
			====			
· · · · · · · · · · · · · · · · · · ·			-		F	
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× × × × ×		\$				
S				<del></del>		
		<del></del>	<del></del>	· · · · · ·		
<sup>1</sup> Type: C=concentration, D=Depletion, RM	=Reduced Matrix, MS=Masked S	Sand Grains.		<sup>2</sup> Location: PL=Pore Li	ning, M=Matrix	
Hydric Soil Indicators:				Indicators for Problem	matic Hydric Soils³:	
Historial (A.4)	m 1 = 2 = 1	<b>7</b> \		0. 14 1.41.5	/MI DA 447)	
Histosol (A1)	Dark Surface (S7	•	7 440\	2 cm Muck (A10)		
Histic Epipedon (A2)		Surface (S8) (MLRA 14)			dox (A16) (MLRA 147, 148)	
Black Histic (A3)		e (S9) (MLRA 147, 148)		Piedmont Floodpl		
Hydrogen Sulfide (A4) Stratified Layers (A5)	Loamy Gleyed M  Depleted Matrix (			(MLRA 136, 147)		
2 cm Muck (A10) (LRR N)	- 77			Very Shallow Dar		
Depleted Below Dark Surface (A11)	Redox Dark Surfa			Other (Explain in	Remarks)	
Thick Dark Surface (A12)	Depleted Dark Son Redox Depression					
Sandy Mucky Mineral (S1) (LRR N,	<del></del>	Masses (F12) (LRR N, I	/LRA 136)			
MLRA 147,148)		F13) (MLRA 136, 122)	,			
Sandy Gleyed Matrix (S4)		lain Soils (F19) (MLRA	148)			
Sandy Redox (S5)	Red Parent Mate	rial (F21) (MLRA 127, 14	17)			
Stripped Matrix (S6)	<del>_</del>					
<sup>3</sup> Indicators of hydrophytic vegetation a	and wetland hydrology must be pr	esent unless disturbed	or problemati	ic.	5	
	into wordend mydronogy made bo pr	edoriti, diricos distarbed	J problemat	0.		
Restrictive Layer (if observed):						
Туре:			Hydrid		/	
Depth (inches):			Soil Pres	ent? Yes _	V No	
Soil Description Remarks:						
Meci	is F3.	3				
	_					
4						
			-			

1 - 1	FORM - Eastern Mountains and Piedmont Region
Applicant/Owner:  Investigator(s):  Landform (hilslope, terrace, etc.):  Subregion (LRR or MLRA):  Soil Map Unit Name:  Are climatic/hydrologic conditions on the site typical for this time of year?  Are Vegetation  Are Veg	NWI classification:  Yes V No (If no, explain in Remarks)  Are "Normal Circumstances" present? Yes No
Hydric Soil Present? Yes No Vestand Hydrology Present? Yes No	Is the Sampled Area within a Wetland?
Dota point taken in maintained	woos and woos transmission ROW.
HYDROLOGY	
Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required, check all that apply)  Surface Water (A1) True Aquatic Plants (B1)  High Water Table (A2) Hydrogen Sulfide Odor  Saturation (A3) Oxidized Rhizospheres  Water Marks (B1) Presence of Reduced I  Sediment Deposits (B2) Recent Iron Reduction  Drift Deposits (B3) Thin Muck Surface (C7)  Algal Mat or Crust (B4) Other (Explain in Remains Iron Deposits (B5)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Aquatic Fauna (B13)	r (C1) Drainage Patterns (B10) s on Living Roots (C3) Moss Trim Lines (B16) lron (C4) Dry-Season Water Table (C2) in Tilled Soils (C6) Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)
Field Observations:	
Surface Water Present? Yes No Depth (inches):  Water Table Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspect	Wetland Hydrology Present? Yes No
Remarks: Welland Hydrology Indicators and	re not present.

-UPL

201	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:	) <u>% Cover</u>	Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2,		¥	Total Number of Dominant Species 2 (B)
4			Percent of Dominant Species That Are OBL, FACW, or FAC:  (A/
6 <sub>4</sub>			Prevalence Index worksheet:
·	<del></del>	= Total Cover	
apling/Shrub Stratum (Plot size: 5/	)		FACW species x 2 =
1. <u>N</u> MC			FAC species
3			UPL species x 5 =
4		<del></del> 03	Column Totals: (A)
5			Prevalence Index = B/A =
3		<del></del>	Hydrophytic Vegetation Indicators:
9.			1 - Rapid Test for Hydrophytic Vegetation
		= Total Cover	2 - Dominance Test is >50%  3 - Prevalence Index is ≤3.0¹
- 1		= Total Cover	4 - Morphological Adaptations (Provide supporti
erb Stratum (Plot size: 5	) a=		data in Remarks or on a separate sheet)
Solidago Candaensis Daucius Carota	35	N Facu	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Agrimonia parviflona	- 6	Fach	Indicators of hydric soil and wetland hydrology must
Vernonia giganted	15	Y Fact	be present, unless disturbed or problematic.
5		-	Definitions of Vegetation Strata:
5			The state of the s
7 <sub>9</sub>			Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more diameter.
).			
7		9	
2	<u></u>	= Total Cover	Sapling/Shrub- Woody plants, excluding vines, less than 3 DBH and greater than or equal to 3.28 ft (1 m) tall.
			Uset All barbassus (see woods) plants regardless
oody Vine Stratum (Plot size: 30)	)		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
2			     
-			height.
N			
-		= Total Cover	
			Hydrophytic
			Vegetation Present? Yes No
egetation Remarks: (Include photo numbers here or on a	a separate sheet).		
I) I leaste dans	ndat		
Upland veg. is domin	HUME		
•			

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Soil Profile Description: (Describe to the depth	needed to document t	he indicator	or confirm th	e absence	of indicators.)	
DepthMatrix		Redox Featu	res			
(inches) Color (moist) %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-3 10YR412 100					SiHloam	
3-10 IOVR4/3 100					Silloam	
	3				×	
	-			-		
	· ·				s <del></del>	
		-			0	
	-		A\ <del>=====</del>			
			7		::	
					a======	
	-		-		50 <del></del>	
Trungs Connection DeDestation DM-D-dus	od Matrix MC=Mastrs d	Sand Crain	-		<sup>2</sup> Location: PL=Pore	e Linina M=Motriy
<sup>1</sup> Type: C=concentration, D=Depletion, RM=Reduc	eu maurx, mo-masked	Sand Grains,			LOCATION. PL-POR	C LIMING, IVITIVIAUIX.
Hydric Soil Indicators:					Indicators for Pro	blematic Hydric Soils³:
Histosol (A1)	Dark Surface (S	37)			2 cm Muck (A	10) <b>(MLRA 147)</b>
Histic Epipedon (A2)	Polyvalue Belov	•	3) (MLRA 147	. 148)		Redox (A16) (MLRA 147, 148)
Black Histic (A3)	Thin Dark Surfa	,	, ,	, ,		odplain Soils (F19)
Hydrogen Sulfide (A4)	Loamy Gleyed				(MLRA 136, 1	
Stratified Layers (A5)	Depleted Matrix				,	Dark Surface (TF12)
2 cm Muck (A10) (LRR N)	Redox Dark Su				Other (Explain	
Depleted Below Dark Surface (A11)	Depleted Dark					•
Thick Dark Surface (A12)	Redox Depress					
Sandy Mucky Mineral (S1) (LRR N,	Iron-Manganes	e Masses (F1	2) (LRR N, M	ILRA 136)		
MLRA 147,148)	Umbric Surface	(F13) (MLRA	A 136, 122)			
Sandy Gleyed Matrix (S4)	Piedmont Floor	lplain Soils (F	19) <b>(MLRA 1</b>	48)		
Sandy Redox (S5)	Red Parent Mar	terial (F21) (M	ILRA 12 <b>7</b> , 14	7)		
Stripped Matrix (S6)						
<sup>3</sup> Indicators of hydrophytic vegetation and wetl	and hydrology must be j	present, unles	ss disturbed o	or problema	tic	
Restrictive Layer (if observed):				1		
Туре:				Hydri	ic	
-				Soil Pres		No V
Depth (inches):				Soli Fres	sent? Tes	NO
Sail Description Demostra						
Soil Description Remarks:	100		į.			
Hydric Soils	dre not pre	sent				
114.11.	•					

WETLAND DETERMINATION DATA FORM - Eastern Mount	ains and Piedmont Region
Project/Site: Happiner to Rhodes City/County: Jackson	Co
Applicant/Owner: Sta	ALLON VOCA
Investigator(s): Section, Township, Range	
Landform (hilslope, terrace, etc.): Local relief (concave, conv	00 01-1000
Subregion (LRR or MLRA): LRR Lat: 39.08432477 Long	
Soil Map Unit Name: Or-Ornville Sitt loam, Oto 31. Slopes, frequentl	Y H & Dec Communication: NWI classification: NA
10.	(If no, explain in Remarks)
100	Iormal Circumstances" present? Yes V No
Are Vegetation (10), Soil (10), or Hydrology (110) naturally problematic? (If nee SUMMARY OF FINDINGS - Attach site map showing sampling point location	ided, explain any answers in Remarks.)
John Mark of Tribinos - Attach site map showing sampling point location	nis, transects, important reatures, etc.
Hydrophytic Vegetation Present? Yes No	/
Hydric Soil Present? Yes No Is the Sampled Area within	n a Wetland? Yes No
Wetland Hydrology Present? Yes No	
Remarks: Welland, data point for 1 WOOD - PEM-CATZ.	
Tale point taken at edge of maintained to	ransmission ROW and
between NWI (PUB) and riparian of Hour	se Criek.
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 Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)  Hydrogen Sulfide Odor (C1)  Saturation (A3)  Oxidized Rhizospheres on Living Roots (C3)	Drainage Patterns (B10)
Saturation (A3)  Oxidized Rhizospheres on Living Roots (C3)  Water Marks (B1)  Presence of Reduced Iron (C4)	Moss Trim Lines (B16) Dry-Season Water Table (C2)
Sediment Deposits (B2)  Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
Drift Deposits (B3)  Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes No Depth (inches):	/
Saturation Present? Yes No Depth (inches): Wetland	Hydrology Present? Yes No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	
Wetland Hydrology Indicators are ALAS, C3	, DZ, and DS.
'	
	· ·
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Tree Stratum

Herb Stratum

Woody Vine Stratum

				_
Dominance Te	st worksheet:			
Number of Domir OBL, FACW, or f	nant Species That Are FAC:	8	5	(A)
Fotal Number of Across All Strata:	Dominant Species	9	5	(B)
Percent of Domir DBL, FACW, or f	nant Species That Are FAC:	5	100	(A/B)
Prevalence Ind	ex worksheet:			
To	otal % Cover of:		Multiply by:	
OBL species				
ACW species				
AC species		x3=		
ACU species		x 4 =		25
JPL species				20
Column Totals:				
	Prevalence Index	= B/A =		8
$\overline{}$	1 - Rapid Test for l 2 - Dominance Test		-	
oe present, unle	•	st is >50% ex is ≤3.0 Adaptation s or on a apphytic Veren d hydrolo	% g <sup>1</sup> ons <sup>1</sup> (Provide suppo separate sheet) egetation <sup>1</sup> (Explain)	
be present, unle Definitions of \	Dominance Ter     - Prevalence Ind     - Morphological Adata in Remarks     Problematic Hydro  ydric soil and wetlaness disturbed or prob	st is >50% ex is ≤3,( Adaptation s or on a  apphytic Ver d hydrolo olematic.	% ons¹ (Provide suppo separate sheet) egetation¹ (Explain) ogy must	)
be present, unk Definitions of V Tree - Woody diameter. Sapling/Shru	2 - Dominance Te: 3 - Prevalence Ind 4 - Morphological Adata in Remarks Problematic Hydro  ydric soil and wetlances disturbed or problematic  Vegetation Strata:	st is >50% ex is ≤3.0 Adaptatio s or on a aphytic Ve d hydrole blematic.  vines, 3	%  ons¹ (Provide suppo separate sheet) egetation¹ (Explain) ogy must  in. (7.6 cm) or m	ore in
be present, unle Definitions of N Tree - Woody diameter. Sapling/Shru DBH and grea	2 - Dominance Ter 3 - Prevalence Ind 4 - Morphological of data in Remarks Problematic Hydro ydric soil and wetlant ess disturbed or proton Vegetation Strata: plants, excluding of b- Woody plants, of	st is >50% ex is ≤3.0 Adaptatio s or on a aphytic Ve d hydrolo blematic.  vines, 3  excluding o 3.28 ft dy) plant	your separate sheet) pegetation (Explain) pegy must in. (7.6 cm) or m g vines, less than (1 m) tall.	ore in

Hydrophytic

Vegetation Present?

Yes <u></u>

lo\_\_\_\_\_

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

Hydrophytic veg is dominant -passes the dominance test.

= Total Cover

Absolute Dominant Indicator

= Total Cover

) % Cover Species? Status

Sam	olina	Point:
Cuiii	P"" '9	· Oiii.

	,	ne absence of indicators.)
DepthMatrix	Redox Features	
(inches) Color (moist)	1 - 7 C VIO 11 11 0 D	Loc² Texture Remarks
0-9 04 01 80	) 13/K414 20 C	PL Sittlam
4-16 10/K4/1 BC	1.5/K4/4 20 C	PL Clayladm
18		
<u> </u>		
<sup>1</sup> Type: C=concentration, D=Depletion, RM=Re	duced Matrix, MS=Masked Sand Grains.	<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil Indicators:		Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol (A1)	Dark Surface (S7)	2 cm Muck (A10) (MLRA 147)
Histic Epipedon (A2)	Polyvalue Below Surface (S8) (MLRA 147	
Black Histic (A3)	Thin Dark Surface (S9) (MLRA 147, 148)	Piedmont Floodplain Soils (F19)
Hydrogen Sulfide (A4)	Loamy Gleyed Matrix (F2)	(MLRA 136, 147)
Stratified Layers (A5)	Depleted Matrix (F3)	Very Shallow Dark Surface (TF12)
2 cm Muck (A10) (LRR N)	Redox Dark Surface (F6)	Other (Explain in Remarks)
Depleted Below Dark Surface (A11) Thick Dark Surface (A12)	Depleted Dark Surface (F7)  Redox Depressions (F8)	
Sandy Mucky Mineral (S1) (LRR N,	Iron-Manganese Masses (F12) (LRR N, N	ILRA 136)
MLRA 147,148)	Umbric Surface (F13) (MLRA 136, 122)	,
Sandy Gleyed Matrix (S4)	Piedmont Floodplain Soils (F19) (MLRA 1	48)
Sandy Redox (S5)	Red Parent Material (F21) (MLRA 127, 14	7)
Stripped Matrix (S6)	<b>3</b>	
3		
"Indicators of hydrophytic vegetation and	wetland hydrology must be present, unless disturbed of	or problematic.
*Indicators of hydrophytic vegetation and Restrictive Layer (if observed):	wetland hydrology must be present, unless disturbed o	or problematic.
	wetland hydrology must be present, unless disturbed o	r problematic.  Hydric
Restrictive Layer (if observed):	wetland hydrology must be present, unless disturbed o	
Restrictive Layer (if observed):  Type:	wetland hydrology must be present, unless disturbed o	Hydric
Restrictive Layer (if observed):  Type: Depth (inches):		Hydric
Restrictive Layer (if observed):  Type: Depth (inches):	vetland hydrology must be present, unless disturbed on the second of the	Hydric
Restrictive Layer (if observed):  Type: Depth (inches):		Hydric
Restrictive Layer (if observed):  Type: Depth (inches):		Hydric
Restrictive Layer (if observed):  Type: Depth (inches):		Hydric
Restrictive Layer (if observed):  Type: Depth (inches):		Hydric
Restrictive Layer (if observed):  Type: Depth (inches):		Hydric
Restrictive Layer (if observed):  Type: Depth (inches):		Hydric
Restrictive Layer (if observed):  Type: Depth (inches):		Hydric
Restrictive Layer (if observed):  Type: Depth (inches):		Hydric
Restrictive Layer (if observed):  Type: Depth (inches):		Hydric
Restrictive Layer (if observed):  Type: Depth (inches):		Hydric

WEILAND DETERMINATION DATA F	ORM - Eastern Mountains and Pledmont Region
Project/Site: Hoppier to Khodo c	ity/County: Jackson Co. Sampling Date: 7/8/201
Applicant/Owner:	State: Sampling Point: W006
Investigator(s):	Section, Township, Range:
Landform (hilslope, terrace, etc.):	Local relief (concave, convex, none): COY COV Slope (%) 0 .
Subregion (LRR or MLRA): Lat: 39.08	408387 Long: -82.62043721 Datum: NAD 83
Soil Map Unit Name: Or-Orrville Silloam, 01031. Sla	ops, frequently flooded NWI classification: NA
Are climatic/hydrologic conditions on the site typical for this time of year?	Yes No (If no, explain in Remarks)
Are Vegetation $\underline{NQ}$ , Soil $\underline{NQ}$ , or Hydrology $\underline{NQ}$ significantly distur	bed? Are "Normal Circumstances" present? Yes No
Are Vegetation $\[ \underline{\bigcap} \]$ , Soil $\[ \underline{\bigcap} \]$ , or Hydrology $\[ \underline{\bigcap} \]$ naturally problem.	atic? (If needed, explain any answers in Remarks,)
SUMMARY OF FINDINGS - Attach site map showing	ng sampling point locations, transects, important features, etc.
Hudraphytic Vegetation Property Veg	
Hydrophytic Vegetation Present? Yes No No	1 11 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Hydric Soil Present? Yes No	Is the Sampled Area within a Wetland?  Yes No
Wetland Hydrology Present? Yes No	
Remarks: Western & dates point for W006	-PEM-CATMODZ. transmission Row and next to active
To eletted clothed bount to	being pieces Day and next to active
Data must taken in maintain-ed	transmission from and here to see a
Lotte Politic Parent	
railroad tracks.	VIII .
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 Aquatic Plants (B	14) Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)  Hydrogen Sulfide Odor	(C1) Drainage Patterns (B10)
Saturation (A3)  Oxidized Rhizospheres	on Living Roots (C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduced I	ron (C4) Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduction	in Tilled Soils (C6) Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface (C7	· · · · · · · · · · · · · · · · · · ·
Algal Mat or Crust (B4) Other (Explain in Rema	
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes V No Depth (inches):	16
Water Table Present? Yes V No Depth (inches):	O ,
Saturation Present? Yes No Depth (inches):	○ Wetland Hydrology Present? Yes \/ No
(includes capillary fringe)	Wetterful Hydrology (1656)
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspe	ctions), if available:
, , , , , , , , , , , , , , , , , , , ,	,
Remarks:	N N
We fland Hidrology Indicators	clv A17A3, C1, C3, D2, and D5, B10.
Tochard rapides of managers.	, , , , , , ,
V ·	9.
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1.	-	1
	HM	.)
-	Sup B	1

1. NINC			Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A
2.	1, 0 - 1, 1 - 1, 2011			Total Number of Dominant Species Across All Strata:  (B
				Percent of Dominant Species That Are OBL, FACW, or FAC:  (A
	(Plot size: 15'			Prevalence Index worksheet:           Total % Cover of:         Multiply by:           OBL species         x 1 =           FACW species         x 2 =           FAC species         x 3 =           FACU species         x 4 =           UPL species         x 5 =           Column Totals:         (A)
Sagifaria cur Sagifaria oryzoi Lersia oryzoi Carex lunda Prajaris aru	(Plot size: 51 reata des namacea	10 30 20 15	= Total Cover  N Obl Cobl Y Cobl	Prevalence Index = B/A =  Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Definitions of Vegetation Strata:  Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more
ody Vine Stratum	(Plot size:_301			diameter.  Sapling/Shrub- Woody plants, excluding vines, less than 3 DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3,28 ft tall.
				Woody Vines - All woody vines greater than 3.28 ft in height.
		0	= Total Cover	Hydrophytic Vegetation Present? Yes No
getation Remarks: (Include phot	to numbers here or on a sep	arate sheet).	005515 1	the dominance test +

153- A	1
DEWI	- 6
1161	_ /
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	Matrix			Redox Feature	96		
Depth (inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	_ Loc²	Texture Remarks
2-10	IOVR41	85	1.54R44	15	C	PL	Clayloum
							:
	<u> </u>				-		: <del>}</del>
				·· <del>····</del>			
	=======================================			(s) <del>====</del>			
				·			
				·			
	Y <u></u>						<del></del>
	1						
ype: C=conce	entration, D=Depletion,	RM=Reduced	Matrix, MS=Masked	Sand Grains,			<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
/dric Soil Indi							Indicators for Problematic Hydric Soils <sup>3</sup> :
/aric 30ii iiiai	icators,						
_ Histosol (A	<b>N1</b> )		Dark Surface (S	-			2 cm Muck (A10) (MLRA 147)
Histic Epip			Polyvalue Belov			7, 148)	Coast Prairie Redox (A16) (MLRA 147, 148)
_ Black Histi	•		Thin Dark Surfa		A 147, 148)		Piedmont Floodplain Soils (F19)
<b>=</b> 2:	Sulfide (A4)		Loamy Gleyed N				(MLRA 136, 147)
	ayers (A5)		Depleted Matrix				Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
	(A10) (LRR N)	1\	Redox Dark Sur  V Depleted Dark S				Other (Explain in Nemarks)
	Below Dark Surface (A1 Surface (A12)	'/	Redox Depressi				
_	cky Mineral (S1) (LRR N	١.	Iron-Manganese		2) (LRR N, N	MLRA 136)	
MLRA 147			Umbric Surface			•	
Sandy Gle	yed Matrix (S4)		Piedmont Flood	plain Soils (F1	19) <b>(MLRA</b> 1	48)	
Sandy Red	dox (S5)		Red Parent Mat	erial (F21) (M	LRA 127, 14	17)	9
_ Stripped M	latrix (S6)						
	of hydrophytic vegetation	on and wetlan	d hydrology must be p	oresent, unles	s disturbed	or problema	atic.
3Indicators			=			1	
	ver (if observed):						
estrictive La	yer (if observed):					Hvdr	ic
estrictive La						Hydr	/
estrictive La			11			Hydr Soil Pre	
estrictive La Type: Depth (inch	hes):		11				/
estrictive La Type: Depth (inch	hes):	14 F	2				/
estrictive La Type: Depth (inch	hes):	ets F	3.				/
estrictive La Type: Depth (inch	hes):	ets F	3.				/
estrictive La Type: Depth (inch	hes):	ets F	3.				/
estrictive La Type: Depth (inch	hes):	ets F	3.				/
estrictive La Type: Depth (inch	hes):	ets F	3.				/
estrictive La Type: Depth (inch	hes):	ets F	3.				/
estrictive La Type: Depth (inch	hes):	ets F	3.				/
estrictive La Type: Depth (inch	hes):	ets F	3.				/
estrictive La Type: Depth (inch	hes):	ets F	3.				/
estrictive La Type: Depth (inch	hes):	ets F	3.				/

WETLAND DETERMINATION DATA FORM - Eastern	1 Mountains and Piedmont Region
Project/Site: Hopping to Khodis City/County: 2007	SON CO
Applicant/Owner:	State: Sampling Point: W006 - UPL
	nship, Range: LICK TWP.
Landform (hilslope, terrace, etc.): Local relief (con-	cave, convex, none): Slope (%)
Subregion (LRR or MLRA):	Long: -82.62038613 Datum: NAD 83
Soil Map Unit Name: Or-Orrville Sitt loam, Oto31, Slopes freque	NWI classification: NA
Are climatic/hydrologic conditions on the site typical for this time of year?	No (If no, explain in Remarks)
Are Vegetation $\boxed{\underline{\mathcal{N}}}$ , Soil $\underline{\underline{\mathcal{N}}}$ , or Hydrology $\underline{\underline{\mathcal{N}}}$ significantly disturbed?	Are "Normal Circumstances" present? Yes No
Are Vegetation $MO$ , Soil $MO$ , or Hydrology $MO$ naturally problematic?	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sampling point	nt locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	
	Area within a Wetland?
	Area within a Wetland? Yes No
Wetland Hydrology Present? Yes No No	
Remarks: Upland data point for wood	JU5
Duta point taken in maintained tra	nsmission Row and between
PEM wetland and active Prailroad tr	acks.
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 Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)  Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3) Oxidized Rhizospheres on Living Roots (C3	3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes No Depth (inches):	Wetland Hydrology Present? Yes No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Social Control State (Stream gauge, memoring trong actual process, processes,	
Remarks:	
Wetland Hydrology Is not present.	
•	
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VEGETATION - Use scientific na	mes of plants.
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	Absolute	Dominant Indicator	Dominance Test worksheet:
ee Stratum (Plot size:	) % Cover	Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC:  (A
			Total Number of Dominant Species Across All Strata: (B
			Percent of Dominant Species That Are OBL, FACW, or FAC:
pling/shrub stratum  KUAUS altegheniensis  Rosa muttifleral  Juglans nigra	20	= Total Cover  Facul Facul Facul	Prevalence Index worksheet:           Total % Cover of:         Multiply by:           OBL species         x 1 =           FACW species         x 2 =           FAC species         x 3 =           FACU species         x 4 =           UPL species         x 5 =           Column Totals:         (A)
			Prevalence Index = B/A = 3.3
erb Stratum . (Plot strzej . 5		= Total Cover	Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation  2 - Dominance Test is >50%  3 - Prevalence Index is ≤3.0¹  4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
Verbesina alternitolia Pradaris arundinacea	15	Fac	Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Definitions of Vegetation Strata:
			Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more diameter.  Sapling/Shrub- Woody plants, excluding vines, less than 3
,	110	= Total Cover	DBH and greater than or equal to 3.28 ft (1 m) tall.
pody Vine Stratum (Plot size: 30	))		Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
			Woody Vines - All woody vines greater than 3,28 ft in height.
X	0_	= Total Cover	
			Hydrophytic  Vegetation  Present? Yes No
getation Remarks: (Include photo numbers here or c	on a separate sheet).		
Upland veg is dominant	22.		
-			

_	11	0	
	·V	T.	100

Depth	Matrix			Redox Featur	es			
(inches)	Color (moist)	% IDÓ	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture SiHloam	Remarks grave 8"
Type: C=conce	entration, D=Depletion,	RM=Reduced	Matrix, MS=Masked	Sand Grains.			<sup>2</sup> Location: PL=F	Pore Lining, M=Matrix.
Hydric Soil Indi	cators:						Indicators for P	roblematic Hydric Soils <sup>3</sup> :
Depleted Both Thick Dark Sandy Muc MLRA 147, Sandy Gley Sandy Redustripped Ma	edon (A2) c (A3) Sulfide (A4) ayers (A5) (A10) (LRR N) elow Dark Surface (A1 Surface (A12) eky Mineral (S1) (LRR II ,148) ved Matrix (S4) ox (S5)	Ν,	Dark Surface (S Polyvalue Belov Thin Dark Surfa Loamy Gleyed I Depleted Matrix Redox Dark Sur Depleted Dark S Redox Depress Iron-Manganess Umbric Surface Piedmont Flood Red Parent Mat	w Surface (S8 ace (S9) (MLR Matrix (F2) ac (F3) arface (F6) Surface (F7) acomo (F8) acomo (F13) (MLRA Alplain Soils (F121) (M	A 147, 148)  2) (LRR N, M. 136, 122)  19) (MLRA 14)  LRA 127, 147	LRA 136) 18) 7)	Coast Prair Piedmont F (MLRA 136 Very Shallo Other (Expl	(A10) (MLRA 147) ie Redox (A16) (MLRA 147, 148) iloodplain Soils (F19) is, 147) iw Dark Surface (TF12) lain in Remarks)
Restrictive Lay	yer (if observed):			=				
Type:	nes):					Hydr Soil Pre		No
Soil Descriptio	on Remarks: Soil	1	taken ni	ext to	s Rail	road	tracks o	gravel below

WETLAND DETERMINATION DATA FORM - Eastern	Mountains and Piedmont Region
Project/Site: Happing to Rhads City/County: Jac	KSM (0. Sampling Date: 7/18/2017
Applicant/Owner:	State: OH Sampling Point: W008 (PEM)
Investigator(s): Section, Towns	ship, Range: Lick Twp.
	ave, convex, none): COY)COUC Slope (%) /.
Subregion (LRR or MLRA): URK Lat: 39, 081 02274	Lopg: -82,58411508 Datum: NAD 83
Soil Map Unit Name: Or-Orriville Sittloam, Oto3/Slopes, treque	NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year?  Yes	No (If no, explain in Remarks)
Are Vegetation $\stackrel{\frown}{\text{ND}}$ , Soil $\stackrel{\frown}{\text{ND}}$ , or Hydrology $\stackrel{\frown}{\text{ND}}$ significantly disturbed?	Are "Normal Circumstances" present?  Yes No
Are Vegetation <u>ND</u> , Soil <u>ND</u> , or Hydrology <u>N</u> D naturally problematic?	(If needed, explain any answers in Remarks,)
SUMMARY OF FINDINGS - Attach site map showing sampling point	clocations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	
Hydric Soil Present? Yes No Is the Sampled Are	rea within a Wetland? Yes No
Wetland Hydrology Present? Yes No	
Remarks:	
Wetland data point for WOOR - PEM-CAT	1.000
Data point taken in maintained transmission	Rowandat bottom of pond
Data point taken in maint arrived transmission	
dam.	
HYDROLOGY	
	Consideration (white two of two services)
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required, check all that apply)  Surface Water (A1)  True Aquatic Plants (B14)	Surface Soil Cracks (B6) Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)  / Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3)  Oxidized Rhizospheres on Living Roots (C3)	
Water Marks (B1)  Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2)  Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
Drift Deposits (B3)  Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)  Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	/ Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
Water Table Present? Yes V No Depth (inches):	
SWITH THE PROCEEDINGS AND A PROPERTY OF THE PR	West-additional Processor No. 1
Saturation Present? Yes No Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
g,,,,,,,,,,,,,,,,,,	
Remarks:	
Wetland hydrology Indicators are AIR	A3. C3. D2 and D5.
The state of the s	(3) 03/10/2010
	*
	-

20	Absolute	Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30	) % Cover	Species? Status	Number of Dominant Species That Are
1. none			OBL, FACW, or FAC:
2			
3,:			Total Number of Dominant Species Across All Strata: (B)
4			
			Percent of Dominant Species That Are
5,			OBL, FACW, or FAC:
6			Prevalence Index worksheet:
		= Total Cover	Total % Cover of: Multiply by:
		Total Cover	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15	)		FACW species x 2 =
1. none			FAC species x 3 =
2			FACU species x 4 =
3			UPL species x 5 =
4			Column Totals: (A) (B)
5			
6,			Prevalence Index = B/A =
7,			Hydrophytic Vegetation Indicators:
8,			1 - Rapid Test for Hydrophytic Vegetation
10			2 - Dominance Test is >50%
	0	= Total Cover	3 - Prevalence Index is ≤3.0¹
		8	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
Herb Stratum (Plot size: 5	_) ac		data in Remarks or on a separate sheet)
1. Carex lurida	_ 35	7 061	Problematic Hydrophytic Vegetation¹ (Explain)
2 Juncus effusus	_ 20_	Hack	
3. Typha xalauca	<u> </u>	M DOI	Indicators of hydric soil and wetland hydrology must
Eupatorium perfoliatum		N Hack	be present, unless disturbed or problematic.
5. Mimulus alatus		N OOL	Definitions of Vegetation Strata:
6			The last transfer and the state of the state
7			Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter.
9			
10			
11.			Sapling/Shrub- Woody plants, excluding vines, less than 3 in.
12			DBH and greater than or equal to 3.28 ft (1 m) tall.
	70	= Total Cover	
20			Herb - All herbaceous (non-woody) plants, regardless
Woody Vine Stratum (Plot size: 30	)		of size, and woody plants less than 3.28 ft tall.
1. nme	$\rightarrow$ $-$		
3			Woody Vines - All woody vines greater than 3.28 ft in
4			height.
5			255
6.			
	_O_	= Total Cover	
			Hydrophytic
			Vegetation Present? Yes √ No
			Present? Yes V No No
Vegetation Remarks: (Include photo numbers here or on a sepa	rate sheet)		
		1 .	1 1 1
Hydrophytic veg. is domina	nt- or	155es the	dominance test.
Handrid (10 ACA: 12 Month 11	in pe	رایان زان	C/Can il tra ran.
J	-		
03.5			

Soil Profile De	escription: (Describe t	to the depth	needed to document t	the indicator	or confirm t	he absence	e of indicators.)		
Depth	Matrix			Redox Featu					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
0-16	10YR412	80	104R46	20		PL	Clayloum		
	200						- L		
	-								
-	•	-	: E						
=		-	\	-			7 7		
				-			f <del></del>		
7	-								
4		4 9		2 2					
-		-	- =	-					
			:			3	= = = = = = = = = = = = = = = = = = = =		
-	· ————	-	-		-	=			
<del></del>	: :	s <del>,                                   </del>							
	-		=		(v <u>=</u>				
<sup>1</sup> Type: C=cond	centration, D=Depletion	, RM=Reduc	ed Matrix, MS=Masked	Sand Grains			<sup>2</sup> Location: PL=Pore Lin	ing, M=Matrix.	
Hydric Soil Inc	dicators:						Indicators for Problem	natic Hydric Soils <sup>3</sup> :	
Aryania don ini									
Histosol (	A1)		Dark Surface (\$	S7)			2 cm Muck (A10) (	(MLRA 147)	
Histic Epi	pedon (A2)		Polyvalue Belo	w Surface (S	B) <b>(MLRA 14</b> 7	7, 148)	Coast Prairie Red	ox (A16) (MLRA 147, 148)	
Black His	tic (A3)		Thin Dark Surfa	ace (S9) <b>(ML</b> I	RA 147, 148)		Piedmont Floodpla	ain Soils (F19)	
Hydrogen	Sulfide (A4)		Loamy Gleyed	Matrix (F2)			(MLRA 136, 147)		
Stratified	Layers (A5)		Depleted Matrix (F3)				Very Shallow Dark	Surface (TF12)	
2 cm Muc	k (A10) (LRR N)		Redox Dark Surface (F6)				Other (Explain in F	Remarks)	
Depleted	Below Dark Surface (A	11)	Depleted Dark	Surface (F7)					
Thick Dar	k Surface (A12)		Redox Depress	sions (F8)					
	ıcky Mineral (S1) ( <b>LRR</b>	N,	Iron-Manganes			ILRA 136)			
MLRA 14			Umbric Surface						
	eyed Matrix (S4)		Piedmont Floor						
Sandy Re			Red Parent Ma	terial (F21) (N	ИLRA 127, 14	47)			
Stripped N	Matrix (S6)								
3Indicators	s of hydrophytic vegetat	ion and wetla	and hydrology must be	present, unle	ss disturbed	or problema	atic.	.0	
		comôt!		Landa Sanid		1			
Restrictive La	ayer (if observed):								
Type:	<u> </u>					Hydr	ric	,	
Depth (inc	ches):					Soil Pre	sent? Yes _	No	
Soil Descripti	ion Remarks:								
-	- ΜΛ	ccts F	-3.						
	101	,0010							
			83						

WETLAND DETERMINATION DATA FORM - Eastern	Mountains and Piedmont Region
Project/Site: Happy to Rhodes City/County: Jack	Sun Co Sampling Date: 7/18/2017
Applicant/Owner: AEP	State: OH Sampling Point: W008 - UPL
	ship, Range: LICK TWP
	ave, convex, none): CONVCX Slope (%)
Subregion (LRR or MLRA): L88 Lat: 39.08095010	Long: -82.58382687 Datum: NAD 83
Soil Map Unit Name: Or-Orrville Sitt Joan Oto 3/1 Slaves frequent	WI classification: NA
Are climatic/hydrologic conditions on the site typical for this time of year?  Yes	No (If no, explain in Remarks)
Are Vegetation 100, Soil 100, or Hydrology 100 significantly disturbed?	Are "Normal Circumstances" present? Yes No
Are Vegetation (1), Soil (1), or Hydrology (1) naturally problematic?	(If needed, explain any answers in Remarks,)
SUMMARY OF FINDINGS - Attach site map showing sampling poin	•
oblimate of the birds - Access site in the showing sampling point	trooditoria, transacta, important realarco, etc.
Hydrophytic Vegetation Present? Yes No	,
Hydric Soil Present? Yes No Is the Sampled Ar	rea within a Wetland? Yes No
Wetland Hydrology Present? Yes No	
Remarks: Upland data point for woos	
opidital decide points to	- 741
Data point taken in maintained transmirs	SIUM KOW
Data point factor in the	
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 Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3) Oxidized Rhizospheres on Living Roots (C3)	Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
Drift Deposits (B3) Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes No	<u> </u>
Water Table Present? Yes No Depth (inches):	
	Missiand Hudralagu Branant? Voc. No.
Saturation Present? Yes No Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Describe Necorded Data (stream gauge, monitoring well, actial photos, previous inspections), if available.	16
Bernales	
Remarks:	
Wetland hydrology is not present.	
	0
'	

Sampling Point:	800W	- UPL

Tree Stratum (Plot size: 35)	Absolute	Dominant Indicator	Dominance Test worksheet:
	_) <u>% Cover</u>	Species? Status	Number of Dominant Species That Are
1. NONE			OBL, FACW, or FAC:
2.			
			Total Number of Dominant Species Across All Strata: (B)
3,	-		AUUSS All Silata.
4			Percent of Dominant Species That Are
5,			QBL_FACW, or FAC: (A/B)
6.			
7.			Prevalence Index worksheet:
	0	= Total Cover	Total % Cover of: Multiply by:
10-1			OBL species x 1 =
Sapling/Shrub Stratum	_) _		FACW species x 2 =
1. Limbaenaria turipitara	2	- Facu	FAC species x 3 =
2. Rubus allegheniersis	5	Facu	FACU species x 4 =
3			UPL species x 5 =
4			Column Totals: (A) (B)
5			
6,			Prevalence Index = B/A =
7	-		Type American (Control)
8,			Hydrophytic Vegetation Indicators:
9			1 - Rapid Test for Hydrophytic Vegetation
10,		7.10	2 - Dominance Test is >50%
	10_	= Total Cover	3 - Prevalence Index is ≤3.0¹
50 N 20 5 61	2		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
Herb Stratum  1. Pulcanthe mum Vuladre	- <sup>)</sup>	N []al	data in Remarks or on a separate sheet)
	= ====	7 200	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3 Trifolium pratense	- 1/	Fact	1 Indicators of hydric coil and wotland hydrology must
A THE STATE OF THE	<u> </u>	N Fact	Indicators of hydric soil and wetland hydrology must
5. Polystichum acrostichoides		N Facu	be present, unless disturbed or problematic.
	<u> </u>	Tucu	Definitions of Vegetation Strata:
6			
7			Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter.
8,			dameter.
9			
10.			
11	-		Sapling/Shrub- Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
12	30	= Total Cover	DBM and greater than or equal to other it (1 m) tall.
		- 10(8) 0070	
			Herb - All herbaceous (non-woody) plants, regardless
Woody Vine Stratum (Plot size: 30	Λ		of size, and woody plants less than 3.28 ft tall.
1. None			3 data ( 3 data ) para data data data data data data data d
2			
3.			Woody Vines - All woody vines greater than 3.28 ft in
4.			height.
5.			
6.			
	0	= Total Cover	
			Hydrophytic
			Vegetation
x x			Present? Yes No
Vegetation Remarks: (Include photo numbers here or on a separa	te sheet).		
Upland veg is dominant.			
7			

	A 12	-		
	۱ ۱	Ш	n	
-	t I	1		4

Depth	Matrix			Redox Featu	res		<u>.</u>	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-110	10NR413	100					Silt	
0 10	1041111	100						
	-	÷ =====0		-	<del>;</del> :	-		
		# ====0				-		
			=					
=======================================		-						
	· ·			-			. ——-	
	-			-				
ny sa	2 N N N N N N		WAY - TA	=======================================				0.00%
Type: C=cond	centration, D=Depletion	, RM=Reduced	Matrix, MS=Masked	Sand Grains.			<sup>2</sup> Location: PL=Po	re Lining, M=Matrix.
Links O. 11.1	dia-ta						Indiantous for D	oblomatic U.J.: - C.21-3.
ydric Soil Inc	dicators:						indicators for Pr	oblematic Hydric Soils <sup>3</sup> :
Histosol (	Δ1)		Dark Surface (S	7)			2 cm Muck (	A10) (MLRA 147)
			Polyvalue Below	-	\	4.40\		
	pedon (A2)	9		•		, 140)		Redox (A16) (MLRA 147, 148)
Black His		2	Thin Dark Surface		RA 147, 148)			oodplain Soils (F19)
	Sulfide (A4)	5	Loamy Gleyed N	/latrix (F2)			(MLRA 136,	·
Stratified	Layers (A5)	5	Depleted Matrix	(F3)			Very Shallov	v Dark Surface (TF12)
2 cm Muc	k (A10) (LRR N)		Redox Dark Sur	face (F6)			Other (Expla	in in Remarks)
Depleted	Below Dark Surface (A	11)	Depleted Dark S	Surface (F7)				
Thick Dar	k Surface (A12)		Redox Depressi	ons (F8)				
	icky Mineral (S1) (LRR	N,	Iron-Manganese		2) (LRR N, M	LRA 136)		
MLRA 14			Umbric Surface					
	eyed Matrix (S4)		Piedmont Flood			48)		
Sandy Re			Red Parent Mate					
		=	Red Parent Wate	enai (FZ I) (IV	ILROA 121, 141	' )		
Stripped it	Matrix (S6)							
3Indicators	s of hydrophytic vegeta	ion and wetlan	d hydrology must be p	resent unles	s disturbed o	r problema	tic.	
Wild Gatore	o , a. op , a. o . ogo. a.	and Wolldin	a my are legy must so p	and and		Piccionic		
estrictive La	ayer (if observed):							
Type:						Hydr	ic	
	1 \					Soil Pre		No. 3
Depth (inc	ines):					Soli Pre	sent? Yes	No
oil Descripti	ion Remarks:							
	. 1 1	0 l a	re not pres	ent				
	Hudri	C20112 (1	re noi pres	CIII 355				
	''1		•					
							9	

WETLAND DETERMINATION DATA FORM - Eastern Mou	ntains and Piedmont Region
Project/Site: Heppings to Rhodes City/County: Jackson	CO Sampling Date: 7 (9/2017
	State: OH Sampling Point: W009
	ange: LICK TIMP.
	invex, none): CMCQVC, Slope (%) O/
The state of the s	ong: -82.56468391 Datum: NAD 83
Soil Map Unit Name: ChD-Clumer loam, 15to 25 7. Slopes	NWI classification:
	No (If no, explain in Remarks)
An	"Normal Circumstances" present? Yes No
	needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sampling point local	tions, transects, important features, etc.
Hydrophytic Vegetation Present? Yes \to No	
Hydric Soil Present? Yes / No Is the Sampled Area wit	thin a Wetland?
Wetland Hydrology Present? Yes No	
Data point taken in maintained transmission Rol	02.
I I I I I I I I I I I I I I I I I I I	
Data point taken in maintained transmission kol	N
D-feet 1	
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 Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)  Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
✓ Saturation (A3)	Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2)  Recent Iron Reduction in Tilled Soils (C6)  This Mark Outland (C7)	Crayfish Burrows (C8)
Drift Deposits (B3)  Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)  FAC-Neutral Test (D5)
Aquatic Fauna (B13)	FAC-Nebiral Test (D5)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	
	and Hydrology Present? Yes No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	
Wetland hydrology Indicators are A3203, D2	2 and DS
·	

Sampling Point:	W009	(PEM)	
worksheet:			
ınl Species That Are		7	

ee Stratum (Plot size: 30'	) <u>% Cover</u>	Species? Status	Number of Dominant Species That Are
none			OBL, FACW, or FAC:
		375	Total Number of Dominant Species Across All Strata: (E
9			Percent of Dominant Species That Are OBL, FACW, or FAC:
<u> </u>			Prevalence Index worksheet:
	0	= Total Cover	Total % Cover of: Multiply by:
oling/Shrub Stratum (Plot size: 5	W		OBL species x 1 =
oling/Shrub Stratum (Plot size: 🕥	)		FACW species
Tions	<del></del>		FACU species x 4 =
			UPL species x 5 =
			Column Totals: (A)
			Prevalence Index = B/A =
			Hydrophytic Vegetation Indicators:
			1 - Rapid Test for Hydrophylic Vegetation 2 - Dominance Test is >50%
		= Total Cover	3 - Prevalence Index is ≤3.0¹
			4 - Morphological Adaptations <sup>1</sup> (Provide supporti
Stratum (Plot size: 5/	-) 25	S. 20 E	data in Remarks or on a separate sheet)
Lersia oryzolaes	<u> </u>	001	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Panicum clandestinum Mimulus alatus	<u> </u>	N Fac	Indicators of hydric soil and wetland hydrology must
Carex Jurida	25	7 06	be present, unless disturbed or problematic.
Impatiens capensis	15	N Fack	Definitions of Vegetation Strata:
			Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more
			diameter.
			Sapling/Shrub- Woody plants, excluding vines, less than 3
			DBH and greater than or equal to 3.28 ft (1 m) tall.
	85	= Total Cover	
ody Vine Stratum (Plot size: 301	- )		of size, and woody plants less than 3.28 ft tall.
none			
			Woody Vines - All woody vines greater than 3.28 ft in
			height.
	0	= Total Cover	
		= =	Hydrophytic Vegetation Present? Yes No
			Present? Yes_V No
getation Remarks: (Include photo numbers here or on a sepa	rate sheet).		
		b 1	
Hydrophytic veg is domina	t-posse	is the don	ninacetist.
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
J	•		
J. J. J.	·		
J. J. J.	·		
J. J.			

Depth							
•	Matrix		W <u>=</u>	Redox Featu		. 2	
(inches)	Color (moist)	100	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup> _	Texture Remarks
0-4	101K4K	100	· · · · · · · · · · · · · · · · · · ·			01	Siltlaam
4-16	104K511	80	104R46	20	_ <u>C</u>	YL	Clayloum
			•				<u> </u>
	1	3	12 0				
		-	- 1				
			X())			: <del>-</del>	
	3 -	2 2	75				· <del></del>
			110		-		<u> </u>
	* :=			:=		-	
		4	US-		-		
	-		225			-	
	a <del>1</del> _		.V			i i	
	-				7 <del>2</del>	=	×
Type: C=cone	centration, D=Depletion	ı, RM=Reduc	ed Matrix, MS=Masked	Sand Grains	6		<sup>2</sup> Location: PL=Pore Lining, M=Matrix.
Hydric Soil In	dicators:						Indicators for Problematic Hydric Soils <sup>3</sup> :
Histosol (	(A1)		Dark Surface (	S7)			2 cm Muck (A10) (MLRA 147)
— Histic Epi	ipedon (A2)		Polyvalue Belo		8) <b>(MLRA 14</b>	7, 148)	Coast Prairie Redox (A16) (MLRA 147, 148)
— . Black His			Thin Dark Surfa				Piedmont Floodplain Soils (F19)
	Sulfide (A4)		Loamy Gleyed				(MLRA 136, 147)
	Layers (A5)		Depleted Matri:				Very Shallow Dark Surface (TF12)
	ck (A10) (LRR N)		Redox Dark Su				Other (Explain in Remarks)
	Below Dark Surface (A	11)	Depleted Dark				
	rk Surface (A12)	''',	Redox Depress				**
	ucky Mineral (S1) (LRR	N	Iron-Manganes		12) (I RR N	MI RA 136)	
MLRA 14		14,	Umbric Surface			,	
	eyed Matrix (S4)		Piedmont Floor			148)	
Sandy Re			Red Parent Ma				
	Matrix (S6)		- Neu l'alche Ma	iterial (i 2 i ) (i	VILIO ( 121, 1	•••,	
Outpped i	Matrix (00)						
<sup>3</sup> Indicator	s of hydrophytic vegeta	tion and wetl	and hydrology must be	present, unle	ss disturbed	or problema	atic.
Restrictive L	ayer (if observed):						
Type:						Hydr	ric
Depth (inc	ches):					Soil Pre	esent? Yes No
						1	
Soil Descript	ion Remarks:	1 -	· · · · · · · · · · · · · · · · · · ·				
	M	rets F	<b>う</b> 。		5		

WETLAND DETERMINATION DATA FORM - East	ern Mountains and Piedmont Region
Project/Site: Hepping to Rhodes City/County: Ja	10 Sampling Date: 719 2017
Applicant/Owner:	State: OH Sampling Point: W009
	ownship, Range: LICK TWP.
	oncave, convex, none): CMVCX Slope (%) 51
Subregion (LRR or MLRA): USA Lat: 39.07995458	Long: -82,56470673 Datum: NAD 83
Soil Map Unit Name: ChD-Clymer Loam, 15 to 25% Slapes	NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year?	No (If no, explain in Remarks)
Are Vegetation $\underline{no}$ , Soil $\underline{no}$ , or Hydrology $\underline{no}$ significantly disturbed?	Are "Normal Circumstances" present? Yes No
Are Vegetation <u>no</u> , Soil <u>no</u> , or Hydrology <u>no</u> naturally problematic?	(If needed, explain any answers in Remarks,)
SUMMARY OF FINDINGS - Attach site map showing sampling p	oint locations, transects, important features, etc.
No. 1 de la fin Vandation Brancotto	
Hydrophytic Vegetation Present? Yes No	
Hydric Soil Present? Yes No V Is the Sample	d Area within a Wetland? Yes No
Wetland Hydrology Present? Yes No	
Data point taken in maintained transmission	m Row.
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 Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3) Oxidized Rhizospheres on Living Roots	(C3) Moss Trim Lines (B16)
Water Marks (B1) Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2) Recent Iron Reduction in Tilled Soils (C6	Crayfish Burrows (C8)
Drift Deposits (B3)  Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9) Aquatic Fauna (B13)	Microtopographic Relief (D4)  FAC-Neutral Test (D5)
	17.0 Notation 10.0 (50)
Field Observations:	
Surface Water Present? Yes No Depth (inches):	-
Water Table Present? Yes No Depth (inches):	
Saturation Present? Yes No Depth (inches): (includes capillary fringe)	Wetland Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available	e:
Wetland hydrology is not present.	

Sampling Point W009	UPL

Tree Stratum (Plot size:	) % Cover	Species? Status	Dominiance Test Worksheet.
1. none			Number of Dominant Species That Are DBL, FACW, or FAC: (A)
2			_
3			Total Number of Dominant Species Across All Strata: (B)
4.			·
			Percent of Dominant Species That Are OBL. FACW, or FAC: (A/B)
5			URL TACK, OT AC.
6,	-		Prevalence Index worksheet:
	0	= Total Cover	Total % Cover of: Multiply by:
VC.			OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'	1 6	VI Facti	FACW species x 2 =
Liriodendron tulipitera	5	Facu	FAC species x 3 =
2 tagus granditolia 3 Lindurd benzoin	70	Fac	FACU species x 4 = UPL species x 5 =
4.		7	Column Totals: (A) (B)
5,			
6.			Prevalence Index = B/A =
7.			
8			Hydrophytic Vegetation Indicators:
9.			1 - Rapid Test for Hydrophylic Vegetation 2 - Dominance Test is >50%
10.	20	= Total Cover	3 - Prevalence Index is ≤3.0 <sup>1</sup>
-1			4 - Morphological Adaptations (Provide supporting
Herb Stratum (Plot size: 5	)		data in Remarks or on a separate sheet)
10 none			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2			1 Indicators of hydric soil and wetland hydrology must
3			be present, unless disturbed or problematic.
5			Definitions of Vegetation Strata:
6			
7			Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in
8			diameter.
9			
10,			Sapling/Shrub- Woody plants, excluding vines, less than 3 in.
12.			DBH and greater than or equal to 3,28 ft (1 m) tall.
	0	= Total Cover	
201			Herb - All herbaceous (non-woody) plants, regardless
Woody Vine Stratum (Plot size: 20	15	V Fac	of size, and woody plants less than 3.28 ft tall
Pricthenocissus aumanetolia	15	Facili	
3		1.11324	Woody Vines - All woody vines greater than 3.28 ft in
4			height.
5			11
6	20	- T. L. I.O.	
		= Total Cover	
			Hydrophytic
			Vegetation
			Present? Yes No
Variation Damonka, /laskeds about a market beauty	o obcet\		
Vegetation Remarks: (Include photo numbers here or on a separat			
Upland veg is domina	int.		
	-		

-UPL

Depth	Matrix			Redox Featur				
	r (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-16 104R	413 1	00					Silt	
L								
				·	-			
				X	-			
		= 0=		===				
				-				
* *								
		\ <del>-</del>						
Cannontration D			etris MC=Meeked I	Cand Casina			2) and line Dispers	1.8. 1.4.1.1.3.
e: C=concentration, D	=Depletion, Rivi	=Reduced IVI	atrix, MS=Masked (	Sand Grains.			<sup>2</sup> Location: PL=Pore	
ic Soil Indicators:							Indicators for Probl	ematic Hydric Soils <sup>3</sup> :
Histosol (A1)		-	Dark Surface (S	7)			2 cm Muck (A10	) (MLRA 147)
Histic Epipedon (A2)			Polyvalue Below	Surface (S8)	(MLRA 147,	, 148)	Coast Prairie R	edox (A16) (MLRA 147, 148)
Black Histic (A3)			Thin Dark Surface	ce (S9) <b>(MLR</b> /	A 147, 148)		Piedmont Flood	plain Soils (F19)
Hydrogen Sulfide (A4)	)		Loamy Gleyed N	fatrix (F2)			(MLRA 136, 14	7)
Stratified Layers (A5)			_ Depleted Matrix	(F3)			Very Shallow D	ark Surface (TF12)
cm Muck (A10) (LRI	R N)	-	Redox Dark Sur	face (F6)			Other (Explain i	n Remarks)
Depleted Below Dark	Surface (A11)		_ Depleted Dark S	urface (F7)				
Thick Dark Surface (A	•	-	_ Redox Depressi					
Sandy Mucky Mineral	(S1) (LRR N,	·	Iron-Manganese			LRA 136)		
MLRA 147,148)	(0.1)	· ·	Umbric Surface			40)		
Sandy Gleyed Matrix (	54)	-	Piedmont Flood					
Sandy Redox (S5)		_	Red Parent Mate	erial (F21) (ML	.RA 127, 147	7)		
Stripped Matrix (S6)								
Indicators of hydrophy	ytic vegetation a	nd wetland h	ydrology must be p	resent, unless	disturbed o	r problemat	ic.	
rictive Layer (if obs	erved):							
Гуре:						Hydri	C	,
Depth (inches):						Soil Pres	ent? Yes	No
		-						
Description Remark	(S:	1, 0	ils are r	nt nve	cent			
	Hydr	(0.30	112 010 1	ioi Pie		•		
	4							

WETLAND DETERMINATION DATA FORM - Eastern Mount	ains and Piedmont Region
Project/Site:	Sampling Date: 711912017
Applicant/Owner: Sta	ate: OH Sampling Point: W010
Investigator(s): Section, Township, Range	ge: COal Twp.
Landform (hilslope, terrace, etc.): Local relief (concave, conve	A 274 day
	g: -82,5506928 Datum: NAD 83
Soil Map Unit Name: Nya 3D2 Wyatt Sity Clay loam, 12 to 187 Slopes	NWI classification:
	No (If no, explain in Remarks)
	Normal Circumstances" present? Yes No
Are Vegetation No., Soil NO., or Hydrology Northydrology and naturally problematic? (If nee	eded, explain any answers in Remarks,)
Somman'r Or rindings - Attach site map snowing sampling point locatio	ins, transects, important reatures, etc.
Hydrophytic Vegetation Present? Yes No	
Hydric Soil Present? Yes No Is the Sampled Area within	n a Wetland? Yes No
Wetland Hydrology Present? Yes No	
Data point was taken in maintained transmi	)2
Data point was taken in maintained transmi	ssim Row.
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 Aquatic Plants (B14)	. Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)  Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
✓ Saturation (A3) ✓ Oxidized Rhizospheres on Living Roots (C3)	Moss Trim Lines (B16)
Water Marks (B1)  Presence of Reduced Iron (C4)  Sediment Deposits (P3)  Present Iron Paduation in Tilled Soils (C6)	Dry-Season Water Table (C2) Crayfish Burrows (C8)
Sediment Deposits (B2)  Drift Deposits (B3)  Recent Iron Reduction in Tilled Soils (C6)  Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)  Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Surface Water Present? Yes √ No Depth (inches): .5"	
Water Table Present? Yes V No Depth (inches):	=
	d Hydrology Present? Yes No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	
Wetland hydrology Indicators are AIRA3,	C3, D2, and D5.
	'

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Tree Stratum (Plot size: _30'	Absolute ) % Cover	Species? Status	Dominance Test worksheet:	
1. NMC	) 78 Cover	Species! Status	Number of Dominant Species That Are OBL, FACW, or FAC:	<b>2</b> (A)
···			OBE, FACTO, OF FAC.	(^)
2			Total Number of Dominant Species	2
3			Across All Strata:	(B)
4			Percent of Dominant Species That Are	1.00
5			OBL, FACW, or FAC:	(A/B)
6.				
7			Prevalence Index worksheet:	
	_0	= Total Cover	Total % Cover of:	Multiply by:
151			OBL species x 1 =	
Sepling/Shrub Stratum  1. NSNC  (Plot size: 15	)		FACW species x 2 =	
			FAC species x 3 = FACU species x 4 =	
2,			UPL species x 5 =	
4			Column Totals: (A)	
5,				
6,			Prevalence Index = B/A =	
7,5				/
8,			Hydrophytic Vegetation Indicators:	
9	_3 53		1 - Rapid Test for Hydroph	
10,		T. 10	2 - Dominance Test is >50	
		= Total Cover	3 - Prevalence Index is ≤3 4 - Morphological Adaptati	
Herb Stratum ( Plot size: 5'	)		data in Remarks or on a	
1. Eupatorium perfoliatum	<b>一</b> ′ 5	N Obl	Problematic Hydrophytic V	
2 JUNCUS EFFUSUS 1	15	N Fach		
3 Lecrosia orytoldes	35	1 00	1 Indicators of hydric soil and wetland hydrol	ogy must
4. Carex lurida	25	100	be present, unless disturbed or problematic	
5. Impatiens capensis	_ 15	N Fach	Definitions of Vegetation Strata:	
6 Scirpus cypchinus	5_	N Fach		
7-			Tree - Woody plants, excluding vines, 3	in. (7.6 cm) or more in
8			diameter	
9				
10			Sapling/Shrub- Woody plants, excluding	and the 2 in
11	<del></del>		DBH and greater than or equal to 3.28 f	•
	100	= Total Cover		
401			Herb - All herbaceous (non-woody) plar	nts, regardless
Woody Vine Stratum (Plot size: 30'	)		öf size, and woody plants less than 3.28	3 ft tall
1 none	<del></del>		>	
2			Woody Vines - All woody vines greater	than 3.28 ft in
3.			height.	triair 5.25 it iii
5.			neight.	
6				
		= Total Cover		
			Hydrophytic	
			Vegetation Present? Yes	
			Present? Yes	No
Vegetation Remarks: (Include photo numbers here or on a sepa	rate sheet)		ol-	
vegetation remarks. (include photo humbers here of on a sepa	liate sheet).	1	in diminance to	Stand
Wegetation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here or on a separation Remarks: (Include photo numbers here)	mant -	passes t	HC MALLINIACO I	-si ww
J. 10 Clark	4 * · · · · · · · · · · · · · · · · · ·	Va ni d		
		impla to	CST (	

Sampling Point: W010 (PEM)

Soil Profile Description: (Des	scribe to the depth r	needed to document ti	he indicator o	or confirm t	he absence	of indicators.)	
Depth	Matrix		Redox Featur	es			
(inches) Color (m	oist) %	Color (majst)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-16 104R4	12 75	104R46	25	<u> </u>	PL	Claylodm	
li l	! 	·				Ny j	
		× P					:
i-				-		-	
·		D:	-				
-					-		
* **		X <del></del>	1				
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<del></del>		F—————————————————————————————————————					
· · · · · · · · · · · · · · · · · · ·		5 <del></del>	-		i <del></del> i		
<del></del>		··	-	,			
		(i	-				
<sup>1</sup> Type: C=concentration, D=De	epletion, RM=Reduce	d Matrix, MS=Masked	Sand Grains.			<sup>2</sup> Location: PL=Pore Li	ning, M=Matrix.
Hydric Soil Indicators:						Indicators for Probler	natic Hydric Soils³:
Histosol (A1)		Dark Surface (S	7)			2 cm Muck (A10)	(MLRA 147)
Histic Epipedon (A2)		Polyvalue Belov	-	(MLRA 14)	7. 148)		lox (A16) (MLRA 147, 148)
Black Histic (A3)		Thin Dark Surfa				Piedmont Floodpl	
Hydrogen Sulfide (A4)		Loamy Gleyed N		. ,		(MLRA 136, 147)	
Stratified Layers (A5)		✓ Depleted Matrix				Very Shallow Dar	
2 cm Muck (A10) (LRR N	)	Redox Dark Sur				Other (Explain in	
Depleted Below Dark Surf	face (A11)	Depleted Dark S	Surface (F7)				
Thick Dark Surface (A12)		Redox Depressi	ons (F8)				
Sandy Mucky Mineral (S1	) (LRR N,	Iron-Manganese			MLRA 136)		
MLRA 147,148)		Umbric Surface					
Sandy Gleyed Matrix (S4)		Piedmont Flood					
Sandy Redox (S5) Stripped Matrix (S6)		Red Parent Mate	eriai (FZ1) (Mi	LRA 127, 14	+7)		
Stripped Matrix (30)							
<sup>3</sup> Indicators of hydrophytic	vegetation and wetla	nd hydrology must be p	resent, unless	s disturbed	or problemat	tic.	
Restrictive Layer (if observ	ed):						
Туре:					Hydri	С	,
Depth (inches):					Soil Pres	sent? Yes _	√ No
1,5							
Soil Description Remarks:							
	Mects F	-3.	- 3				
		- <del>-</del>					
						20	
		130	9				
				20.			

WETLAND DETERMINATION DATA FORM - Eastern Mo	ountains and Piedmont Region
Project/Site: Happy to Kharles City/County: Jacks	m Co Sampling Date: 7/19/2017
Applicant/Owner:	State: OH Sampling Point: W010 - UPL
Investigator(s): Section, Township	
	convex, none): COVCX Slope (%) 51/
Subregion (LRR or MLRA): L8R Lat: 39, 08041188	Long: -82,55059478 Datum: NAD 83
Soil Map Unit Name: Wya 3D2 - Wyatt Silty clay loam, 12 to 18%, Slo	NWI classification: N/A
Are climatic/hydrologic conditions on the site typical for this time of year? Yes	No (If no, explain in Remarks)
.00	Are "Normal Circumstances" present? Yes \ No
- A: W	(If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS - Attach site map showing sampling point to	cations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes No	
Hydric Soil Present? Yes No V Is the Sampled Area	within a Wetland? Yes No
Wetland Hydrology Present? Yes No	
Remarks:	5.1
Upland data point for woro.	
	Cia- DNI.
Data point was taken in maintained transmi	22(AN LOW.
tally points of the second	
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 Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2)  Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
Saturation (A3)  Oxidized Rhizospheres on Living Roots (C3)	Moss Trim Lines (B16)
Water Marks (B1)  Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
Sediment Deposits (B2)  Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
Drift Deposits (B3)  Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)  Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
Water-Stained Leaves (B9)	Microtopographic Relief (D4)
Aquatic Fauna (B13)	FAC-Neutral Test (D5)
Field Observations:	
Water Table Present? Yes No Depth (inches):	
	etland Hydrology Present? Yes No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	
Wetland hydrology is not present.	
, ,	

-UPL

ree Stratum (Plot size: 301	Absolute	Dominant Indicator	Dominance Test worksheet:
	) <u>% Cover</u>	Species? Status	Number of Dominant Species That Are
none			OBL_FACW, or FAC:
		v <u>———</u>	2
1.44			Total Number of Dominant Species Across All Strata: (B)
		-	
			Percent of Dominant Species That Are
			OBL, FACW, or FAC:
			Prevalence Index worksheet:
		= Total Cover	Total % Cover of: Multiply by:
ling/Shrub Stratum (Plot size: 15	,		OBL species x 1 =
	)		FACW species x 2 =
none			FAC species
			UPL species x 5 =
· · · · · · · · · · · · · · · · · · ·			Column Totals: (A) (B
			Committee (1)
			Prevalence Index = B/A =
		8 <del></del>	Trovalence index 5//
		· · · · · · · · · · · · · · · · · · ·	Hydrophytic Vegetation Indicators:
			1 - Rapid Test for Hydrophytic Vegetation
			2 - Dominance Test is >50%
	0	= Total Cover	3 - Prevalence Index is ≤3.01
			4 - Morphological Adaptations (Provide supporting
Stratum (Plot size: 5'	)		data in Remarks or on a separate sheet)
Dactylis glomenata		Hacu	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Tritislium pratense,	45	FacU	2
Taraxacum officinale		N Facu	Indicators of hydric soil and wetland hydrology must
			be present, unless disturbed or problematic.
			Definitions of Vegetation Strata:
		S = 0	
			Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in
*			diameter
		X <del></del>	Sapling/Shrub- Woody plants, excluding vines, less than 3 in DBH and greater than or equal to 3,28 ft (1 m) tall.
	90	= Total Cover	DBH and greater than of equal to 3,20 ft (1 fill) tall.
		- rotal Gover	
			Herb - All herbaceous (non-woody) plants, regardless
dy Vine Stratum (Plot size:	)		of size, and woody plants less than 3.28 ft tall.
none	/		
110.10			
			Woody Vines - All woody vines greater than 3,28 ft in
			height.
	0	= Total Cover	
			Hydrophytic
			Vegetation
			Present? Yes No V
egetation Remarks: (Include photo numbers here or on a sep	arate sheet).		
	1		
Upland veg is domina	nt.		
chain in			
<b>~</b>			

Soil Profile De	scription: (Describe to	the depth ne	eded to document t	he indicator	or confirm th	ie absence	of indicators.)			
Depth	Malrix	=======================================		Redox Featu	res					
(inches)	Color (mojst)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks		
0-6	104R 412	100		· · · · · · · · ·	<del></del>		Silloum			
10-16	104R43	100		-0.0			Sittloam			
								λχ)		
-				-1/2						
-	-			· · · · · · · · · · · · · · · · · · ·						
-	( <del>-</del>				====0		<del></del>			
		<del>2</del> 20		: 12	8					
		277					75 TS 87			
	-									
-	· ·	-		-	====		=======================================			
<sup>1</sup> Type: C=conc	entration, D=Depletion,	RM=Reduced	Matrix, MS=Masked	Sand Grains.			<sup>2</sup> Location: PL=Pore	Lining, M=Matrix.		
Hydric Soil Ind	icators:						Indicators for Prob	lematic Hydric Soils <sup>3</sup> :		
Histosol (A	\1\		Dark Surface (S	27)			2 cm Muck (A1	0) (MLRA 147)		
Histic Epip	· ·	29	Polyvalue Belov	•	(MLRA 147	. 148)	-	ledox (A16) (MLRA 147, 148)		
Black Histi		a	Thin Dark Surfa			, ,	Piedmont Floodplain Soils (F19)			
-	Sulfide (A4)	35	Loamy Gleyed I				(MLRA 136, 147)  Very Shallow Dark Surface (TF12)			
Stratified L	ayers (A5)	-	Depleted Matrix	(F3)						
2 cm Muck	(A10) (LRR N)	2	Redox Dark Su	rface (F6)			Other (Explain	in Remarks)		
Depleted E	Below Dark Surface (A1	1) -	Depleted Dark	Surface (F7)						
200	Surface (A12)		Redox Depress							
	cky Mineral (S1) (LRR I	٧,	Iron-Manganese	,		LRA 136)				
MLRA 147		9	Umbric Surface			40\				
Sandy Rec	yed Matrix (S4)	8	Piedmont Flood Red Parent Mat							
Stripped M			Red Farelit Wal	terial (i 2 i) (iv	ILIXA 127, 14	')				
-										
<sup>3</sup> Indicators	of hydrophytic vegetati	on and wetland	d hydrology must be p	present, unles	s disturbed o	r problemat	ic.	-		
Restrictive La	yer (if observed):									
Type:						Hydri	С	,		
Depth (incl	nes):					Soil Pres	ent? Yes	No		
Soil Description										
	Lhee	VIV S.	ils not pr							
	וויןט	1110 30	112 LIDI DA	cseni.				-		

# APPENDIX C Primary Headwater Habitat Evaluation (HHEI) Data Forms



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SITE NUMBER RIVER BASIN SCIOTS PIVEY DRAINAGE AREA (mi²)	228co m
LENGTH OF STREAM REACH (#) 200 LAT. 31.084410 LONG-82.1.2205 RIVER CODE RIVER MILE  DATE 111201 SCORER KLV COMMENTS SOH-KLV-001 (PTR)	7.6034 mi
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for In	structions
STREAM CHANNEL MONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RIMODIFICATIONS:	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE BLDR SLABS [16 pts] BOULDER (>256 mm) [16 pts] BEDROCK [16 pt] BEDROCK [16 pt] COBBLE (65-256 mm) [12 pts] GRAVEL (2-64 mm) [9 pts] SAND (<2 mm) [6 pts] ARTIFICIAL [3 pts]	HHEI Metric Points Substrate Max = 40
Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock O SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  TOTAL NUMBER OF SUBSTRATE TYPES:	A + B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):    > 30 centimeters [20 pts]	Pool Depth Max = 30
COMMENTSMAXIMUM POOL DEPTH (centimeters):	parameter 1
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	-
> 4.0 meters (> 13') [30 pts]       > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]          > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]       ≤ 1.0 m (≤ 3' 3") [5 pts]          > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	Bankfull Width Max=30
□ > 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]	Width
□ > 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts] □ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] □ 2 1.0 m (≤ 3" 3") [5 pts]	Width
> 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]   ≤ 1.0 m (≤ 3' 3") [5 pts]     > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]   2'     COMMENTS	Width Max=30
> 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts]	Width Max=30
> 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	Width Max=30

QHEI PERFORMED? - LJ Yes ZYNO QHEI Score_	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	0:1.5
WWH Name: HOYSE CYCE	Distance from Evaluated Stream UMIUS
	Distance from Evaluated Stream
J EWH Name:	Distance from Evaluated Stream
11111.000	E ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
	NRCS Soil Map Page: NRCS Soil Map Stream Order
county: Jackson Co. To	ownship / City: Coarlo UCK 1000
MISCELLANEOUS	
ase Flow Conditions? (Y/N): Date of last precipitation:	1[10]2017 Quantity: , 25"
hotograph Information:	
(levated Turbidity? (Y/N): N Canopy (% open): 80	0'/
	e lab sample no. or id. and attach results) Lab Number:
ield Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
the sampling reach representative of the stream (Y/N)	not, please explain:
The sampling reason operations of the saccari (111)	not, produce suprain.
20-0-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	
dditional comments/description of pollution impacts:	
BIOTIC EVALUATION	
erformed? (Y/N): (If Yes, Record all observations. Voi ID number. Include appropriate field	ucher collections optional. NOTE: all voucher samples must be labeled with the site d data sheets from the Primary Headwater Habitat Assessment Manual)  ers Observed? (Y/N) \( \frac{N}{2} \) Voucher? (Y/N) \( \frac{N}{2} \) Voucher? (Y/N) \( \frac{N}{2} \)
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SOO3 SITE NUMBER RIVER BASIN SCIOTO RIVEY DRAINAGE AREA (mir)	1.0lesq.mi
LENGTH OF STREAM REACH (1) 200 LAT39.083315 LONG 82.60456 RIVER CODE RIVER MILE DATE 7 18 2017 SCORER KLV COMMENTS SOH-KLV-003 (EPH)	-
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	tructions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RE	
MODIFICATIONS:	COVERY
THE RESIDENCE OF THE PARTY OF T	
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.	HHEI
TYPE PERCENT TYPE PERCENT	Metric Points
BOULDER (>256 mm) [16 pts] LEAF PACKAWOODY DEBRIS [3 pts]	
BEDROCK [16 pt] FINE DETRITUS [3 pts] CLAY or HARDPAN [0 pt]	Substrate Max = 40
GRAVEL (2-64 mm) [9 pts] 30 MUCK [0 pts]	15
□ □ SAND (<2 mm) [6 pts] □ □ ARTIFICIAL [3 pts]	
Total of Percentages of Bidr Stabs, Boulder, Cobble, Bedrock (A)  2	A+B
SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:	
<ol> <li>Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):</li> </ol>	Pool Depth
> 30 centimeters (20 pts) > 5 cm - 10 cm (15 pts)	Max = 30
> 10 - 22.5 cm [25 pts] No water or Moist Channel [6 pts]	5
COMMENTSMAXIMUM POOL DEPTH (centimeters):	
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):	Bankfull
> 4.0 meters (> 13') [30 pts]	Width _Max=30
□ >1.5 m -3.0 m (> 4'8"-9'7") [20 [[4]]	
COMMENTSAVERAGE BANKFULL WIDTH (meters)	
NAFEWOR BYUKE AND ILL (MISTELS)	
	- mened
This Information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆	
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This Information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream RIPARIAN WIDTH FLOODPLAIN QUALITY  LR (Per Bank) L R (Most Predominant per Bank) L R  Wide >10m	_
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QHEI PERFORMED? - Tyes ZIN	
	o QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S	Distance from Evaluated Stream <u>0.80 miles</u>
	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
. 11 1	S, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
1 1 0	NRCS Soil Map Page: NRCS Soil Map Stream Order
ounty: Jackson Co.	Township / City: LOOU IW.
MISCELLANEOUS	
ase Flow Conditions? (Y/N): Date of le	ast precipitation: 7102017 Quantity: 25"
hotograph Information:	
levated Turbidity? (Y/N): Canopy	y (% open): 50 /-
/ere samples collected for water chemistry? (Y/I	N): Note lab sample no. or id. and attach results) Lab Number:
ield Measures: Temp (°C) Dissolve	d Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
the sampling reach representative of the stream	m (Y/N) If not, please explain:
ino sampling readil top escribility of the steam	
dditional comments/description of pollution impa	acts:
erformed? (Y/N): (If Yes, Record all ID number. Includ	observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site te appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
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### **ChieEPA**

### Primary Headwater Habitat Evaluation Form

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	RIVER BASIN SCIOTO PIVOY DRAINAGE AREA (mi²) 0.0  LAT 31.083310 LONG 82.600449 RIVER CODE RIVER MILE  COMMENTS SOH-KLV-004 (INT)  TIM - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instruction ATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVER	ions
SUBSTRATE (Estimate percent of ever (Max of 40). Add total number of significant controls.	PERCENT  TYPE  SILT [3 pt]  LEAF PACKWOODY DEBRIS [3 pts]  D  FINE DETRITUS [3 pts]  CLAY OF HARDPAN [0 pt]  MUCK [0 pts]  ARTIFICIAL [3 pts]	HEI letric oints ubstrate ax = 40
	NEW AND ADDRESS OF THE PARTY OF	ol Depth ax = 30
3. BANK FULL WIDTH (Measured as the > 4.0 meters (> 13') [30 pts] > 3.0 m - 4.0 m (> 9' 7' - 13') [25 pts] > 1.5 m - 3.0 m (> 4' 8' - 9' 7') [20 pts] COMMENTS	average of 3-4 measurements) (Check ONLY one box):    3	ankfull Midth ax=30
RIPARIAN ZONE AND FLOODE RIPARIAN WIDTH	This information must also be completed  PLAIN QUALITY \$NOTE: River Left (L) and Right (R) as looking downstream\$  FLOODPLAIN QUALITY	
UR (Per Bank)  Wide >10m  Moderate 5-10m  Narrow ≪m	L R (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Shrub or Old Field  Residential, Park, New Field  L R  Conservation Tillage  Urban or Industrial  Open Pasture, Row Crop	
FLOW REGIME (At Time of Eval. Stream Flowing Subsurface flow with isolated pool	Fenced Pasture	
SINUOSITY (Number of bends por None 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5	Check ONLY one box):   1.0	

QHEI PERFORMED? - Tyes No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	Distance from Evaluated Stream 0.31 miles
Z WWH Name: Sugar Kur	Distance from Evaluated Stream
	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIR	RE WATERSHED AREA CLEARLY MARK THE SITE LOCATION
1 1.112/20 21	
your date in the interest of t	IRCS Soil Map Page: NRCS Soil Map Stream Order
county: Jackson Co. Township	o/city. ('aa) lup.
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	)[2017 Quantity: .25"
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 40/	
	ample no or id and attach recuite) I sh Number
Nere samples collected for water chemistry? (Y/N): (Note lab sa	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
s the sampling reach representative of the stream (Y/N)	ease explain:
BIOTIC EVALUATION	
Performed? (Y/N): (If Yes, Record all observations. Voucher of ID number. Include appropriate field data stricts of Control of Contr	Macroinvertebrates Observed? (Y/N) Voucher? (Y/N)
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June 20, 2008 Revision

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SITE NAMERLOCATION AFF - HE PORCE TO RINGES  SITE NUMBER RIVER BASIN SCIOTO RIVER DRAINAGE AREA (MÍ) D.O.	Sa mi
LENGTH OF STREAM REACH (#) 130 LAT 39.0833 HLONG 82.00389 RIVER CODE RIVER MILE DATE 7 18 2017 SCORER KLV COMMENTS SOH-KLV-005 (INT)	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructi	ions
STREAM CHANNEL NONE / NATURAL CHANNEL RECOVERED RECOVERING RECENT OR NO RECOVER MODIFICATIONS:	RY
TYPE	HHEI Metric Joints Jubstrate Jax = 40
	ol Depth ax = 30
> 4.0 meters (> 13') [30 pts] > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]	ankfult Width lax=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream and the complete description of th	
RIPARIAN WIDTH  L. R., (Per Bank)  L. R., (Most Predominant per Bank)  L. R.	
L R (Per Bank) L R (Most Predominant per Bank) L R  Wide >10m	
Moderate 5-10m Immature Forest, Shrub or Old Urban or Industrial	
Nerrow <5m Residential Park New Field Open Pasture, Row	
None	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing	
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing	

	res, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	Distance from Evaluated Stream 0.31 mileS
☐ CWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATE	
	oil Map Page: NRCS Soil Map Stream Order
	A 1 —
County:	Coal IMP.
MISCELLANEOUS	25.4
Base Flow Conditions? (Y/N): Date of last precipitation:	17 Quantity: 25"
thetegraph Information	
Bevated Turbidity? (Y/N): N Canopy (% open): 15/	
Vere samples collected for water chemistry? (Y/N): (Note lab sample no	o. or id. and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH	
s the sampling reach representative of the stream (Y/N) If not, please exp	Nein-
the sampling reach representative of the stream (T/N) If not, please exp	38B1
BIOTIC EVALUATION	
erformed? (Y/N): (If Yes, Record all observations. Voucher collections ID number. Include appropriate field data sheets from the collections of the collection	vertebrates Observed? (Y/N) Voucher? (Y/N)
Performed? (Y/N): (If Yes, Record all observations. Voucher collections ID number. Include appropriate field data sheets from the property of the prope	m the Primary Headwater Habitat Assessment Manual)  (Y/N) Voucher? (Y/N) Voucher? (Y/N)  vertebrates Observed? (Y/N) Voucher? (Y/N)  REAM REACH (This must be completed):
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Performed? (Y/N): (If Yes, Record all observations. Voucher collections ID number. Include appropriate field data sheets from the property of the prop	m the Primary Headwater Habitat Assessment Manual)  (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)  REAM REACH (This must be completed):
Performed? (Y/N): (If Yes, Record all observations. Voucher collections ID number. Include appropriate field data sheets from the property of the prope	m the Primary Headwater Habitat Assessment Manual)  (Y/N) Voucher? (Y/N) Voucher? (Y/N)  vertebrates Observed? (Y/N) Voucher? (Y/N)  REAM REACH (This must be completed):
Performed? (Y/N): (If Yes, Record all observations. Voucher collections ID number. Include appropriate field data sheets from the collections of the collecti	m the Primary Headwater Habitat Assessment Manual)  (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)  REAM REACH (This must be completed):
Performed? (Y/N): (If Yes, Record all observations. Voucher collections ID number. Include appropriate field data sheets from the property of the prope	m the Primary Headwater Habitat Assessment Manual)  (Y/N) Voucher? (Y/N) Voucher? (Y/N)  Voucher? (Y/N) Voucher? (Y/N)  REAM REACH (This must be completed):
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Performed? (Y/N): (If Yes, Record all observations. Voucher collections ID number. Include appropriate field data sheets from the property of the prop	m the Primary Headwater Habitat Assessment Manual)  (Y/N) Voucher? (Y/N) Voucher? (Y/N)  Voucher? (Y/N) Voucher? (Y/N)  REAM REACH (This must be completed):
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Performed? (Y/N):	m the Primary Headwater Habitat Assessment Manual)  (Y/N) Voucher? (Y/N) Voucher? (Y/N)  vertebrates Observed? (Y/N) Voucher? (Y/N)  REAM REACH (This must be completed):

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SITE NAMELOCATION A EP-HC SOUL SITE NUMBE LENGTH OF STREAM REACH (A) TO DATE 1/8/2017 SCORER KL	B LAT.39.0	river <u>basin</u> Scioto Ri <u>82945</u> long. <u>82.59893</u> 7 ri ommentsSOH-KLV-	OOG CEPH	RIVER MILE	
NOTE: Complete All Items On This STREAM CHANNEL MODIFICATIONS:	COLUMN CONTRACTOR	ANNEL DRECOVERED DRE			
	PERCENT  10  25  20  10	Substrate present. Check ONLY two te types found (Max of 8). Final metri TYPE SILT [3 pt] LEAF PACKANOOD FINE DETRITUS () CLAY OF HARDAN CLAY OF HARDAN ARTIFICIAL (3 pts)  (A) 12 PES: TOTAL NUMB	c score is sum of PY DEBRIS (3 pls) pts)	PERCENT  (B)  5	HHEI Metric Points Substrate Max = 40
2. Maximum Pool Depth (Measure the evaluation, Avoid plunge pools from > 30 centimeters [20 pts] > 22.5 - 30 on [30 pts] > 10 - 22.5 cm [25 pts]		>5 cm - 10 cm [15   <6 cm [5 pts]   NO WATER OR M	one box): pls]	0 pts)	Pool Depth Max = 30
3. BANK FULL WIDTH (Measured as >4.0 meters (> 13) [30 pts]   >5.0 m -4.0 m (>9.7 - 13) [25 pts]   >1.5 m -3.0 m (>4.8 -9.7) [20 pts COMMENTS		>1.0m - 1.5m (>3 51.0m (>3 37)[6		41	Bankfull Width Max=30
RIPARIAN ZONE AND FLOR RIPARIAN WIDTH  I. R. (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m	DEPLAIN QUAL PLOODE L R D D SE S	Information must also be completed.  LITY SENOTE: River Left (L) and place of the complete co	Right (R) as look	cing downstream r  conservation Tillage  from or Industrial  Open Pasture, Row Crop	
	pools (Intersities	Moist Chan Dry channe  It) (Check ONLY one	nel, isolated pook I, no water (Ephe		
STREAM GRADIENT ESTIMATE  Flat (0.5 10/100 ft)  Flat to Moderate	1.0 1.5	2.0 2.5 Prate (2 k/100 ft)	to Severe	3.0 >3 Severe (10 tt/10	o <del>n)</del>

OHE PERFORMED? - Types And Compeled OHE Form)  DOWNSTREAM DESIGNATED USE(S)  Dostance from Evaluated Stream  Distance from Evaluated Stream  MAPPING: ATTACH COPIES OF MAPS, INCLIDING THE ENTIRE WATERSHED AREA CLEARLY MARK THE SITE LOCATION  WISCELLANEOUS  Base Flow Conditions? (V/N): Dete of last precipitation: Township / City Cool Type  Miscellaneous  Base Flow Conditions? (V/N): Dete of last precipitation: Detection of John Stream Croter  Township / City Cool Type  Miscellaneous  Base Flow Conditions? (V/N): Detection of John Stream Croter  Township / City Cool Type  Were samples collected for water chemistry? (V/N): No. (Note lab sample no. or id. and attach results) Lab Number:  Fleid Messures: Temp (C) Dissolved Oxygen (mph) pH (S.U.) Conductivity (umhos/cm)  Is the sampling reach representative of the stream (V/N): If not, please explain:  Biotic Evaluation  Workers (V/N): No. (If Yes, Record all observations, Voucher codections optional. NOTE: all voucher samples must be labeled with the subtraction of the stream (V/N): No. (If Yes, Record all observations options optional. NOTE: all voucher samples must be labeled with the subtraction of the stream (V/N): No. (If Yes, Record all observations options optional. NOTE: all voucher samples must be labeled with the subtractions options of the stream (Minus)  Floor Tapolose Observed? (V/N): No. (Voucher? (V/N): No. (No. (Voucher? (V/N)): No. (Voucher? (V/N): No. (V/N): No. (Voucher? (V/N): No. (V/N): No. (V/N): No. (V/N):	DOWNSTREAM DESIGNATED USE(S)    Distance from Evaluated Stream
Distance from Evaluated Stream (	Distance from Evaluated Stream    CWH Name:   Distance from Evaluated Stream   Distance from Evalua
□ CWH Name: □ Distance from Evaluated Stream □ Distance from Evaluate Stream □ Distance from Evaluation □ D	CWH Name:   Distance from Evaluated Stream   Distance from Evalu
Distance from Evaluated Stream  MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  USGS Quadrangle Name: NRCS Soil Map Pape: NRCS Soil Map Stream Order  County: NRCS Soil Map Pape: NRCS Soil Map Stream Order  Township / City. County  MISCELLANEOUS  Base Flow Conditions? (Y/N): Dete of last precipitation: 100 201 Quantity. 35   Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or kl. and attach results) Lab Number:  Fleid Measures: Temp (*C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)  Is the sampling reach representative of the stream (Y/N). If not, please explain:  ### MOTIC EVALUATION  Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labrated with the ellip number: Include appropriate faild data sheets from the Primary Headwater Habitat Assessment Manual)  Flish Observed? (Y/N). N Voucher? (Y/N) N Salamanders Observed? (Y/N) N voucher? (Y/N) N Oucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N Include Important landmarks and other features of Interest for site evaluation and anarrative description of the stream's location  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Include Important landmarks and other features of Interest for site evaluation and anarrative description of the stream's location	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  USGS Quadrangle Name:	MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order
USGS Quadrangle Name: NellStron, OH NRCS Soil Map Page: NRCS Soil Map Stream Order County: Jackson Co. Township / City. Coal Twy  MISCELLANEOUS  Base Flow Conditions? (Y/N): Date of last precipitation: 7 10 20 Cuantity. 35  Photograph information: Plevated Turbidity? (Y/N): Canopy (% open): 50  Were samples collected for water chemistry? (Y/N): Note lab sample no. or id. and attach results) Lab Number: Fleid Measures: Temp (*C). Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)  Is the sampling reach representative of the stream (Y/N). If not, please explain: Conductivity (umhos/cm)  BHOTIC EVALUATION  Performed? (Y/N): Note: Recent all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the a 1D number. Include appropriate field data sheets from the Primary Headwater Habibut Assessment Manual)  Fish Observed? (Y/N): Noucher? (Y/N). Salamanders Observed? (Y/N). Noucher? (Y/N). Noucher? (Y/N). Noucher? (Y/N). Aquatic Macroinvertebrates Observed? (Y/N). Noucher? (Y/N). Noucher? (Y/N). Aquatic Macroinvertebrates Observed? (Y/N). Noucher? (Y/N	USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order County: NRCS Soil Map Page: NRCS Soil Map Stream Order County: NRCS Soil Map Page: NRCS Soil Map Stream Order NRCS Soil Map Page: NRCS Soil Map Stream Order NRCS Soil Map Page:
Miscellaneous  Base Flow Conditions? (YN): Date of last precipitation: Date of last precipitation: Date of last precipitation:	MISCELLANEOUS  Base Flow Conditions? (Y/N): Date of last precipitation: Quantity: 25"  Photograph Information: Canopy (% open): (Note lab sample no. or id. and attach results) Lab Number: Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Base Flow Conditions? (Y/N): Date of last precipitation: Dollows and precipitation: Determined the process of the proce	MISCELLANEOUS  Base Flow Conditions? (Y/N): Date of last precipitation: Quantity: 25 ''  Photograph Information: Canopy (% open): /  Elevated Turbidity? (Y/N): Canopy (% open): /  Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number: /  Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Base Flow Conditions? (Y/N): Date of last precipitation: 10 20 Quantity. 25  Photograph Information: Photograph Information: Canopy (% open): 0  Were samples collected for water chemistry? (Y/N): Note lab sample no. or ld. and attach results) Lab Number.  Field Measures: Temp (*C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)  Is the sampling reach representative of the stream (Y/N) if not, please explain:  BIOTIC EVALUATION  Performed? (Y/N): Note lab sample no. or ld. and attach results) Lab Number.  BIOTIC EVALUATION  Performed? (Y/N): Note lab sample no. or ld. and attach results) Lab Number.  BIOTIC EVALUATION  Performed? (Y/N): Note lab sample no. or ld. and attach results) Lab Number.  BIOTIC EVALUATION  Performed? (Y/N): Note lab sample no. or ld. and attach results) Lab Number.  BIOTIC EVALUATION  Performed? (Y/N): Note lab sample no. or ld. and attach results) Lab Number.  BIOTIC EVALUATION  Performed? (Y/N): Note lab sample no. or ld. and attach results) Lab Number.  BIOTIC EVALUATION  Performed? (Y/N): Note lab sample no. or ld. and attach results) Lab Number.  BIOTIC EVALUATION  (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the attach results and bloom the labeled with the attach results and bloom the labeled with the attach results.  BIOTIC EVALUATION  Fish Observed? (Y/N): Noucher? (Y/N): Nouc	Base Flow Conditions? (Y/N): Date of last precipitation: Quantity:
Photograph Information:  Elevated Turbidity? (YAN):	Photograph Information:  Elevated Turbidity? (Y/N): N Canopy (% open): S   Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number;  Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
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Elevated Turbidity? (Y/N):	Elevated Turbidity? (Y/N): N Canopy (% open): O Can
Were samples collected for water chemistry? (YN): Note lab sample no. or id. and attach results). Lab Number:  Field Measures: Temp (*C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)  Is the sampling reach representative of the stream (Y/N). If not, please explain:  Additional comments/description of pollution impacts:  BIOTIC EVALUATION  Performed? (Y/N): Note: all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the side of the primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N). Voucher? (Y/N). Salamanders Observed? (Y/N). Voucher? (Y/N). Noucher? (Y/N). Aquatic Macroinvertebrates Observed? (Y/N). Voucher? (Y/N). Aquatic Macroinvertebrates Observed? (Y/N). Voucher? (Y/N). Include Important landmarks and other features of Interest for site evaluation and a marrative description of the stream's location  DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):  Include Important landmarks and other features of Interest for site evaluation and a marrative description of the stream's location	Were samples collected for water chemistry? (Y/N): Note lab sample no. or id. and attach results) Lab Number:  Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm) is the sampling reach representative of the stream (Y/N) If not, please explain:	Field Measures: Temp (°C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
Additional comments/description of pollution impacts:	
BIOTIC EVALUATION  Performed? (Y/N): Note: all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the silb number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N): Noucher? (Y/N): Salamanders Observed? (Y/N): Noucher? (Y/N): Voucher? (Y/N): Aquatic Macroinvertebrates Observed? (Y/N): Noucher? (Y/N): Noucher	Is the sampling reach representative of the stream (Y/N) If not, please explain:
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Performed? (Y/N): Note: A second all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the side of the side o	
Performed? (Y/N): Note: all voucher samples must be labeled with the sidn of t	Additional comments/description of pollution impacts:
DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed): Include Important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location  FLOW	ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Fish Observed? (Y/N)   Voucher? (Y/N)
Include Important landmarks and other features of Interest for site evaluation and a marrative description of the stream's location  FLOW	Comments regarding bloogy.
Include Important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location  FLOW	
Include Important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location  FLOW	
Include Important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location  FLOW	DRAWING AND NARDATIVE DESCRIPTION OF STREAM PEACH (This must be completed).
FLOW FLOW	
FLOW -	Include important landmarks and other readines of interest for site evaluation and a real after description of the streams for a
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LENGTH	MELOCATION AEP-H OO SITE NUM OF STREAM REACH (8) 20 18 20 SCORER K	O LAT39.	Rhodes River basin <u>Scioto Ri</u> 08170 Long 82.511687 Ri 0MMENTS SOH-KLU-	VER CODE	RAINAGE AREA (MP) RIVER MILE	
STREAM		and the sales of the	to "Field Evaluation Manual for	AND INC.		
		significant substra  PERCENT  SI  LO  20  LO  rock	substrate present. Check ONLY two te types found (Max of 8). Final metric  TYPE  SILT [3 pt]  LEAF PACKANOOU  FINE DETRITUS (3)  CLAY OF HARDANI  MUCK (0 pts)  ARYTFICHAL [3 pts]  (A)  [2]  TOTAL NUMBER	c score is surr Y DEBRIS [3   pits]	PERCENT  PERCENT  (B)  (B)	HHEI Metric Points Substrate Max = 40
2 1	aximum Pool Depth (Measure	the maximum po	ool depth within the 61 meter (2001) storm water pipes) (Check ONLY 5 cm - 10 cm [15 6 cm [5 pts] NO WATER OR Mo	if) evaluation r one box): pts]	each al the time of	Pool Depth Max = 30
<b>A</b>	ANK FULL WIDTH (Measured Omders (> 13) [30 pts] Om - 4.0m (> 9'7' - 13') [25 pt 5m - 3.0m (> 4'8" - 9'7") [20] DMMENTS	sj	>1.0m - 1.5m (>3   \$1.0m (\$3.37) [5]	de]		Bankfull Width Max=30
	RIPARIAN ZONE AND FL	DODPLAIN QUA	information <u>must</u> also be complete LTY ANOTE: River Left (L) and LAIN QUALITY		looking downstream &	
	R (Per Bunk)  Wiste >10m  Moderate 5-10m	66	(Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field	66	Conservation Tillage Urban or Industrial	
	Narrow Sm None COMMENTS	00	Residential, Park, New Field Fenced Pasture	00	Open Pasture, Row Crop Mining or Construction	
8	FLOW REGIME (At Time of Stream Flowing Substitute flow with isolate COMMENTS		Moist Chang	nel <mark>, isolated</mark> p , no water (E	ools, no flow (Infermittent) phemeral)	
		ends per 61 m (200 1.0 1.5	(Check ONLY one 2.0 2.5	box):	3.0 >3	
STI Flat (0.5	REAM GRADIENT ESTIMATE 10/100 (t) Flat to Modera	te	rate (2 t/100 ft) Moderate 1	lo Severe	Severe (10 n/10)	O ñ <mark>)</mark>

ADDITIONAL STREAM INFORMATION (This Info	ormation Must Also be Completed):
QHEI PERFORMED? - Yes KNo	QHEI Score(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
Swwh Name: Sugar Kun	Distance from Evaluated Stream / MIUS
CWH Name:	Distance from Evaluated Stream
DEWH Name:	Distance from Evaluated Stream
	INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: NAM (	NRCS Soil Map Page: NRCS Soil Map Stream Order
county: Jackson Co.	Township / City:
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of las	st precipitation: 7/10/2017 Quantity: .25"
Photograph Information:	
Elevated Turbidity? (Y/N): Canopy (	(04 ener) 30'
Elevated Turbidity? (T/N): Canopy (	(% open). OO / .
	): Note lab sample no. or id. and attach results) Lab Number:
	Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
is the sampling reach representative of the stream	(Y/N) If not, please explain:
4.77	
Additional comments/description of pollution impact	cts:
ID number, Include Fish Observed? (Y/N) \( \text{V} \) Voucher? (Y/N) \( \text{V} \) Frogs or Tadpoles Observed? (Y/N) \( \text{V} \) Voucher	biservations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  Salamanders Observed? (Y/N)  Voucher?
Comments regulating bloody.	
DRAWING AND NARRATIVE	DESCRIPTION OF STREAM REACH (This must be completed):
	atures of interest for site evaluation and a narrative description of the stream's location
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SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate 7YPE to (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  BLDR SLABS [16 pts]  BOULDER (>256 mm) [16 pts]  COBBLE (66-256 mm) [12 pts]  COBBLE (66-256 mm) [12 pts]  GRAVE: (264 mm) [1 pts]  Total of Percentages of Bidr Slabs, Boulder, Cotble, Bedrock  CORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  Maximum Pool Depth (Measure the maximum pool depth within the 51 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes)  (Check ONLY one box):  > 30 centimeters [20 pts]  > 22.5 - 30 cm [30 pts]  NO WATER OR MOIST CHANNEL [0 pts]	HH Met Poil Subst
PERCENT TYPE  BLOR SLABS [16 pts]  BOULDER (>256 mm) [16 pts]  COBBLE (65-256 mm) [12 pts]  COBBLE (65-256 mm) [12 pts]  GRAVEL (256 mm) [13 pts]  COBBLE (65-256 mm) [14 pts]  GRAVEL (256 mm) [15 pts]  Total of Percentages of Bid Stabs, Boulder, Cotble, Bedrock  ORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  Maximum Pool Depth (Measure the maximum pool depth within the 51 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes)  Maximum Pool Depth (Measure the maximum pool depth within the 51 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes)  Some 10 cm [15 pts]  Some 10 cm [15 pts]  NO WATER OR MOIST CHANNEL [0 pts]	1 1
BOULDER (>256 mm) [16 pts]   LEAF PACKWOODY CERRIS [3 pts]   SEBROCK [16 pt]   FINE DETRITUS [2 pts]   CLAY OF HARDPAN [0 pt]   GRAVEL (56-256 mm) [12 pts]   GLAY OF HARDPAN [0 pt]   GRAVEL (364 mm) [4 pts]   GLAY OF HARDPAN [0 pt]   GRAVEL (364 mm) [4 pts]   GRAVEL (365 mm) [6	Subst Max
COBBLE (63-256 mm) [12 pts]  GRAVEL (3-64 mm) [1 pts]  Total of Percentages of Bid Stabs, Boulder, Cotble, Bedrock  ORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  Maximum Pool Depth (Measure the maximum pool depth within the 51 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes)  ARTIFICIAL [3 pts]  TOTAL NUMBER OF SUBSTRATE TYPES:  Maximum Pool Depth (Measure the maximum pool depth within the 51 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]  > 22.5 - 30 cm [30 pts]  > 10 - 22.5 cm [25 pts]  NO WATER OR MOIST CHANNEL [0 pts]	Max 1
Total of Percentages of Bidr Stabs, Boulder, Cottole, Bedrock (A)  DRE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  Maximum Pool Depth (Measure the maximum pool depth within the 51 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes)  > 30 certimeters [20 pts]  > 30 certimeters [20 pts]  > 5 cm - 10 cm [15 pts]  > 5 cm [5 pts]  NO WATER OR MOIST CHANNEL [0 pts]	15
Total of Percentages of Bich Stabs, Boulder, Cottole, Bedrock  ORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  Maximum Pool Depth (Measure the maximum pool depth within the 51 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]  > 22.5 - 30 cm [30 pts]  > 10 - 22.5 cm [25 pts]  NO WATER OR MOIST CHANNEL [0 pts]	
Bidr Slabs, Boulder, Cobble, Bedrock  ORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]  > 22.5 - 30 cm [30 pts]  > 10 - 22.5 cm [25 pts]  NO WATER OR MOIST CHANNEL [0 pts]	_ I A -
Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]	3
evaluation. Avoid plunge pools from road cultverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]	-
> 22.5 - 30 cm [30 pts]	Pool I
	0
COMMENTS MAXIMUM POOL DEPTH (centimeters):	
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box): > 4.0 meters (> 13') [30 pts]	Bank Wid
> 3.0 m - 4.0 m (> 9' 7 - 13') [25 pts]	Maxi
COMMENTS AVERAGE BANKFULL WIDTH (meters)	21 5
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstress	n <b>a</b> r
RIPARIAN WIDTH FLOODPLAIN QUALITY  1 R (Per Bank) L R (Most Predominant per Bank) L R	
☐	age
Moderate 5-10m District Field Urban or Industri	
□ Narrow Śm □ □ Residential, Park, New Field □ □ Open Pasture, I	CINA
□ None □ □ Fenced Pasture □ □ Mining or Const	120
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):	uction
	uction
Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS  Moist Channel, isolated pools, no flow (Interstitial)  Dry channel, no water (Ephemeral)	

DDITIONAL STREAM INFORMATION (This Information Must Als	
QHEI PERFORMED? - Yes No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	Dalamiles
	Distance from Evaluated Stream  Distance from Evaluated Stream
CWH Name:	The Control of Change
J EWH Name:	
	ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
	NRCS Soil Map Page: NRCS Soil Map Stream Order
county: <u>Jackson (a</u> Tow	mship/City: Coal Tup.
MISCELLANEOUS	- II
Base Flow Conditions? (Y/N): Date of last precipitation:	1 10 201 Quantity: 125
Photograph Information:	
Bevated Turbidity? (Y/N): N Canopy (% open): 30	
Were samples collected for water chemistry? (Y/N): Note la	
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
s the sampling reach representative of the stream (Y/N)	xt, please explain:
Additional comments/description of pollution impacts:	
The state of the s	
BIOTIC EVALUATION	
Performed? (Y/N): (If Yes, Record all observations. Vouch	her collections optional. NOTE: all voucher samples must be labeled with the site
	ata sheets from the Primary Headwater Habitat Assessment Manual)
ish Observed? (Y/N) Voucher? (Y/N) Salamanders	Observed? (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Comments Regarding Biology	
comments Regarding Biology:	
DRAMMIC AND MARRATIVE RESCRIPTION	ON OF STREAM REACH (This must be completed):
	for site evaluation and a narrative description of the stream's location
Mainto	mission ROW
( ) Trains	MISSION KOW
1 2	()
	47 11/1/1/1/
LOW	
~ )(= 1)	
( ) Forest	7 1 1 1 - 121
	) ( ) Terest

## Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

57

THE PERSON NAMED IN					OVERING L	RECENT OR NO RECOV	VER'
SUBSTRAT	TE (Estimate percent of	every type of	substrate pres	ent Check ONLY two	predominant	substrate TYPF hoves	
(Max of 40)	. Add total number of sig						HI
	NABS (16 pts) ER (>266 mm) (16 pts)		智	SILT (3 pt) LEAF PACKAVOORA	/ notices is a	40	Po
BEDRO	CK Liebo		ŏŏ	FINE DETRITUS ()			Sub
P. Della St. Company	E (65-296 mm) [12 pts]	10	00	CLAY OF HARDPAN	10 mg		Max
	i, (2:64 tpm) [0 pts] <2 mm) [6 pts]	15		ARTIFICIAL (3 pts)			1-
Total	of Percentages of	10	W			(B)	A
	Boulder, Cobble, Bedroo OST PREDOMINATE SU		12	TOTAL NUMBE	D AF CURET	5	-
				distance of the last			
evaluation.	Pool Depth (Measure the Avoid plunge pools from			pes) (Check ONLY	one box):		Pool Max
> 30 centime > 22.5 - 30 c			肾	> 5 cm - 10 cm [15   < 6 cm [5 pts]	pts]		10
> 10 - 22.5 0		SW 45 25 2		NO WATER OR MC	IST CHANNE	L [0 pts]	1
COMMENTS	5			MAXIMUM PO	OOL DEPTH (	centimeters):	
	WIDTH (Measured as	the average of	3-4 measurem	ents) (Chec	k ONLY one t	ox):	Ban
	> 13) [30 pts] m (> 9:7" - 13) [25 pts]		8	> 1.0 m - 1.5 m (> 3' £ 1.0 m (£ 3' 3") [5 p		(6)	Max
THE RESERVE AND ADDRESS OF THE PARTY OF THE	THE PARTY NAMED IN COLUMN TWO IS NOT THE OWNER, THE PARTY NAMED IN COLUMN TWO IS NOT THE OWNER, THE PARTY NAMED IN COLUMN TWO IS NOT THE OWNER,	Section 15 Section 1	124			5	
> 1.5 m - 3.0	m (> 4'8"-9'7") [20 pts]	A STATE OF THE PARTY OF THE PAR					21
> 1.5 m + 3.0				AVERAGE B	ANKFULL WI	OTH (meters)	2
> 1.5 m - 3.0			Information in			OTH (meters)	2
COMMENTS RIPA	RIAN ZONE AND FLOO	This	LITY AND	ust also be complete TE: River Left (L) and	d	OTH (meters)	2
COMMENTS RIPA		This DDPLAIN QUAL FLOODS	LITY AND	ust also be complete TE: River Left (L) and	d Right (R) as h	OTH (meters)	2
COMMENTS  RIPA  L R (P	RIAN ZONE AND FLOO ARIAN WIDTH	This DOPLAIN QUAL FLOODS	LITY AND PLAIN CUALITY (Most Predon Mature Fores	ust also be complete TE: River Left (L) and ( unant per Bank) I, Wetland	d Right (R) as l	OTH (meters)	2
COMMENTS  RIPA  L R P	RIAN ZONE AND FLOC ARIAN WIDTH Er Bank)	This DDPLAIN QUAL FLOODS	LITY AND PLAIN CUALITY (Most Predon Mature Fores	ust also be complete TE: River Left (L) and	d Right (R) as h	Conservation Tillage Urban or Industrial	2
COMMENTS  RIPA  RIPA  L R P  D D W	RIAN ZONE AND FLOC ARIAN WIDTH er Bank) ide >10m	This DOPLAIN QUAL FLOODS	LITY AND PLAIN CUALITY (Most Predon Mature Fores Immature For Field	ust also be complete TE: River Left (L) and ( unant per Bank) I, Wetland	d Right (R) as l	Conservation Tillage Urban or Industrial Open Pasture, Row	2
COMMENTS  RIPA  RI	RIAN ZONE AND FLOX ARIAN WIDTH er Bank) ide >10m oderate 5-10m irrow <im< td=""><td>This DDPLAIN QUAL FLOODS L R</td><td>LITY AND PLAIN CUALITY (Most Predon Mature Fores Immature For Field</td><td>ust also be complete TE: River Left (L) and ( imant per Bank) (, Wetland est, Shrub or Old ark, New Field</td><td>d Right (R) as a</td><td>Conservation Tillage Urban or Industrial</td><td>20</td></im<>	This DDPLAIN QUAL FLOODS L R	LITY AND PLAIN CUALITY (Most Predon Mature Fores Immature For Field	ust also be complete TE: River Left (L) and ( imant per Bank) (, Wetland est, Shrub or Old ark, New Field	d Right (R) as a	Conservation Tillage Urban or Industrial	20
COMMENTS  RIPA  RI	RIAN ZONE AND FLOC ARIAN WIDTH er Bank) ide >10m oderate 5-10m wrow <5m ine MENTS_	This DEPLAIN QUAL FLOODS	LITY AND PLAIN QUALITY (Most Predon Mature Fores Immature For Field Residential, P Fenced Pastu	ust also be complete TE: River Left (L) and ( imant per Bank) I, Wetland est, Shrub or Old ark, New Field re	Ment (R) asala	Conservation Tillage Urban or Industrial Open Pasture, Row Crop	20
COMMENTS  RIPA  RI	RIAN ZONE AND FLOX ARIAN WIDTH er Bank) ide >10m oderate 5-10m irrow <im< td=""><td>This DEPLAIN QUAL FLOODS</td><td>LITY AND PLAIN QUALITY (Most Predon Mature Fores Immature For Field Residential, P Fenced Pastu</td><td>ust also be complete TE: River Left (L) and ( imant per Bank) I, Wetland est, Shrub or Old rark, New Field re</td><td>Right (R) as a</td><td>Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction</td><td>20</td></im<>	This DEPLAIN QUAL FLOODS	LITY AND PLAIN QUALITY (Most Predon Mature Fores Immature For Field Residential, P Fenced Pastu	ust also be complete TE: River Left (L) and ( imant per Bank) I, Wetland est, Shrub or Old rark, New Field re	Right (R) as a	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction	20
RIPA	RIAN ZONE AND FLOX ARIAN WIDTH er Bank) ide >10m oderate 5-10m ine MENTS	This DDPLAIN QUAI FLOOD	LITY AND PLAIN QUALITY (Most Predon Mature Fores Immature For Field Residential, F Fenced Pastu	ust also be complete TE: River Left (L) and ( innert per Bank) I, Wetland est, Shrub or Old ark, New Field re  box):  Moist Chann	Right (R) as a	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction ols, no flow (Infermittent)	20
COMMENTS RIPA L R (P) O W	RIAN ZONE AND FLOC ARIAN WIDTH er Bank) ide >10m oderate 5-10m	This DDPLAIN QUAL FLOODS L R	LITY AND PLAIN QUALITY (Most Predon Mature Fores Immature For	ust also be complete TE: River Left (L) and ( unant per Bank) I, Wetland	d Right (R) as a	conservation Tilles	e le

QHEI PERFORMED? - LI Yes DELNO QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	0.74
WWH Name: SUGAR KWM	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
DEWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE	
, 000 2000 21g. 1 (1 mm)	CS Soil Map Page: NRCS Soil Map Stream Order
County: Township /	city. Coal & UCK TWP.
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of last precipitation:	201 Quantity: .25"
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 351	
Vere samples collected for water chemistry? (Y/N): (Note lab sam	rile no or id and attach results) Lab Number:
Field Measures: Temp (°C) Dissolved Oxygen (mg/l)	
s the sampling reach representative of the stream (Y/N) If not, pleas	se explain:
	The state of the s
Performed? (Y/N): (If Yes, Record all observations. Voucher colle	ections optional. NOTE: all voucher samples must be labeled with the site ets from the Primary Headwater Habitat Assessment Manual)
ish Observed? (Y/N) Voucher? (Y/N) Salamanders Observegs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Ma	ved? (Y/N) N Voucher? (Y/N) N
ish Observed? (Y/N) Voucher? (Y/N) Salamanders Observegs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Ma	ved? (Y/N) N Voucher? (Y/N) N
rish Observed? (Y/N) Voucher? (Y/N) Salamanders Observeds or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Ma	ved? (Y/N) N Voucher? (Y/N) N
ish Observed? (Y/N) Voucher? (Y/N) Salamanders Observegs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Ma	ved? (Y/N) N Voucher? (Y/N) N
sh Observed? (Y/N) Voucher? (Y/N) Salamanders Observeds or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Ma	ved? (Y/N) \( \frac{N}{N} \) Voucher? (Y/N) \( \frac{N}{N} \) \( \frac{N}{N} \) Voucher? (Y/N) \( \frac{N}{N} \)
Ish Observed? (Y/N) Voucher? (Y/N) Salamanders Observeds or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Materials Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF	Voucher? (Y/N) Vouche
voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macomments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of interest for site	STREAM REACH (This must be completed):  evaluation and a narrative description of the stream's location
voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macomments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of interest for site	STREAM REACH (This must be completed):  evaluation and a narrative description of the stream's location
Ish Observed? (Y/N) Voucher? (Y/N) Salamanders Observeds or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macromments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of Interest for site	STREAM REACH (This must be completed):  evaluation and a narrative description of the stream's location
Ish Observed? (Y/N) Voucher? (Y/N) Salamanders Observeds or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macomments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF	STREAM REACH (This must be completed):  evaluation and a narrative description of the stream's location
ogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Salamanders Observeds ogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of Interest for site	STREAM REACH (This must be completed):  evaluation and a narrative description of the stream's location
Sh Observed? (Y/N) Voucher? (Y/N) Salamanders Observeds or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macroments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of Interest for site Transmis	STREAM REACH (This must be completed):  evaluation and a narrative description of the stream's location
Salamanders Observed? (Y/N) Salamanders Observeds or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Materials Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of Interest for site Maintained Transmissions.	STREAM REACH (This must be completed):  evaluation and a narrative description of the stream's location
Fish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed Observed? (Y/N) Voucher? (Y/N) Aquatic MacComments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of interest for site	STREAM REACH (This must be completed):  evaluation and a narrative description of the stream's location
Pish Observed? (Y/N) Voucher? (Y/N) Salamanders Observeds or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic MacComments Regarding Biology.  DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of Interest for site Transmissions.	STREAM REACH (This must be completed):  evaluation and a narrative description of the stream's location
DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of Interest for site	STREAM REACH (This must be completed):  evaluation and a narrative description of the stream's location
Sh Observed? (Y/N) Voucher? (Y/N) Salamanders Observeds or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Macomments Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of Interest for site Transmis	STREAM REACH (This must be completed):  evaluation and a narrative description of the stream's location
Sh Observed? (Y/N) Voucher? (Y/N) Salamanders Observeds or Tadpoles Observed? (Y/N) Voucher? (Y/N) Aquatic Materials Regarding Biology:  DRAWING AND NARRATIVE DESCRIPTION OF Include important landmarks and other features of Interest for site Transmis	STREAM REACH (This must be completed):  evaluation and a narrative description of the stream's location



LENGTH OF STREAM REACH (#) 200  DATE 7 19 207 SCORER KLV  NOTE: Complete All Items On This For	COMMENTS SOH-KU	RIVER CODE RIVER MILE
(Max of 40). Add total number of signifi-	cant substrate types found (Max of 8). Final PERCENT  TYPE  SILT [3 pt]  LEAF PACKA  FINE DETRIT  CLAY OF HAR  ARTIFICIAL [	PERCENT POINTS  Substrate Max = 40
Maximum Pool Depth ( <i>Measure the nevaluation</i> . Avoid plunge pools from roal > 30 centimeters [26 pts] > 22.5 - 30 cm [30 pts] > 10 - 22.5 cm [25 pts]      COMMENTS  3. BANK FULL WIDTH (Measured as the > 4.0 malers (> 13) [30 pts] > 3.0 m - 4.0 m (> 5' 7' - 13') [25 pts]	maximum pool depth within the 61 meter id culverts or storm water pipes) (Check   > 5 cm - 10   < 5 cm [5 pt   NO WATER   MAXII	(Check ONL Y one box):  (Check ONL Y one box):
OMMENTS	AVER	AGE BANKFULL WIDTH (melers)
RIPARIAN ZONE AND FLOODI RIPARIAN WIDTH	This information must also be co PLAIN QUALITY ANOTE: River Left FLOODPLAIN QUALITY	impleted (L) and Right (R) as looking downstream*
L R (Per Bank) Wade >10m  Moderate 5-10m	L R (Most Predominant per Ban Mature Forest, Wetland Immature Forest, Shrub or G	Conservation Tillage
□ □ Narrow <m comments<="" none="" td="" □=""><td>Residential, Park, New Field Fenced Pasture</td><td>Open Pasture, Row Crop Mining or Construction</td></m>	Residential, Park, New Field Fenced Pasture	Open Pasture, Row Crop Mining or Construction
FLOW REGIME (At Time of Ever Stream Flowing Subsurface flow with isolated pool		t Channel, isolated pools, no flow (Intermittent) channel, no water (Ephemeral)
None 0.5	1.0 (Check OA) 1.5 (Check OA) 2.0 2.5	LY one box):    3.0
STREAM GRADIENT ESTIMATE  Flat (0.5 N/193 II) Flat to Moderate	Moderate (2 t/100 tt)	derate to Severe (10 8/100 ft)

DDITIONAL STREAM INFORMATION (This Information Must	Also be Completed):
QHEI PERFORMED? - Yes No QHEI Score	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	
TWWH Name: SUOUY KW	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
DEWH Name:	Distance from Evaluated Stream
1 1 1 1 1 1	IE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
ISGS Quadrangle Name: WellStry, OH	NRCS Soil Map Page: NRCS Soil Map Stream Order
county: dackson Co	Township/City. COalr LICK lup.
MISCELLANEOUS	
ase Flow Conditions? (Y/N): Date of last precipitation:	7/18/2017 2008/10 (25")
ase Flow Conditions? (Y/N): Date of last precipitation.	Quantity
hotograph Information:	
levated Turbidity? (Y/N): N Canopy (% open): 1	<u> </u>
/ere samples collected for water chemistry? (Y/N): 1 (Not	
	pH (S.U.) Conductivity (µmhos/cm)
the sampling reach representative of the stream (Y/N)	f not, please explain:
	The state of the s
ddist	
dditional comments/description of pollution impacts:	
ID number. Include appropriate field sh Observed? (Y/N) Voucher? (Y/N) Salamando ogs or Tadpoles Observed? (Y/N) Voucher? (Y/N) A comments Regarding Biology.  DRAWING AND NARRATIVE DESCRIPT	coucher collections optional. NOTE: all voucher samples must be labeled with the d data sheets from the Primary Headwater Habitat Assessment Manual)  ers Observed? (Y/N) Voucher? (Y/N) V
LOW	Transmission
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SITE NAME A OCATION ALP- HC PON S012 SITE NUMBER LENGTH OF STREAM REACH (8) 88 DATE 7 19 20 SCORER KLV	RIVER BASIN SUDTO RIVER LAT391.080882 LONG.82.581155 RIVER COMMENTS SOH-KLV-013	
Complete Company of the Company of t	n - Refer to "Field Evaluation Manual for Oh	
(Max of 40). Add total number of significa	ry type of substrate present. Check ONLY two predant substrate types found (Max of 8). Final metric scoence of the substrate	PERCENT OF boxes A & B.  PERCENT Points  BRIS [3 pts]  Substrate May 5 40
	eximum pool depth within the 61 meter (200 ft) evice culverts or storm water pipes) (Check ONLY one > 5 cm - 10 cm [15 pts]	box): Max = 30
3. BANK FULL WIDTH (Measured as the a > 4.0 meters (> 13') [30 pts]   > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]   > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]   COMMENTS_	>1.0 m -1.5 m (> 3'3"- \$ 1.0 m (\$ 3'3") [5 pts]	VLY one box): 4' 8") [15 pts]  FULL WIDTH (meters)  Bankfull Width Max=30  5
RIPARIAN ZONE AND FLOODPI	- The second sec	nt (R) as looking downstream分
RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m  Narrow <5m  None  COMMENTS	Residential, Park, New Field	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction
FLOW REGIME (At Time of Evalue Stream Flowing Subsurface flow with isolated pools COMMENTS	Moist Channel, is	solated pools, no flow (Intermittent) water (Ephemeral)
SINUOSITY (Number of bends pends pen	1.0 (Check ONLY one box) 1.0 2.0 1.5 2.5  Moderate (2 1/100 ft)	3.0 >3

	(If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	Osidos
	Distance from Evaluated Stream () miles
CWH Name:	Distance from Evaluated Stream
J EWH Name:	Distance from Evaluated Stream
	TIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
county: Jackson Co. Towns	ship/city. Coal a LICK hup.
MISCELLANEOUS	The same of the sa
Base Flow Conditions? (Y/N): Date of last precipitation:	10/2017 quantity: 12511
Photograph Information:	
Devated Turbidity? (Y/N): N Canopy (% open): 40 /	3.5
Vere samples collected for water chemistry? (Y/N): (Note lab	
ield Measures: Temp (°C) Dissolved Oxygen (mg/l)	pH (S.U.) Conductivity (µmhos/cm)
the sampling reach representative of the stream (VAI)	please explain:
The sampling reach representative of the sacuti (1714)	production of the second of th
erformed? (Y/N): (If Yes, Record all observations. Voucher	schools from the Primary Heartwater Hahitat Assessment Manual)
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SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.    Percent	THE RESERVE THE RE	This Form - Refer	RIVER BASIN SOUND RIVER BASIN SOUND RIVER BASIN SOUND RIVER BOSTON RIVER BOSTON RIVER BASIN SOUND RIVER BASIN SOUND RIVER BASIN SOUND RIVER BASIN RIVE	EVER CODE_ -014 (FP or Ohio's PHW	RIVER MILE	ıctions
(Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  PERCENT  TYPE  BLDR SLABS (16 pts)  BEDROCK [16 pts)  BEDROCK [16 pts]  BEDROCK [16 pts]  BEDROCK [16 pts]  BEDROCK [16 pts]  BEDROWS [16 pts]  BEDROWS [16 pts]  BEDROWS [16 pts]  BEDROWS [16 pts]  COBBLE (62-556 mm) [12 pts]  AVERAGE BASINFULL WIDTH (Instituted in Tibuted		IONE / NATURAL CH	ANNEL DRECOVERED DRE	COVERING []	RECENT OR NO RECO	VERY
BEDR SLABS [16] pts]  BOULDER (+256 mm) [16] pts]  BEDROCK [16] pt]  BEDROCK [16] pt]  COBBE (65-256 mm) [12] pts]  COBBE (65-256 mm) [12] pts]  GRAVEL (2-64 mm) [19] pts]  SAND (+2 mm) [16] pts]  BEDROCK [16] pts]  ARTHFICIAL [3] pts]  Flat of Percentages of Bad's Rubs, Boulder, Cobbe, Bedrock						
BOULDER (-256 mm) [16 pts]	YPE		TYPE	ic score is sum o	A Section Assessment Control of the	Metr
COBBLE (65-256 rmm) [12 pts]	BOULDER (>256 mm) [16	pts)		N DEBRIS (3 pt	20	
GRAVEL (2-64 mm) [9 pts]		T		CONTRACTOR DESCRIPTION	<b>建 ——</b> ——	Substr Max =
SAND (<2 mm) (6 pts)  Total of Percentages of Bid' Stebs, Boulder, Cobble, Bedrock  ORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  Mackinum Pool Depth (Bleasure the mackinum pool depth within the 61 meser (200 tt) evaluation reach at the time of evaluation, Avoid plunge pools from road culvents or storm water pipes) (Check ONLY one box):  > 20 certimeters (20 pts)    20 certimeters (20 pts)   3 com (10 pts)   4 com (15 pts)   5 com (15 pts)   5 com (15 pts)   6 com (15 pts)   7 c						
Bidr Slabs, Boulder, Cobble, Bedrock		80				
ORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:    TOTAL NUMBER OF SUBSTRATE TYPES:   Max.   TOTAL NUMBER OF SUBSTRATE TYPES:   TOTAL NUMBER OF SUBSTRATE TYPES:   Total on the time of evaluation reach at the time of evaluation reach at the time of products of Substrate of Substrate of Substrate of Substrate Types:   Total of Substra		5	(A)		(B)	A+B
Maximum Pool Depth (Niessure the maximum pool depth within the 61 meter (200 tr) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters (20 pts)  > 22.5 - 30 cm (30 pts)  > 22.5 - 30 cm (30 pts)  > 10 cm (15 pts)  AXIMUM POOL DEPTH (centimeters):  COMMENTS  BANK FULL WIDTH (Measured as the average of 3-4 measurements)  AXIMUM POOL DEPTH (centimeters):  BANK FULL WIDTH (Measured as the average of 3-4 measurements)  > 4.0 meters (> 13) (30 pts)  > 4.0 m (> 5' 7' - 13) (25 pts)  > 1.0 m - 1.5 m (> 2' 3'' - 4'') (15 pts)  > 3.0 m - 4.0 m (> 5' 7' - 13) (25 pts)  > 1.5 m - 3.0 m (> 4'''''''''''''''''''''''''''''''''''			PES- TOTAL NUMBI	ER OF SUBSTR	ATE TYPES	
PARIAN ZONE AND FL COOPLAIN QUALITY  This information must also be completed  RIPARIAN ZONE AND FL COOPLAIN QUALITY  AVERAGE BANKFULL WIDTH (Mesters)  This information must also be completed  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  ROPE Bank)  RESIdential, Park, New Field  RIPARIAN WIDTH  RESIdential, Park, New Field  RIPARIAN WIDTH  RESIDENTIAL  ROPE Bank)  ROPE Bank  ROPE Bank)  ROPE Bank	Part of the last o			-	-	
Som	evaluation. Avoid plunge pools	from road culverts or	r storm water pipes) (Check ONL)	one box):	cri si ure une oi	Max =
NO WATER OR MOIST CHANNEL [0 pts]   NO WATER OR MOIST CHANNEL [0 pts]   NAXIMUM POOL DEPTH (certimeters):			The state of the s	pls)		0
BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13) [30 pts]  > 3.0 m - 4.0 m (> 8 7 - 13) [25 pts]  > 1.5 m + 3.0 m (> 4 8 - 9 7) [20 pts]  COMMENTS  AVERAGE BANKFULL WIDTH (meters)  This information must also be completed  RIPARIAN 20NE AND FLOODPLAIN QUALITY (ANOTE River Left (L) and Right (R) as looking downstream):  RIPARIAN WIDTH (Per bank)	> 10 - 22.5 cm [25 pts]		THE RESERVE OF THE PARTY OF THE	OIST CHANNEL	[0 pts]	0
3.0 m = 4.0 m (> 9 7 - 13) [30 pts]   3.0 m = 4.0 m (> 9 7 - 15) [25 pts]   3.0 m = 4.0 m (> 9 7 - 15) [25 pts]   3.0 m = 4.0 m (> 9 7 - 15) [25 pts]   3.0 m = 4.0 m (> 9 7 - 15) [25 pts]   3.0 m (> 4 8 - 9 7 ) [20 pts]   3.0 m (> 4 8 - 9 7 ) [20 pts]   3.0 m (> 4 8 - 9 7 ) [20 pts]   3.0 m (> 4 8 - 9 7 ) [20 pts]   3.0 m (> 4 8 - 9 7 ) [20 pts]   3.0 m (> 4 8 - 9 7 ) [20 pts]   3.0 m (> 4 8 - 9 7 ) [20 pts]   3.0 m (> 4 8 - 9 7 ) [20 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 - 4 8 7) [15 pts]   3.0 m (> 3 3 7) [5 pts]   3.0 m (> 3	COMMENTS		MAXIMUM P	POOL DEPTH (6	entimeters):	1000
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AVERAGE BANKFULL WEDTH (meters)  This information must also be completed  RUPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE River Left (L) and Right (R) as looking downstream of RIPARIAN WIDTH  I. R. (Per Bank)  I. R. (Most Predominant per Bank)  I. R. (Onservation Tillage  Moderate 5-10m  Immalure Forest, Shrub or Old  Immalure Forest, Welland  Immalure Forest, Welland  Immalure Forest, Welland  Immalure Forest, Shrub or Old  Immalure Forest, Shrub or Old  Immalure Forest, Welland  Immalure Forest, Shrub or Old  Immalure Forest, Welland  I	> 4.0 meters (> 13') [30 pts]		>1.0m - 1.5m (>3			Widt
This Information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIAN WIDTH  RIPARIAN ZONE AND FLOODPLAIN QUALITY  RIPARIA	73.00 - 4.00 (> 9.7 = 13) (%	Spiral State of the State of th	210m/c2/2016	THE RESERVE OF THE PARTY OF THE	Control of the Contro	1
RIPARIAN WIDTH  RIPARIAN WIDTH	>1.5m -3.0m (>4'8"+9'7) [2	p(s) 20 p(s)	≥ 1.0m(≤ 3° 3°) [6	PISI .	21	
RIPARIAN WIDTH  RIPARIAN WIDTH	>1.5m -3.0m (>4'8"+9'7) [	p(s) 20 p(s)		Y Tirk	TH (meters)	
R (Per Bank)	>1.5m -3.0m (>4'8"+9'7) [	6 pts] 20 pts]		Y Tirk	TH (meters)	1
Waste >16m	>1.5m -3.0m (>4'8"+9'7") [	20 ptsj	AVERAGE E	SANKFULL WID		1
Moderate 5-10m	COMMENTS  RIPARIAN ZONE AND RIPARIAN WIDTH	This FLOODPLAIN QUAL	AVERAGE E Information must also be complet LITY \$NOTE River Left (L) and PLAIN QUALITY	ed d Right (R) as los		1
Narrow Sm   Residential, Park, New Field   Copen Pasture, Row Crop   Nane   Fenced Pasture   Mining or Construction	COMMENTS  RIPARIAN ZONE AND RIPARIAN WIDTH  L. R. (Per Bank)	This FLOODPLAIN QUAL FLOOD L R	AVERAGE E Information must also be complet LITY \$NOTE River Let (L) and PLAIN QUALITY  (Most Predominant per Bank)	ed d Right (R) as los	king downstream \$	-
None   Penced Pasture   Mining or Construction	COMMENTS  RIPARIAN ZONE AND RIPARIAN WIDTH  L. R. (Per Bank)  Wide >10m	This FLOODPLAN QUAL L R	Information must also be complete.  LITY &NOTE River Left (L) and PLAIN QUALITY  (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Shrub or Old	ed Right (R) as los	king downstream år Conservation Tillage	1
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS  SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box): None  1.0  2.0  3.0	RIPARIAN ZONE AND RIPARIAN WIDTH  R. (Per Bank) Wide > 16m  Mgderate 5-10m	This FLOODPLAIN QUAL I. R. D.	AVERAGE E Information must also be complete. LITY \$NOTE River Left (L) and PLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field	ed Right (R) as los	King downstream (*)  Conservation Tillage  Urban or Industrial	
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None    Moist Channel, isolated pools, no flow (Intermittent)	RIPARIAN ZONE AND RIPARIAN WIDTH  R (Per Bank)  Wide >10m  Narrow <5m	This FLOODPLAIN QUAI BLOOD! L R	AVERAGE E Information must also be completed. LITY SENOTE River Left (L) and PLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field	ed Right (R) as los	King downstream a Conservation Tillage Urban or Industrial Open Pasture, Row Crop	1
Stream Flowing Subsurface flow with isolated pools (Interstitial) COMMENTS SINUOSITY (Number of bends per 61 m (200 ft) of channel) None    Moist Channel, isolated pools, no flow (Intermittent)	RIPARIAN ZONE AND RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  Wide >10m  Negrow <5m  Negrow <5m	This FLOODPLAIN QUAI BLOOD! L R	AVERAGE E Information must also be completed. LITY SENOTE River Left (L) and PLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field	ed Right (R) as los	King downstream a Conservation Tillage Urban or Industrial Open Pasture, Row Crop	5
□ None □ 1.0 □ 3.0	RIPARIAN ZONE AND RIPARIAN WIDTH  R (Per bank) Wate > 16m  Nerrow < 5m  None  COMMENTS	This ROODPLAIN QUAI	AVERAGE B Information must also be complete LITY ANOTE River Left (L) and PLAIN QUALITY (Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field Residential, Park, New Field Fenced Pasture	ed Right (R) as los	King downstream a Conservation Tillage Urban or Industrial Open Pasture, Row Crop	1
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□ V.3 □ 2.5 □ >3	RIPARIAN ZONE AND RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  RIPARIAN WIDTH  Mide >10m  Riparian Sim  Stream Flowing  Substitute flow with isol COMMENTS	This FLOODPLAIN QUAL FLOODPLAI	Information must also be completed.  LITY SANOTE River Left (L) and PLAIN QUALITY  (Most Predominant per Bank)  Mature Forest, Wetland  Immature Forest, Shrub or Old Field  Residential, Park, New Field  Fenced Pasture  Moist Change)  In Moist Change)	ed d Right (R) as los L R D D D D D D D D D D D D D D D D D D D	Conservation Tillage Urban or Industrial Open Pasture, Row Crop Mining or Construction	1
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GHEI PERFORMED? -   Yes Ano GHEI Score (If Yes, Atlach Completed QHEI Form)  DOWNSTREAM DESIGNATED USE(S)  DOWNSTREAM DESIGNATED USE(S)  DOWNSTREAM DESIGNATED USE(S)  Distance from Evaluated Stream  Distance from Evaluated Stream  Distance from Evaluated Stream  MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED ARG. CLEARLY MARK THE SITE LOCATION  USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order  Township / City. Could block the Stream Order  Township / City	
Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream Distance from Evaluated Stream MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order NRCS Soil Map Page: NRCS Soil Map Stream Order Distance from Evaluated Stream NRCS Soil Map Page: NRCS Soil Map Stream Order NRCS Soil Map Page: NRCS Soil Map Stream Order Distance from Evaluation NRCS Soil Map Page: NRCS Soil Map Stream Order NRCS Soil Map Stream Order Distance from Evaluation NRCS Soil Map Stream Order NRCS Soil Map Page: NRCS Soil Map Stream Order NRCS S	
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Distance from Evaluated Stream  MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  USGS Quadrangle Name: NRCS Soil Map Page: NRCS Soil Map Stream Order Township / City.  MISCELLANEOUS  Base Flow Conditions? (Y/N): Date of last precipitation: 7 [10 2017] Quantity: 125 11  Chotograph information: Canopy (% open): 25 1  Were samples collected for water chemistry? (Y/N): (Note lab sample no. or id. and attach results) Lab Number: Site Measures: Temp ("C) Dissolved Oxygen (mg/l) pH (S.U.) Conductivity (umhos/cm)   If not, please explain: Conductivity (umhos/cm)   BIOTIC EVALUATION  Voucher? (Y/N): Voucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Noucher? (Y/N) Aquatic Macroinvertebrates Observed? (Y/N) Noucher? (Y/N) Nouch	265
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION  JISGS Quadrangle Name: Well Stream Order	-
NRCS Soil Map Page: NRCS Soil Map Page: NRCS Soil Map Stream Order	* ^ ×
MISCELLANEOUS  Assertion Conditions? (Y/N): Date of last precipitation:	
MISCELLANEOUS  Base Flow Conditions? (Y/N): Date of last precipitation: 7 [16 201	
Date of last precipitation: 7 10 201 Quantity: 25 Cuantity: 25 Cuantit	
Protograph Information:    Pevaled Turbidity? (Y/N): Note   25   N	
Canopy (% open): 25  Vere samples collected for water chemistry? (Y/N): \( \) (Note lab sample no. or id. and attach results) Lab Number:  Vere samples collected for water chemistry? (Y/N): \( \) (Note lab sample no. or id. and attach results) Lab Number:  Vere samples collected for water chemistry? (Y/N): \( \) (Note lab sample no. or id. and attach results) Lab Number:  Vere samples collected for water chemistry? (Y/N): \( \) (Issolved Oxygen (mg/l) \( \) pH (S.U.) \( \) Conductivity (umhos/cm) \( \)  So the sampling reach representative of the stream (Y/N) \( \) If not, please explain:  BIOTIC EVALUATION  Vereformed? (Y/N): \( \) (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate flield data sheets from the Primary Headwater Habitat Assessment Manual) ish Observed? (Y/N) \( \) Voucher? (Y/N) \( \) Vouche	
Were samples collected for water chemistry? (Y/N):	-
Were samples collected for water chemistry? (Y/N):	
BIOTIC EVALUATION  erformed? (Y/N):	- 12
BIOTIC EVALUATION  erformed? (Y/N):	-
BIOTIC EVALUATION  erformed? (Y/N):	- 1
BIOTIC EVALUATION  (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  ish Observed? (Y/N)  Voucher? (Y	
BIOTIC EVALUATION  Oerformed? (Y/N):	
Operformed? (Y/N):  (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)  (Sish Observed? (Y/N)	
Include important landmarks and other features of Interest for site evaluation and a narrative description of the stream's location	
Threstell (2)	
(Bright) (Scrim)	
Herster ]	Field
Charles Tankmook	
Shrub Transmost	
LOW	
(Torode )	
(Forested)	أمي
	Fiel
50 MM	Fiel
Shrub)	Fiel
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## Primary Headwater Habitat Evaluation Form HHEI Score (sum of metrics 1, 2, 3):

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REAM CHANNEL SINONE!	NATURAL CHAN	INEL ORECOVERED OREC	and the second	WH Streams" for Instruc	
SUBSTRATE (Estimate percent of (Max of 40). Add total number of sign					HI
PE	PERCENT	TYPE	30010 13 34111	PERCENT	Me
BOULDER (>256 mm)-[16 pts]		SILT (3 pt)  LEAF PACKINOOUT	Desire (3)	20	
BEBROCK (16 pt)  COBBLE (65-266 mm) (12 pts)		PINE DETRITUS (3)	AND DESCRIPTION OF THE PARTY OF	100	Sub:
OBBLE (65-266 mm) [12 pits] GRAVEL (2-64 mm) [1 pits]	10	CLAY of HARDPAN	to bil		10
SAND (<2 mm) [6 pts]	70	ARTIFICIAL (3 pts)			14
Total of Percentages of	0	W		(B) O	A ·
Bidr Slabs, Boulder, Cobble, Bedrock RE OF TWO MOST PREDOMINATE SU		S: TOTAL NUMBE	R OF SUBST	RATE TYPES:	
Maximum Pool Depth (Measure the		Maria and the second state of the second	evaluation r	each at the time of	Pool
evaluation. Avoid plunge pools from r		form water pipes) (Check ONLY	one box):		Max
> 30 centimeters [20 pts] > 22.5 - 30 cm [30 pts]		> 5 cm - 10 cm [15			
> 10 - 22.5 cm [25 pts]		O NO WATER OR MC	IST CHANNE	2cm	0
COMMENTS POSTING 1	to flow	MAXIMUM PY	OOL DEPTH	(centimeters):	
BANK FULL WIDTH (Measured as I	he average of 3	Control of the Contro	k ONLY one		Barr
> 4.0 meters (> 13") [30 pts] > 3.0 m - 4.0 m (> 9"7" - 13") [25 pts]		>1.0m - 1.5m (>3 \$1.0m (s 3 3 ) [5 p		pts]	Max
>1.5m - 3.6m (>4'8"-9'7") [20 pts]	AGAIN NAME		4-14-	31	0
COMMENTS		AVERAGE B	ANKFULL W	DTH (meters)	_
A CONTRACTOR OF THE PARTY OF TH		formation must also be complete TY SNOTE: River Left (L) and		looking downstream\$	34
RIPARIAN ZONE AND FLOO RIPARIAN WIDTH	Street Squares and section 1997.	AIN QUALITY			
RIPARIAN WIDTH L R (Per Bink)	FLOODPI L R	AIN QUALITY (Most Predominant per Bank)	LR		
RIPARIAN WIDTH  L R (Per Bunk)  Wide >10m	L R		00	Conservation Tillage	
RIPARIAN WIDTH  L R (Per Bank)  Wide >10m  Moderate 5-10m	FLOODPI L R D D	(Most Predominant per Bank) Mature Forest, Welland	00	Urban or Industrial	
RIPARIAN WIDTH  L R (Per Bank)  Water >1 am  Moderate 5-10m  Narrow <5m		(Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old	00		
RIPARIAN WIDTH  L R (Per Blank)  Water >18m  Moderate S-10m		(Most Predominant per Bank) Mature Forest, Wetland Immature Forest, Shrub or Old Field	00	Urban or Industrial Open Pasture, Row	

	QHEI Score (If Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	0.211 *(
SWWH Name: Dickason RUN	Distance from Evaluated Stream 0.34miles
CWH Name:	Distance from Evaluated Stream
DEWH Name:	Distance from Evaluated Stream
	INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION
USGS Quadrangle Name: WKISHM . (	NRCS Soil Map Page: NRCS Soil Map Stream Order
county: Jackson Co.	Township/City: Coals Lick Tup.
County.	Total State Control of the Control o
MISCELLANEOUS	
Base Flow Conditions? (Y/N): Date of la	st precipitation: 1/10/2017 Quantity: .25
Photograph Information:	and the second s
Elevated Turbidity? (Y/N): N Canopy	(% open): 40 /
	): Note lab sample no. or id. and attach results) Lab Number:
Were samples collected for water chemistry? (Y/N	): 19 (Note lab sample no. or id. and auach results) can number.
Field Measures: Temp (°C) Dissolved	Oxygen (mg/l) pH (S.U.) Conductivity (µmhos/cm)
is the compling reach representative of the stream	(Y/N) If not, please explain:
a me annihing reach representative of me aneam	(1//1) Tillot, preaso expanii.
· <u> </u>	The state of the s
Additional comments/description of pollution impac	
additional comments/description of postulos impact	
the state of the s	tanda a salah
BIOTIC EVALUATION	
A STREET STREET, STREE	
Performed? (Y/N): (If Yes, Record all o	bservations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
	그 아마스 얼마는 것이 되었다. 그는 이 사람이 되는 사람들이 가장 그렇게 되었다. 그는 그 사람들이 어디를 가장 보고 있다.
	at the same of the
teh Observed? (VAL) N Voucher? (VAL)	Salamanders Observed? (Y/N) Voucher? (Y/N) Voucher? (YAN)
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or Tadpoles Observed? (Y/N) Voucher Vo	E DESCRIPTION OF STREAM REACH (This must be completed): atures of Interest for site evaluation and a narrative description of the stream's location

7	11	
/_	4	
	2	24

SITE NAMELOCATION AFP HOPPING TO BUILD SUCTORIVED DRAINAGE AREA (mir)	2.17sami
LENGTH OF STREAM REACH (R) 200 LAT39.081751 LONG.82.919500 RIVER CODE RIVER MILE DATE 7.1917 SCORER KLV COMMENTS SOH-KLV-DILO (EPH)	
NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Ins	tructions
STREAM CHANNEL DINONE / NATURAL CHANNEL DRECOVERED DRECOVERING DRECENT OR NO REMODIFICATIONS:	COVERY
1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.  TYPE  BLDR SLABS (16 pts)  BEDROCK (*256 mm) (16 pts)  COBBLE (66-256 mm) (12 pts)  COBBLE (66-256 mm) (12 pts)  GRAVEL (2-64 mm) (9 pts)  DO MUSK 10 pts)	HHEI Metric Points Substrate Max = 40
GRAVEL (2-64 mm) [8 pts] 20   MUCK [0 pts]   SAND (<2 mm) [6 pts]   QO   D   ARTIFICIAL [3 pts]	19
Total of Percentages of (A) Bid Slabs, Boulder, Cobble, Bedrock (B) SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:  TOTAL NUMBER OF SUBSTRATE TYPES:	A+B
2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of	Pool Depth
evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):  > 30 centimeters [20 pts]	Max = 30
COMMENTS MAXIMUM POOL DEPTH (centimeters):	
3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):  > 4.0 meters (> 13) [30 pts]   > 1.0 m -1.5 m (> 3 3 - 4 8) [15 pts]  > 3.0 m -4.0 m (> 9 7 - 13) [25 pts]   × 1.0 m (> 3 3 - 4 8) [15 pts]  > 1.5 m -3.0 m (> 4 8 - 8 7) [20 pts]   AVERAGE BANKFULL WIDTH (meters)	Bankfull Width Max=30
This information must also be completed  RIPARIAN ZONE AND FLOODPLAIN QUALITY ANOTE: River Left (L) and Right (R) as looking downstream a RIPARIAN WIDTH  FLOODPLAIN QUALITY	
L R (Most Predominant per Bank) L R	
Wide > 10m	
Pield	
□ Narrow <5m □ Residential, Park, New Field □ Crop Crop □ None □ Fenced Pasture □ Mining or Construction	•
FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Stream Flowing  Subsurface flow with isolated pools (Interstitial)  COMMENTS  FLOW REGIME (At Time of Evaluation) (Check ONLY one box):  Maist Channel, isolated pools, no flow (Intermitter Dry channel, no water (Ephemeral)	f)
SINUOSITY (Number of bends per 61 m (200 t) of channel) (Check ONLY one box):   None	
STREAM GRADIENT ESTIMATE  Flat (0.5 N/100 ft) Flat to Moderate	500 ft)

QHEI PERFORMED? - Yes No QHEI Score (If	Yes, Attach Completed QHEI Form)
DOWNSTREAM DESIGNATED USE(S)	1. 200
SWH Name: Meadow Rum	Distance from Evaluated Stream
CWH Name:	Distance from Evaluated Stream
EWH Name:	Distance from Evaluated Stream
MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WAT	
	Soli Map Page: NRCS Soli Map Stream Order
County: Jackson (0 Township / City:	Coal Twp.
MISCELLANEOUS	- 4
Base Flow Conditions? (Y/N): Date of last precipitation:	Quantity: 25"
Photograph Information:	
Elevated Turbidity? (Y/N): N Canopy (% open): 301.	
	2 XI
Were samples collected for water chemistry? (Y/N): (Note lab sample n	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) 1 f not, please ex	plain:
The second secon	
Additional comments/description of pollution impacts:	and the state of t
POTO DALIATOR	
ID number, Include appropriate field data sheets for	ns optional. NOTE: all voucher samples must be labeled with the site om the Primary Headwater Habitat Assessment Manual)  (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N)
Performed? (Y/N): (If Yes, Record all observations. Voucher collection ID number. Include appropriate field data sheets in Sish Observed? (Y/N) Voucher? (Y/N) Salamanders Observed? (Y/N) Voucher? (Y/N) Aquatic Macroir	om the Primary Headwater Habitat Assessment Manual)  (Y/N) Voucher? (Y/N) Voucher? (Y/N) Voucher? (Y/N) N
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# APPENDIX D Ohio Rapid Assessment Method for Wetlands (ORAM) Data Forms



Site: AEP-Happer to Rhode	Rater(s): KLV	Date: 7   3   2017
		-PEM-CATMODZ
max 6 pts. subtotal Select one size class a	nd assign score. 20.2ha) (6 pts)	
	res (10.1 to <20.2ha) (5 pts)	
	res (4 to <10.1ha) (4 pts)	
	es (1.2 to <4ha) (3 pts) es (0.12 to <1.2ha) (2pts)	
0.1 to <0.3 a	cres (0.04 to <0.12ha) (1 pt)	
	0.04ha) (0 pts)	
4 4 Metric 2. Up	land buffers and surround	ding land use.
max 14 pts. subtotal 2a. Calculate average	buffer width. Select only one and assign score.	Do not double check.
WIDE. Buffe	ers average 50m (164ft) or more around wetland   uffers average 25m to <50m (82 to <164ft) aroun	perimeter (7)
	Buffers average 10m to <25m (32ft to <82ft) around	
VERY NARE	OW. Buffers average <10m (<32ft) around wetla	and perimeter (0)
	nding land use. Select one or double check and 2nd growth or older forest, prairie, savannah, wi	
	eld (>10 years), shrub land, young second growth	
	LY HIGH. Residential, fenced pasture, park, con	
	n, industrial, open pasture, row cropping, mining,	construction. (1)
18   22   Metric 3. Hy	drology.	
max 30 pts. subtotal 3a. Sources of Water.	Score all that apply. 3b	connectivity. Score all that apply.
High pH grou		100 year floodplain (1)
Other ground Precipitation		Between stream/lake and other human use (1) Part of wetland/upland (e.g. forest), complex (1)
	ermittent surface water (3)	Part of riparian or upland corridor (1)
	, , ,	d. Duration inundation/saturation. Score one or dbl check
3c. Maximum water de	pth. Select only one and assign score.	Semi- to permanently inundated/saturated (4) Regularly inundated/saturated (3)
0.4 to 0.7m (	15.7 to 27.6in) (2)	Seasonally inundated (2)
<0.4m (<15.		Seasonally saturated in upper 30cm (12in) (1)
	tural hydrologic regime. Score one or double ch	
Recovered (	e apparent (12) Check all disturbances observe	point source (nonstormwater)
Recovering (		filling/grading
Recent or no	recovery (1) dike	road bed/RR track
	weir stormwater input	dredging other
11.5   33.5   Metric 4. Ha	bitat Alteration and Devel	opment.
	nce. Score one or double check and average.	
None or non		
Recovered (		
Recent or no	recovery (1)	
4b. Habitat developme Excellent (7)	nt. Select only one and assign score.	
Very good (6	)	
Good (5)		
Moderately g	ood (4)	
Fair (3) Poor to fair (	2)	
Poor (1)	NEW NEW	
	Score one or double check and average.	
	e apparent (9) Check all disturbances observe	
Recovered (I		shrub/sapling removal herbaceous/aquatic bed removal
	recovery (1) clearcutting	sedimentation
00.0	selective cutting	dredging
550	woody debris removal toxic pollutants	farming nutrient enrichment
subtotal this page		
last revised 1 February 2001 jjm	M	

Site:A		coner to		r(s): KU		Date: 7   3   2017
33.5 W001 - PEM - CATMODZ subtotal first page						
	33.5		. opoolal troula.			
max 10 pts.	subtotal	Bog ( Fen ( Old g Matur Lake Lake Lake Relict Know Signif	10) rowth forest (10) re forested wetland (5) Erie coastal/tributary wetland- Erie coastal/tributary wetland- Plain Sand Prairies (Oak Ope t Wet Prairies (10) n occurrence state/federal thre ficant migratory songbird/wate gory 1 Wetland. See Question	restricted hydro nings) (10) eatened or enda r fowl habitat or n 1 Qualitative R	angered species (10) usage (10) lating (-10)	
2	35.5	Metric 6	. Plant commun	ities, int	erspersion, microto	opography.
max 20 pts.	subtotal	6a. Wetland Ve	egetation Communities.	Vegetation	Community Cover Scale	
			nt using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2	
		/ Aqua	tic bed	1	Present and either comprises sm	nall part of wetland's
		Emer	~		vegetation and is of moderate	2006-1171
		Shrub			significant part but is of low qua	
		() Fores		2	Present and either comprises sig	
		Q Mudfl			vegetation and is of moderate	quality or comprises a small
			water	-	part and is of high quality	
		Other		3	Present and comprises significar	
			plan view) Interspersion.	×	vegetation and is of high qualit	у
Select only one.						
		High	* 15 W 1954 Market		escription of Vegetation Quality	
			rately high(4)	low	Low spp diversity and/or predom	
			rate (3)	=	disturbance tolerant native spe	
		-	rately low (2)	mod	Native spp are dominant compor	
		Low (	19.5045		although nonnative and/or dist	
		None	0.8 0.81		can also be present, and speci	
			of invasive plants. Refer		moderately high, but generally	
			M long form for list. Add	10.1.15	threatened or endangered spp	
		or deduct points	•	high	A predominance of native specie	
			sive >75% cover (-5)		and/or disturbance tolerant nat	* * *
		- Comments	rate 25-75% cover (-3)		absent, and high spp diversity	
		-	se 5-25% cover (-1)	9	the presence of rare, threatene	ed, or endangered spp
			y absent <5% cover (0)	84del -4	LOWER WILLS CLASS CHARLES	
		Abser	` '		Open Water Class Quality	
		6d. Microtopog	rapny. nt using 0 to 3 scale.	1	Absent <0.1ha (0.247 acres) Low 0.1 to <1ha (0.247 to 2.47 a	eros)
			tated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.8	
			se woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	bacies
			ling dead >25cm (10in) dbh		High 4ha (9.86 acres) of high	
			ing dead >25cm (10m) don iibian breeding pools	Microtopoo	raphy Cover Scale	
		Ampi	insian preeding pools	0	Absent	
				1	Present very small amounts or if	more common
					of marginal quality	
				2	Present in moderate amounts, b	
					quality or in small amounts of h	
				3	Present in moderate or greater a	mounts
25.5					and of highest quality	

CATMOD2

End of Quantitative Rating. Complete Categorization Worksheets.

Site: AEY-	Heppiner to Rhodes	Rater(s): KLV	Date: 7   8   201
2 2	Metric 1. Wetland	Area (size). W00	2-PEM-CATMODZ
max 6 pts. subtota	Select one size class and assign so >50 acres (>20.2ha) (6 p 25 to <50 acres (10.1 to 10 to <25 acres (4 to <10 3 to <10 acres (1.2 to <4	ts) <20.2ha) (5 pts) .1ha) (4 pts) na) (3 pts)	
9	0.1 to <0.3 acres (0.04 to <0.1 acres (0.04ha) (0 pt	<0.12ha) (1 pt)	
5 7	Metric 2. Upland b	uffers and surround	ding land use.
max 14 pts. subtofa	WIDE. Buffers average & MEDIUM. Buffers average & NARROW. Buffers average VERY NARROW. Buffers average VERY LOW. 2nd growth LOW. Old field (>10 year	iom (164ft) or more around wetland ge 25m to <50m (82 to <164ft) arounge 10m to <25m (32ft to <82ft) arounge average <10m (<32ft) around wetlage. Select one or double check and or older forest, prairie, savannah, wis), shrub land, young second growth	perimeter (7) Id wetland perimeter (4) Ind wetland perimeter (1) Ind wetland perimeter (1) Ind perimeter (0) Ind wetland perimeter (0) Individual average. Idlife area, etc. (7) In forest. (5)
	HIGH. Urban, industrial,	open pasture, row cropping, mining,	nservation tillage, new fallow field. (3) construction. (1)
18 25	Metric 3. Hydrolog	y.	***
max 30 pts. subtotal	3a. Sources of Water. Score all the High pH groundwater (5) Other groundwater (3)	at apply. 3b	Connectivity. Score all that apply.     100 year floodplain (1)     Between stream/lake and other human use (1)
	Precipitation (1) Seasonal/Intermittent sur		Part of wetland/upland (e.g. forest), complex (1) Part of riparian or upland corridor (1)
z	3c. Maximum water depth. Select >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6i <a href="https://www.commons.org/lines/bases/bases/">water (</a> 3c. Maximum water depth. Select >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (1)	only one and assign score.	Duration inundation/saturation. Score one or dbl chec Semi- to permanently inundated/saturated (4) Regularly inundated/saturated (3) Seasonally inundated (2) Seasonally saturated in upper 30cm (12in) (1)
	3e. Modifications to natural hydrolo		eck and average.
к :	None or none apparent (1) Recovered (7) Recovering (3) Recent or no recovery (1)	ditch	point source (nonstormwater) filling/grading road bed/RR track dredging other
11.5 36.9	Metric 4. Habitat A	Iteration and Devel	opment.
max 20 pts. subtotal	4a. Substrate disturbance. Score of None or none apparent (4) Recovered (3) Recovering (2)		
8 8	Recent or no recovery (1) 4b. Habitat development. Select or Excellent (7) Very good (6) Good (5)	nly one and assign score.	
	Moderately good (4) Fair (3) Poor to fair (2) Poor (1)		
	4c. Habitat alteration. Score one of None or none apparent (9) Recovered (6) Recovering (3) 4.5	1	d shrub/sapling removal herbaceous/aquatic bed removal
36.5	Recent or no recovery (1)	clearcutting selective cutting woody debris removal toxic pollutants	sedimentation dredging farming nutrient enrichment
subtotal this p	-		

Site: AEP	- Happier to Rhodes Rater	(s): KLV	Date: 7 18 2017
3 subtota	u.5 I first page	WC	002-PEM-CATMODZ
0 31	Metric 5. Special Wetlan	ds.	
max 10 pts. sui	Check all that apply and score as indicated.  Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10) Known occurrence state/federal thre	estricted hydro ings) (10)	logy (5)
	Significant migratory songbird/water Category 1 Wetland. See Question		- · ·
4 4			erspersion, microtopography.
max 20 pts. sub	ototal 6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale
	Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
	Aquatic bed Emergent		Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a
	0 Shrub	9	significant part but is of low quality
	O Forest	2	Present and either comprises significant part of wetland's
	O Mudflats		vegetation and is of moderate quality or comprises a small
	Open water Other	3	part and is of high quality  Present and comprises significant part, or more, of wetland's
	6b. horizontal (plan view) Interspersion.	3	vegetation and is of high quality
	Select only one.		Togotation and to a major quanty
	High (5)	Narrative D	escription of Vegetation Quality
	Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or
	Moderate (3)  Moderately low (2)	mod	disturbance tolerant native species  Native spp are dominant component of the vegetation,
	Low (1)	CWCEEK	although nonnative and/or disturbance tolerant native spp
	None (0)		can also be present, and species diversity moderate to
	6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare
	to Table 1 ORAM long form for list. Add		threatened or endangered spp
	or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)	high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always,
	Sparse 5-25% cover (-1) Nearly absent <5% cover (0)		the presence of rare, threatened, or endangered spp
	Absent (1)	Mudflat and	Open Water Class Quality
	6d. Microtopography.	10	Absent <0.1ha (0.247 acres)
	Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)
	Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acres)
	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more
	Standing dead >25cm (10in) dbh	Microtopog	ranhy Cover Scale
	Amphibian breeding pools	0	raphy Cover Scale 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
40.5		-	and or ingreen quanty
Cod MOD 2	End of Quantitative Rating.	Complete	e Categorization Worksheets.

8

Site: All Ho	opner to knodes Rater(s): KLV	Date: 7/17/20/1
0 0	Metric 1. Wetland Area (size). W003 - PEM - CA	FT2
max 6 pts. subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
4 4	Metric 2. Upland buffers and surrounding land use	
max 14 pls. subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrub land, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fall HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
17 21	Metric 3. Hydrology.	
max 30 pts. subtotal	Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score. >0.7 (27.6in) (3) 0.4 to 0.7m (15.7 to 27.6in) (2)  Part of wetland/ Part of wetland/ Part of wetland/ Part of permain of seasonal part of wetland/ Part of vetland/ Part of wetland/ Part of vetland/ P	lain (1) n/lake and other human use (1) upland (e.g. forest), complex (1) or upland corridor (1) sturation. Score one or dbl check nently inundated/saturated (4) ated/saturated (3)
×	None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)  Check all disturbances observed ditch Dittile Ditti	
8 29	Metric 4. Habitat Alteration and Development.	
max 20 pts. subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score. Excellent (7) Very good (6) Good (5) Moderately good (4)	
	Fair (3) Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Check all disturbances observed	
subtotal this pa	Recovered (6) Recovering (3) Recent or no recovery (1)	uatic bed removal

7

Site: A	EP-HO	comer to Rhoto Rater	s): KLV	Date: 7 7 2017
SL	29	lge	W003 -	PEM-CAT2
0	29	Metric 5. Special Wetland	ds.	
max 10 pts.	subtotal	Check all that apply and score as indicated.  Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland-ur Lake Erie coastal/tributary wetland-re Lake Plain Sand Prairies (Oak Openi Relict Wet Prairies (10) Known occurrence state/federal threa Significant migratory songbird/water 1 Category 1 Wetland. See Question 1	estricted hydrolo ngs) (10) atened or endar fowl habitat or u l Qualitative Ra	ngered species (10) usage (10) uting (-10)
1	30	Metric 6. Plant communi	ties, inte	erspersion, microtopography.
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation C	Community Cover Scale
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
		Aquatic bed	1	Present and either comprises small part of wetland's
		Emergent		vegetation and is of moderate quality, or comprises a
		Shrub		significant part but is of low quality
		Forest	2	Present and either comprises significant part of wetland's
		Mudflats		vegetation and is of moderate quality or comprises a small
		Open water	07	part and is of high quality
		Other	3	Present and comprises significant part, or more, of wetland's
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality
		Select only one.		
		High (5)	Narrative De	scription of Vegetation Quality
		Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or
		Moderate (3)		disturbance tolerant native species
		Moderately low (2)	mod	Native spp are dominant component of the vegetation,
		Low (1)		although nonnative and/or disturbance tolerant native spp
		None (0)		can also be present, and species diversity moderate to
		6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare
		to Table 1 ORAM long form for list. Add	high	threatened or endangered spp  A predominance of native species, with nonnative spp
		or deduct points for coverage	high	and/or disturbance tolerant native spp absent or virtually
		Extensive >75% cover (-5)		,
		Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp
		Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered spp
		Nearly absent <5% cover (0)	Mudflet and	Open Water Class Quality
		Absent (1)	0	Absent <0.1ha (0.247 acres)
		6d. Microtopography. Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 acres)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acres)
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more
		Standing dead >25cm (10in) dbh		Tigh 4ha (3.00 acres) or more
		Amphibian breeding pools	Microtopogr	aphy Cover Scale
		Tamphibian preeding pools	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
			3	and of highest quality
20			in-	and or riightest quarty

End of Quantitative Rating. Complete Categorization Worksheets.

Site:A	B-H	poner to Rhodes Rater(s): KLV	Date: 7 18 2017
2	2	Metric 1. Wetland Area (size). W004 PUB-CAT2	ķ (
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
5	7	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrub land, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fall HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
25	32	Metric 3. Hydrology.	
max 30 pts.	subtotal	Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score. >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  Part of wetland/u	ain (1) //lake and other human use (1) //lake and corridor (1) //la
13	45	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)  Poor (1)  4c. Habitat alteration. Score one or double check and average.	
sub	45 ototal this page	None or none apparent (9) Recovered (6) Recovering (3) Recent or no recovery (1) Recent or no recovery (1) Recovering (3) Recent or no recovery (1) Recovering (3) Rec	atic bed removal

7

Wood - PUB-CATZ    Wood - PUB-	Site:A	EP-H	cppner to Rhodes Rate	r(s): KL	Date: 7 18/17
Metric 5. Special Wetlands.  Check all that apply and score as indicated.  Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Eric coastal/finibutary wetland-unrestricted hydrology (10) Lake Plain Sand Prairies (Oak Openings) (10) Relict Wetl Prairies (10) Relict Wetl Prairies (10) Relict Wetl Prairies (10) Relict Wetler Plains (10	si	45	age	WO	004 - PUB-CATZ
Check all that apply and score as indicated.  Bog (10) Fen (10) Muture forested wetland (5) Lake Eric coastabiributary wetland-unrestricted hydrology (10) Lake Eric coastabiributary wetland-restricted hydrology (6) Lake Plain Sand Prairies (0ak Openings) (10) Relict Wet Prairies (10	0	45	Metric 5. Special Wetla	nds.	
Metric 6. Plant communities, interspersion, microtopography.  6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.  Aquatic bed Emergent Shrub Forest Open water Other Oth			Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland- Lake Erie coastal/tributary wetland- Lake Plain Sand Prairies (Oak Ope Relict Wet Prairies (10) Known occurrence state/federal thr Significant migratory songbird/wate	restricted hydro enings) (10) reatened or end er fowl habitat or	angered species (10)
Score all present using 0 to 3 scale.    Aquatic bed   Chemergent   Ch			-, I		
Score all present using 0 to 3 scale.  Aquatic bed Shrub Emergent Shrub Forest Other Other Other Shrub High (5) Moderately high(4) Moderately high(4) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-3) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent or oromprises \$0.1ha (0.247 acres) Moderate 25-75% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetation and is of moderate quality, or comprises a significant part but is of low quality vegetation and is of moderate quality or comprises a significant part of wetland's vegetation and is of high quality  Narrative Description of Vegetation Quality  low Low spp diversity and/or predominance of nonnative or disturbance tolerant native species mod Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp absent or virtually absent <5% cover (-3) Absent (1)  6d. Microtopography. Score all present using 0 to 3 scale.  Vegetation and is of moderate quality, or comprises a significant part but is of low quality vegetation and is of moderate quality or comprises a significant part but is of low quality.  Narrative Description of Vegetation Quality low Low spp diversity and/or predominance of nonnative or disturbance tolerant native species mod Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp absent or virtually absent species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent species.  1 Low 0.1 to <1ha (0.247 acres) 1 Low 0.1 to <1ha (0.247 acres) 2 Moderate 1 t			]		
Aquatic bed Emergent Shrub Forest Mudflats Open water Other 6b. horizontal (plan view) Interspersion. Select only one. High (5) Moderately high(4) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-5) Moderate 25-75% cover (-7) Nearly absent <5% cover (-7) Nearly absent <5% cover (-7) Nearly absent <5% cover (-7) Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks O Coarse woody debris >16cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  1 Present and either comprises small part of wetland's vegetation and is of high quality 1 Present is moderate quality or comprises a small part and is of high quality or comprises a small part and is of high quality or more, of wetland's vegetation and is of high quality 1 Present and comprises significant part, or more, of wetland's vegetation and is of high quality or comprises a small part and is of high quality or comprises a small part and is of high quality or more, of wetland's vegetation and is of high quality or comprises a small part and is of high quality or comprises a small part and is of high quality or comprises a small part and is of high quality or comprises a small part and is of high quality or comprises a small part and is of high quality or more, of wetland's vegetation and is of high quality or more, of wetland's vegetation and is of high quality or present and comprises significant part, or more, of wetland's vegetation and is of high quality  Narrative Description of Vegetation and is of high quality    Dow Low spp diversity and/or predominance of nonnative or disturbance tolerant native species diversity moderate to moderate and part and is of high quality vegetation and is of	max zu pis.	Subtotal			
Shrub   Shru					
Shrub   Significant part but is of low quality   Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality				101	711-111-11
Forest    Mudflats   Qopen water   Other				72	the first of the country of the coun
Mudflats Open water Other Othe					
Open water Other O				2	
Select only one.  High (5) Moderately high(4) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-5) Moderate 25-75% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks O coarse woody debris >15cm (6in) O standing dead >25cm (10in) dbh Amphibian breeding pools  3 Present and comprises significant part, or more, of wetland's vegetation and is of high quality vegetation and is of high quality  Low spp diversity and/or predominance of nonnative or disturbance tolerant native species mod Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp and/or disturbance tolerant native spp assent or virtually absent, and high spp diversity and often but not always, the presence of rare fare threatened or endangered spp  Mudflat and Open Water Class Quality  0 Absent <0.1ha (0.247 acres) 1 Low 0.1 to <1ha (0.247 to 2.47 acres) 2 Moderate 1 to <4ha (2.47 to 9.88 acres) 3 High 4ha (9.88 acres) or more  Microtopography Cover Scale 0 Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality					
Select only one.  High (5)  Moderately high(4)  Moderatel (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-1)  Nearly absent <5% cover (-1)  Nearly absent <5% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  ✓ Vegetated hummucks/fussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh  Amphibian breeding pools  ✓ Resent in moderate amounts of high quality  vegetation and is of high quality  Narrative Description of Vegetation Quality  Low Sp diversity and/or predominance of nonnative or disturbance tolerant native spp and Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately midp, but generally w/o presence of rare threatened or endangered spp and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately midp, but generally w/o presence of rare threatened or endangered spp and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately midp, but generally w/o presence of rare threatened or endangered spp and/or disturbance tolerant native spp can also be present, and species diversity and or set septiments.  A predominant component of the vegetation, although and withough and the vegetation, although and set septiments and/or disturbance tolerant native spp and/or disturbance tolerant native species with nonnative and/or disturbance tolerant native					
Select only one.    High (5)				3	
High (5) Moderately high(4) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks C Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  O Absent Present very small amounts or lighest quality  low Surversity and/or predominance of nonnative or disturbance tolerant native spo can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp  Approximately high, but generally w/o presence of rare threatened or endangered spp  Approximately high, but generally w/o presence of rare threatened or endangered spp and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp  Approximately high, but generally w/o presence of rare threatened or endangered spp and/or disturbance tolerant native spo can also be present, and species diversity moderate to read species, with nonnative spo and/or disturbance tolerant native spo can also be present, and species diversity moderate to read species diversity and/or disturbance tolerant native spo can also be present, and species diversity and often vertices of the vegetation, although nonnative and/or disturbance tolerant native spo can also be present, and species diversity moderate to read subversity moderate or generally w/o presence of rare threatened or endangered spp  Mudflat and Open Water Class Quality  D Absent 1 (0.247 to 2.47 to 9.88 acres)  Absent 1 (0.247 to 2.47			TO THE STORY AND TO STORY AND THE STORY AND		vegetation and is of high quality
Moderately high(4)   Moderate (3)   Moderately low (2)   Low (1)   None (0)			Select only one.		0 0 00 00 0 00
Moderate (3)   disturbance tolerant native species			High (5)	Narrative D	
Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Moderate 25-75% cover (-1) Nearly absent downward of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp  high A predominance of native species, with nonnative spp and/or disturbance tolerant native spp and/or disturbance tolerant native spp and/or disturbance of native species, with nonnative spp and/or disturbance tolerant native spp and/or disturbance tolerant native spp and/or disturbance tolerant native spp and or endangered spp  Mudflat and Open Water Class Quality  Absent (-1)  Low 0.1 to <1ha (0.247 acres)  Microtopography Cover Scale  Migh 4ha (9.88 acres) or more  Microtopography Cover Scale  Absent  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality or in small amounts or greater amounts				low	
Absent (1)  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Absent (1)  Standing dead >25cm (10in) dbh Amphibian breeding pools  Low (1)  Although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally who presence of rare threatened or endangered spp  high A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp  Mudflat and Open Water Class Quality  Mudflat and Open Water Class Quality  Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Microtopography Cover Scale  Microtopography Cover Scale  Amphibian breeding pools  Microtopography Cover Scale  Absent  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts			Moderate (3)		
None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)     Moderate 25-75% cover (-3)     Sparse 5-25% cover (-1)     Nearly absent <5% cover (0)     Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks     Coarse woody debris >15cm (6in)     Standing dead >25cm (10in) dbh     Amphibian breeding pools  Microtopography Cover Scale  0 Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality 3 Present in moderate or greater amounts			Moderately low (2)	mod	
6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  Microtopography Cover Scale  Nearly absent <5% cover (1) Absent (2) Tho <1ha (0.247 to 9.88 acres) Moderate 1 to <4ha (2.47 to 9.88 acres) Microtopography Cover Scale  Nearly absent <0.1 to <1ha (0.247 to 9.88 acres) Migh Apphibian breeding pools  Mudflat and Open Water Class Quality  Moderate 1 to <4ha (2.47 to 9.88 acres)  Migh Apphibian breeding pools  Mudflat and Open Water Class Quality  Nearly absent <0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  Migh Absent <0.1 to <1ha (0.247 to 9.88 acres)  Migh Absent <0.1 to <1ha (0.247 to 9.88 acres)  Amphibian breeding pools  Microtopography Cover Scale  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts			Low (1)		
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bigh A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp    Mudflat and Open Water Class Quality			<ol><li>Coverage of invasive plants. Refer</li></ol>		
Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh  Amphibian breeding pools  Microtopography Cover Scale  0 Absent  1 Present very small amounts or if more common of marginal quality  2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality  3 Present in moderate or greater amounts			to Table 1 ORAM long form for list. Add	-	
Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  Microtopography Cover Scale  Microtopography Cover Scale  Description of marginal quality  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality  Present in moderate or greater amounts			or deduct points for coverage	high	A predominance of native species, with nonnative spp
Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  Microtopography Cover Scale  Microtopography Cover Scale  Description of marginal quality  Present in moderate amounts, but not of highest quality  Reserved the presence of rare, threatened, or endangered spp  Mudflat and Open Water Class Quality  Description of Mudflat and Open Water Class Quality  Description of Mudflat and Open Water Class Quality  Description of Number Class Quality  Description of			Extensive >75% cover (-5)		and/or disturbance tolerant native spp absent or virtually
Nearly absent <5% cover (0) Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  Microtopography Cover Scale  Microtopography Cover Scale  Nearly absent <5% cover (0) Absent <0.1ha (0.247 acres)  Low 0.1 to <1ha (0.247 to 2.47 acres)  Moderate 1 to <4ha (2.47 to 9.88 acres)  High 4ha (9.88 acres) or more  Microtopography Cover Scale  Absent  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts			Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always,
Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  Microtopography Cover Scale  Microtopography Cover Scale  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts			Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered spp
Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  Microtopography Cover Scale  Microtopography Cover Scale  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts			Nearly absent <5% cover (0)		
Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  O Absent Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Research Present in moderate or greater amounts				Mudflat and	d Open Water Class Quality
Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  Description of marginal quality Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts or greater amounts  Present in moderate or greater amounts			6d. Microtopography.	0	Absent <0.1ha (0.247 acres)
Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  O Absent  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts				- 1	
Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  O Absent  1 Present very small amounts or if more common of marginal quality  2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality  3 Present in moderate or greater amounts				2	Moderate 1 to <4ha (2.47 to 9.88 acres)
Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  0 Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts				3	
Amphibian breeding pools  Microtopography Cover Scale  0 Absent  1 Present very small amounts or if more common of marginal quality  2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality  3 Present in moderate or greater amounts					
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				Microtopoo	graphy Cover Scale
Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts					
of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts					Track Control (Control Control
2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts					
quality or in small amounts of highest quality  Present in moderate or greater amounts				- 2	
3 Present in moderate or greater amounts				2	
				- 2	
and or riightest quality				3	_
	50			-	and or inglinear specially

CAT2

End of Quantitative Rating. Complete Categorization Worksheets.

Site: A	tt-H	pprre	r to Knodo Rater	(s): KLV		Date: 7   18   201
sı	31.5 ubtotal first page	8 att			W005 - PEM - CATZ	
0	31.5	Metr	ic 5. Special Wetlan	ds.		
max 10 pts.	subtotal (	heck al	I that apply and score as indicated.			
			Bog (10)			
			Fen (10) Old growth forest (10)			
			Mature forested wetland (5)			
			Lake Erie coastal/tributary wetland-ւ			
			Lake Erie coastal/tributary wetland-r		ology (5)	
			Lake Plain Sand Prairies (Oak Open Relict Wet Prairies (10)	nings) (10)		
			Known occurrence state/federal thre	atened or end	angered species (10)	
			Significant migratory songbird/water			
			Category 1 Wetland. See Question	1 Qualitative F	Rating (-10)	
2	215	<b>Metr</b>	ic 6. Plant commun	ities, int	erspersion, microt	opography.
2	24:2				variable to the	The State of the S
max 20 pts.			and Vegetation Communities.		Community Cover Scale	
	S	core all	present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2	
	1.0	14	Aquatic bed Emergent	1	Present and either comprises sn vegetation and is of moderate	
		6	Shrub	35	significant part but is of low qu	The state of the s
		0	Forest	2	Present and either comprises sig	gnificant part of wetland's
		0	Mudflats		vegetation and is of moderate	quality or comprises a small
		0	Open water		part and is of high quality	
	6	h boriz	Otherontal (plan view) Interspersion.	3	Present and comprises significative vegetation and is of high quality	
		elect on			Togotation 2.10 to 0.111g/1 quant	2.
			High (5)	Narrative D	escription of Vegetation Quality	
			Moderately high(4)	low	Low spp diversity and/or predom	
		V	Moderate (3) Moderately low (2)	mod	disturbance tolerant native spe Native spp are dominant compo-	
		_	Low (1)	mod	although nonnative and/or dist	
			None (0)		can also be present, and spec	
			rage of invasive plants. Refer		moderately high, but generally	
			1 ORAM long form for list. Add	high	threatened or endangered spp  A predominance of native specie	
	OI	deduci	points for coverage Extensive >75% cover (-5)	high	and/or disturbance tolerant na	
		_	Moderate 25-75% cover (-3)		absent, and high spp diversity	
			Sparse 5-25% cover (-1)		the presence of rare, threaten	ed, or endangered spp
		$\times$	Nearly absent <5% cover (0)			
	6.	d Miore	Absent (1) topography.	Mudflat and	Open Water Class Quality Absent <0.1ha (0.247 acres)	
			present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 a	acres)
		_	Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.8	Control of the Contro
		0	Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more	S
		U	Standing dead >25cm (10in) dbh	Minneton	wantu Cavas Saala	
		()	Amphibian breeding pools	Microtopog 0	Absent	
				1	Present very small amounts or it of marginal quality	more common
				2	Present in moderate amounts, b quality or in small amounts of	
				3	Present in moderate or greater a	

34.5 CAT2

Site: A	HEP-H	oppner to Rhodes F	Rater(s): KLV	Date: 7   18	2017
s	37.5	i		06 · PEM-CATMODZ	
0	37.5	Metric 5. Special We	tianas.		
max 10 pts.	subtotal	Check all that apply and score as indicated Bog (10) Fen (10)	ated.		1
		Old growth forest (10)  Mature forested wetland (5)  Lake Erie coastal/tributary w  Lake Erie coastal/tributary w  Lake Plain Sand Prairies (Oa	etland-restricted hydrol		
		Relict Wet Prairies (10)  Known occurrence state/fede Significant migratory songbir  Category 1 Wetland. See Qu	eral threatened or enda d/water fowl habitat or uestion 1 Qualitative R	usage (10) ating (-10)	
3	40.5	Metric 6. Plant comr	nunities, int	erspersion, microtopography	<b>'.</b>
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguo	
		Aquatic bed	1	Present and either comprises small part of wetland's	
		Emergent		vegetation and is of moderate quality, or comprise	s a
		Shrub		significant part but is of low quality	
		Forest	2	Present and either comprises significant part of wetl	and's
		Mudflats		vegetation and is of moderate quality or comprises	s a small
		Open water		part and is of high quality	
		Other	3	Present and comprises significant part, or more, of v	wetland's
		6b. horizontal (plan view) Interspersion	<b>1.</b>	vegetation and is of high quality	
		Select only one.			
		High (5)	Narrative De	escription of Vegetation Quality	
		Moderately high(4)	low	Low spp diversity and/or predominance of nonnative	or
		Moderate (3)	1011	disturbance tolerant native species	
		Moderately low (2)	mod	Native spp are dominant component of the vegetation	nn .
		Name of the last o	mod	although nonnative and/or disturbance tolerant na	
		Low (1)		can also be present, and species diversity modera	
		None (0)		moderately high, but generally w/o presence of rar	
		6c. Coverage of invasive plants. Refer		threatened or endangered spp	
		to Table 1 ORAM long form for list. Ad-			00
		or deduct points for coverage	high	A predominance of native species, with nonnative species, with nonnative species and appears of the species of	
		Extensive >75% cover (-5)		and/or disturbance tolerant native spp absent or vi	•
		Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not a	
		Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered s	pp
		Nearly absent <5% cover (0)		The state of the s	
		Absent (1)		Open Water Class Quality	
		6d. Microtopography.	10	Absent <0.1ha (0.247 acres)	
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)	
		Vegetated hummucks/tussuc		Moderate 1 to <4ha (2.47 to 9.88 acres)	
		Coarse woody debris >15cm	(6in) 3	High 4ha (9.88 acres) or more	
		Standing dead >25cm (10in)	dbh		
		Amphibian breeding pools	Microtopog	raphy Cover Scale	_
		300	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	-
	ľ			and of highest quality	
1105			-		_

CATMOD2

Site:	YEY-1	troppher to Knodes   Rater(s): KLV	Date: 7/18/2017
7	7	Metric 1. Wetland Area (size). W007 -PUB - CAT2	
max 6 pts.	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)  0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)  <0.1 acres (0.04ha) (0 pts)	
8	10	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrub land, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	ow field. (3)
15	25	Metric 3. Hydrology.	
max 30 pts.	subtotal	Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5)  3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  <0.4m (<15.7in) (1)  3e. Modifications to natural hydrologic regime. Score one or double check and average.  None or none apparent (12)    Part of wetland/u   Part of vetland/u   Part of riparian or   Part of vetland/u   Part of vetland/u   Part of vetland/u   Part of wetland/u   Part of viparian or   Part of wetland/u   Part of viparian or   Pa	sin (1)  lake and other human use (1) pland (e.g. forest), complex (1) r upland corridor (1) uration. Score one or dbl check ently inundated/saturated (4) ted/saturated (3) lated (2) ated in upper 30cm (12in) (1)
96		Recovered (7) Recovering (3) Recent or no recovery (1) Recovering (3) Recent or no recovery (1) Recovering (3) Recent or no recovery (1) Recovering (3) Recovering (4) Recovering (4) Recovering (5) Recovering (6) Reco	
le	31	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4) Recovered (3) Recovering (2) Recent or no recovery (1)  4b. Habitat development. Select only one and assign score. Excellent (7)	
		Very good (6) Good (5) Moderately good (4) Fair (3) Poor to fair (2) Poor (1)  4c. Habitat alteration. Score one or double check and average.  None or none apparent (9) Recovered (6)  Check all disturbances observed Shrub/sapling ren	
	31 Dotal this pa	Recovering (3) Recent or no recovery (1) Rec	

Shrub	Site: A	EP-H	appner to Rhodes Ran	ter(s): KLV	Date: 7   18   2017	
Check all that apply and score as indicated.    Gog (10)	sı	51_ 32				
Bog (10)   Fen (10)   Old growth forest or growth forest	0	31	Metric 5. Special Wetl	ands.		
Known occurrence state/federal threatened or endangered species (10)   Significant migratory songibir/dwater fown habitat or usage (10)	max 10 pts.	subtotal	Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetla Lake Erie coastal/tributary wetla Lake Plain Sand Prairies (Oak C	nd-unrestricted hydro		
Sorre all present using 0 to 3 scale.    Aquatic bed   Present using 0 to 3 scale.     Aquatic bed   Present using 0 to 3 scale.     Aquatic bed   Present using 0 to 3 scale.     Aquatic bed   Present and either comprises small part of welland's vegetation and is of moderate quality, or comprise significant part but is of low quality     Appendix   Present and either comprises significant part of well and significant part but is of low quality     Appendix   Present and either comprises significant part of well using 0 to 3 scale.     Appendix   Present and either comprises significant part of well using 0 to 3 scale.     Appendix   Present and either comprises significant part of well using 0 to 3 scale.     Appendix   Present and either comprises significant part of well using 0 to 3 scale.     Appendix   Present and is of moderate quality or comprises significant part of well used to find upatity     Present and either comprises significant part of well using 0 to 3 scale.     Present and either comprises significant part of well used to moderate part of well used to find upatity     Present and either comprises significant part of well used to moderate part of well used to moderate part of well used to moderate part of well used to find upatity     Present and either comprises significant part of well used to moderate and is of high quality or in small amounts of igneration and is of moderate and is of moderate and used to well used to well used to moderate and is of modera		0.1	Known occurrence state/federal Significant migratory songbird/w Category 1 Wetland. See Ques	ater fowl habitat or tion 1 Qualitative R	usage (10) ating (-10)	
Score all present using 0 to 3 scale.  Aquatic bed Emergent Emergent Shrub Present and either comprises sculha (0.2471 acres) contigued to Emergent Shrub Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprise significant part but is of low quality Present and is of moderate quality or comprises significant part of wetland's vegetation and is of moderate quality or comprises part and is of high quality or comprises significant part of wegetation and is of high quality or comprises significant part but is of low quality or comprises significant part but is of low quality or comprises significant part but is of low quality or comprises significant part but is of low quality or comprises significant part but is of low quality or comprises significant part but is of low quality or comprises significant part but is of low quality or comprises significant part but is of low quality or comprises significant part but is of low quality or lowelfard few quality or comprises significant part but is of low quality or comprises significant part but is of low quality or comprises significant part but is of low quality or comprises significant part but is of low quality or comprises significant part but is of low quality or comprises significant part but is of low quality or comprises significant part but is of low quality or low quality or comprises significant part but is of low quality or low quality or comprises significant part but is of low quality or l		)			and the second second second second	
Aquatic bed Emergent Shrub Shrub Forest Mudflats Open water Other 6b. horizontal (plan view) Interspersion. Select only one. High (5) Moderately high (4) Moderately 3 Moderately 10w (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-6) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/lussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  1 Present and either comprises small part of wetlant's vegetation and is of moderate quality, or comprises significant part to tis of high quality vegetation and is of moderate quality or comprises part and is of high quality.  2 Present and either comprises significant part of wetlant's vegetation and is of moderate quality or comprises part and is of high quality.  3 Present and either comprises significant part of wetlant's vegetation and is of moderate quality or comprises significant part to tis of high quality.  4 Present and either comprises significant part of wetlant's vegetation and is of high quality.  5 Present and is of high quality.  6 Present and is of high quality.  6 Low Spi quality.  8 Natrite Description of Vegetation Quality  1 Low spp diversity and/or predominance of nonnative and/or disturbance tolerant native species.  9 Mature spp are dominant component of the vegetatic although nonnative and/or disturbance tolerant native species diversity modera moderately high, but generally wigh presence of rare, threatened, or endangered spp and or endangered sp	max 20 pts.	subtotal	_			
Emergent						
Forest  Mudflats  Open water  Other  High (5)  Moderately high(4)  Moderately low (2)  Low (1)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present und either comprises significant part of well vegetation and is of high quality  Narrative Description of Vegetation Quality  Iow Low spp diversity and/or predominance of nonnative disturbance tolerant native species moderately high, but generally w/o presence of rat threatened or endangered spp  high A predominance of native species, with nonnative significant part of well vegetation and is of moderate quality or comprises significant part or work of high quality  Narrative Description of Vegetation Quality  Iow Low spp diversity and/or predominance of nonnative disturbance tolerant native species and/or disturbance tolerant native species and/or disturbance of native species, with nonnative significant part of well vegetation and is of high quality  Iow Low spp diversity and/or predominance of nonnative disturbance tolerant native species and/or disturbance tolerant native species and/or disturbance of native species, with nonnative significant part of well vegetation and is of high quality  A present and comprises significant part of well vegetation and is of high equality  Narrative Description of Vegetation Quality  Narrative Description of Vegetation Quality  Narrative Description of Vegetation Quality  And/or disturbance tolerant native species and/or disturbance of nonnative significant part of well vegetation and is of high early and/or predominance of nonnative significant part of well vegetation and is of high equality of research and comprises part and comprises to part and is of high equality of several part of vegetation and is o			Emergent	1 = 8	vegetation and is of moderate quality, or comprises a	
Select only one.  High (5) Moderately high(4) Moderatel (3) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/fussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Amphibian breeding pools  3 Present and comprises significant part, or more, of vegetation and is of high quality  Narrative Description of Vegetation Quality  low Low spp diversity and/or predominance of nonnative disturbance tolerant native species mod Native spp are dominant component of the vegetatic although nonnative and/or disturbance tolerant native species of radiate and species diversity moders moderately high, but generally w/o presence of radiative species, with nonnative species and/or disturbance tolerant native species of threatened or endangered spp  A predominance of native species of radiative species and/or disturbance tolerant native species of radiative species and/or disturbance tolerant native species of radiative species and/or disturbance tolerant native species of radiative species of rad			Forest  Mudflats	2	Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small	
Select only one.  High (5)  Moderately high(4)  Moderately 10w (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetation and is of high quality  Narrative Description of Vegetation Quality  low  Low spp diversity and/or predominance of nonnative disturbance tolerant native species  mod Native spp are dominant component of the vegetatic although nonnative and/or disturbance tolerant native species diversity moderate moderately high, but generally w/o presence of rate threatened or endangered spp and/or disturbance tolerant native spp absent or viabsent, and high spp diversity and often, but not a the presence of rare, threatened, or endangered spin and/or disturbance tolerant native species, with nonnative spandor or disturbance of native species, with nonnative spandor of disturbance of rate, threatened, or endangered spin and/or disturbance of rative species, with nonnative spandor or disturbance or disturbance of rative species, with nonnative spandor or disturbance of rative species.  Mudflat and Open Water Class Quality  1			·			
Select only one.    High (5)				3		
High (5) Moderately high(4) Moderate (3) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  High (5)  Warrative Description of Vegetation Quality low Low spp diversity and/or predominance of nonnative disturbance tolerant native species (inversity modera moderately high, but generally w/o presence of rar threatened or endangered spp and/or disturbance tolerant native species, with nonnative sp and/or disturbance tolerant native species of rare threatened or endangered sp and/or disturbance tolerant native species.  Moderately high, but generally w/o presence of rare threatened or endangered sp and/or disturbance tolerant native species, with nonnative sp and/or disturbance tolerant native species (inversity modera threatened or endangered sp and/or disturbance tolerant native species, with nonnative sp and/or disturbance tolerant native species (inversity moderate species (inversity moderate species (inversity moderate or endangered sp and/or disturbance tolerant native species (inversity moderate species (inversity moderate species (inversity moderate species (inversity moderate or endangered sp and/or disturbance tolerant native species (inversity moderate species (inversity moderate) high put generally w/o presence of rare threatened or endangered spp and/or disturbance tolerant native species (inversity			6b. horizontal (plan view) Interspersion.		vegetation and is of high quality	
Moderately high(4) Moderate (3) Moderately low (2) Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage Extensive >75% cover (-5) Moderate 25-75% cover (-5) Moderate 25-75% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale. Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  Mufflat and Open Water Class Quality 10 Absent <0.1ha (0.247 to 2.47 acres) 11 Low 0.1 to <1ha (0.247 to 9.88 acres) 12 Moderate 1 to <4ha (2.47 to 9.88 acres) 13 High 4ha (9.88 acres) or more  Microtopography Cover Scale 0 Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts			Select only one.			
Moderate (3)  Moderately low (2)  Low (1)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  0 Absent 1 Present very small amounts or if more common of marginal quality or in small amounts of highest quality  1 Present in moderate or greater amounts			High (5)	Narrative D		
Low (1) None (0) 6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5) Moderate 25-75% cover (-3) Sparse 5-25% cover (-1) Nearly absent <5% cover (0) Absent (1) 6d. Microtopography. Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  0 Absent 1 Present very small amounts or highest quality or in small amounts of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts			Moderate (3)		3.90,000,000	
6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh  Amphibian breeding pools  Microtopography Cover Scale  0 Absent  1 Present very small amounts or if more common of marginal quality  2 Present in moderate amounts, but not of highest quality  3 Present in moderate or greater amounts			Low (1)	mod	although nonnative and/or disturbance tolerant native spp	
Extensive >75% cover (-5)  Moderate 25-75% cover (-3)  Sparse 5-25% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  Standing dead >25cm (10in) dbh  Amphibian breeding pools  Microtopography Cover Scale  Microtopography Cover Scale  Microtopography Cover Scale  Absent  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts			6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare threatened or endangered spp	
Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  Description of marginal quality  Mudflat and Open Water Class Quality  10 Absent <0.1ha (0.247 acres) 11 Low 0.1 to <1ha (0.247 to 2.47 acres) 12 Moderate 1 to <4ha (2.47 to 9.88 acres) 13 High 4ha (9.88 acres) or more  Microtopography Cover Scale  Description of marginal quality 2 Present in moderate amounts, but not of highest quality or in small amounts or if more common of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts			Extensive >75% cover (-5) Moderate 25-75% cover (-3)	high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp	
6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  O Absent  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts			Nearly absent <5% cover (0)	At the second se		
Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  O Absent Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts						
Vegetated hummucks/tussucks Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  O Absent Present very small amounts or if more common of marginal quality Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts						
Coarse woody debris >15cm (6in) Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  O Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts						
Standing dead >25cm (10in) dbh Amphibian breeding pools  Microtopography Cover Scale  0 Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts					The state of the s	
Amphibian breeding pools  Microtopography Cover Scale  O Absent  Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Resent in moderate or greater amounts					High 4ha (9.88 acres) or more	
0 Absent 1 Present very small amounts or if more common of marginal quality 2 Present in moderate amounts, but not of highest quality or in small amounts of highest quality 3 Present in moderate or greater amounts					raphy Cover Scale	
Present very small amounts or if more common of marginal quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts			, ,			
Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate or greater amounts				1	Present very small amounts or if more common	
					quality or in small amounts of highest quality	
21L	21L			3	Present in moderate or greater amounts and of highest quality	

End of Quantitative Rating. Complete Categorization Worksheets.

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Site: A	EK-F	reponer to Khodes   Rater(s): KLV	Date: 7 19 2011
	1	Metric 1. Wetland Area (size). W008 -PEM-CATI	
max 6 pts.,	subtotal	Select one size class and assign score.  >50 acres (>20.2ha) (6 pts)  25 to <50 acres (10.1 to <20.2ha) (5 pts)  10 to <25 acres (4 to <10.1ha) (4 pts)  3 to <10 acres (1.2 to <4ha) (3 pts)  0.3 to <3 acres (0.12 to <1.2ha) (2pts)	
		0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt) <0.1 acres (0.04ha) (0 pts)	
3	4	Metric 2. Upland buffers and surrounding land use.	
max 14 pts.	subtotal	2a. Calculate average buffer width. Select only one and assign score. Do not double check.  WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)  MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)  NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)  VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)  2b. Intensity of surrounding land use. Select one or double check and average.  VERY LOW. 2nd growth or older forest, prairie, savannah, wildlife area, etc. (7)  LOW. Old field (>10 years), shrub land, young second growth forest. (5)  MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fall HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)	
14	15	Metric 3. Hydrology.	
max 30 pts.	subtotal	Precipitation (1) Seasonal/Intermittent surface water (3) Perennial surface water (lake or stream) (5) 3c. Maximum water depth. Select only one and assign score.  >0.7 (27.6in) (3)  0.4 to 0.7m (15.7 to 27.6in) (2)  Part of wetland/u	ain (1) //lake and other human use (1) //lake and other human use (1) //piland (e.g. forest), complex (1) //pr upland corridor (2) //pr upland corridor (3)
3		None or none apparent (12) Recovered (7) Recovering (3) Recent or no recovery (1)	ck
6	21	Metric 4. Habitat Alteration and Development.	
max 20 pts.	subtotal	4a. Substrate disturbance. Score one or double check and average.  None or none apparent (4)  Recovered (3)  Recovering (2)  Recent or no recovery (1)  4b. Habitat development. Select only one and assign score.  Excellent (7)  Very good (6)  Good (5)  Moderately good (4)  Fair (3)  Poor to fair (2)	
subt	21 otal this pag	Recent or no recovery (1)  clearcutting selective cutting woody debris removal toxic pollutants  sedimentation dredging farming nutrient enrichm	atic bed removal

Site:A	EP-H	cooner to Rhodes Rater	(s): KLV	Date: 7 19 2017
		1		
sı	2 obtotal first p	age	W008 -P	'EM-CATI
-0	21	Metric 5. Special Wetlan	nds.	
max 10 pts.	subtotal	Check all that apply and score as indicated.		
		Bog (10)		
		Fen (10) Old growth forest (10)		
		Mature forested wetland (5)		
		Lake Erie coastal/tributary wetland-u	unrestricted hyd	drology (10)
		Lake Erie coastal/tributary wetland-r	restricted hydro	logy (5)
		Lake Plain Sand Prairies (Oak Oper	nings) (10)	
		Relict Wet Prairies (10)		
		Known occurrence state/federal three		
		Significant migratory songbird/water Category 1 Wetland. See Question		
		,		
<i>\ \text{\tin}}\text{\tin}\text{\ti}\\\ \ti}\\\ \text{\texi}\\ \tex{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tetx{\texi}\text{\texi}\text{\text{\texi}\text{\text{\text{\text{\texi}\text{\text{\texi}\text{\texi}\text{\text{\text{\texi}\text{\texi}\text{\text{\texi}\text{\text{\texi}\text{\text{\tet</i>	21	wether a. Plant commun	illes, iiil	erspersion, microtopography.
max 20 pts.	subtotal	Se Medicad Versteties Communities	Mtation	Community Cover Scale
max 20 pta	20000181	6a. Wetland Vegetation Communities.  Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
		Aquatic bed	1	Present and either comprises small part of wetland's
		Emergent		vegetation and is of moderate quality, or comprises a
		Ø Shrub		significant part but is of low quality
		O Forest	2	Present and either comprises significant part of wetland's
		Ø Mudflats		vegetation and is of moderate quality or comprises a small
		Open water		part and is of high quality
		Other6b. horizontal (plan view) Interspersion.	3	Present and comprises significant part, or more, of wetland's vegetation and is of high quality
		Select only one.	•	vogotation and to or riight quality
		High (5)	Narrative De	escription of Vegetation Quality
		Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or
		Moderate (3)	4	disturbance tolerant native species
		Moderately low (2)	mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp
		Low (1) None (0)		can also be present, and species diversity moderate to
		6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare
		to Table 1 ORAM long form for list. Add		threatened or endangered spp
		or deduct points for coverage	high	A predominance of native species, with nonnative spp
		Extensive >75% cover (-5)		and/or disturbance tolerant native spp absent or virtually
		Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp
		Sparse 5-25% cover (-1) Nearly absent <5% cover (0)	-	the presence of rare, threatened, or endangered spp
		Absent (1)	Mudflat and	Open Water Class Quality
		6d. Microtopography.	10	Absent <0.1ha (0.247 acres)
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acres)
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more
		Standing dead >25cm (10in) dbh Amphibian breeding pools	Microtopog	raphy Cover Scale
		Ampinolan preeding pools	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
21				and of highest quality

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Site:	4EP -	Hoppmer to Khodes	Rater(s): KLV	Date: 7   9   2017
0	0	Metric 1. Wetland A	Area (size). W009	-PEM-CATMODZ
max 6 pts.	subtota	Soloat and size class and assign ass	-	
max o pra-	3001018	Select one size class and assign sco >50 acres (>20.2ha) (6 pts	)	
		25 to <50 acres (10.1 to <	20.2ha) (5 pts)	
		10 to <25 acres (4 to <10.1 3 to <10 acres (1.2 to <4ha	na) (4 pts) a) (3 pts)	
		0.3 to <3 acres (0.12 to <1	.2ha) (2pts)	
		0.1 to <0.3 acres (0.04 to < <0.1 acres (0.04ha) (0 pts)		
9	9	Metric 2. Upland bu		ing land use.
max 14 pts.	subtotal		Select only one and assign score. [	Do not double check.
			m (164ft) or more around wetland p	
			25m to <50m (82 to <164ft) around e 10m to <25m (32ft to <82ft) arour	
		VERY NARROW. Buffers	average <10m (<32ft) around wetlar	nd perimeter (0)
		2b. Intensity of surrounding land use	<ul> <li>Select one or double check and a r older forest, prairie, savannah, wild</li> </ul>	
		LOW. Old field (>10 years	), shrub land, young second growth	forest. (5)
		MODERATELY HIGH. Re	sidential, fenced pasture, park, cons pen pasture, row cropping, mining, c	ervation tillage, new fallow field. (3)
		Metric 3. Hydrology		onstruction. (1)
16	25	wethe 3. Hydrology		
max 30 pts.	subtotal	J  3a. Sources of Water. Score all that	apply. 3b.	Connectivity. Score all that apply.
		High pH groundwater (5)	33,	100 year floodplain (1)
		Other groundwater (3) Precipitation (1)		Between stream/lake and other human use (1) Part of wetland/upland (e.g. forest), complex (1)
		Seasonal/Intermittent surfa	ce water (3)	Part of wedarioropiano (e.g. forest), complex (1)
		Perennial surface water (la	ke or stream) (5) 3d.	Duration inundation/saturation. Score one or dbl check
2		3c. Maximum water depth. Select or >0.7 (27.6in) (3)	ily one and assign score.	Semi- to permanently inundated/saturated (4) Regularly inundated/saturated (3)
		0.4 to 0.7m (15.7 to 27.6in)	(2)	Seasonally inundated (2)
		<ul><li>&lt;0.4m (&lt;15.7in) (1)</li><li>3e. Modifications to natural hydrologi</li></ul>	s regime. Score one or double char	Seasonally saturated in upper 30cm (12in) (1)
		None or none apparent (12		ck and average.
		Recovered (7)	ditch	point source (nonstormwater)
		Recovering (3)	tile	filling/grading
		Recent or no recovery (1)	dike	road bed/RR track dredging
			stormwater input	other
9.5	34.5	Metric 4. Habitat Al	teration and Develo	ppment.
max 20 pts.	subtolal	4a. <u>Subs</u> trate disturbance. Score one	e or double check and average.	
		None or none apparent (4)		
		Recovered (3) Recovering (2)		
		Recent or no recovery (1)		
.41		4b. Habitat development. Select only	one and assign score.	
		Excellent (7) Very good (6)		
		Good (5)		
		Moderately good (4) Fair (3)		
		Poor to fair (2)		
		Poor (1)		
		4c. Habitat alteration. Score one or d	1.959cm UT	
		None or none apparent (9) Recovered (6) Recovering (2)	Check all disturbances observed mowing	shrub/sapling removal
		Recovering (3)	grazing	herbaceous/aquatic bed removal
ï		Recent or no recovery (1)	clearcutting	sedimentation
	245		selective cutting woody debris removal	dredging farming
Ļ	<b>プ</b> トノ		toxic pollutants	nutrient enrichment
	ototal this pa	ge v 2001 iim		

## WOOD - PEM - CAT MIDD2    Moderate   Section   Wetlands   Bog (10)	Site:	EP. He	poner to Rhodes Rate	r(s): KLV		Date: 7/19 2017
Check all that apply and score as indicated.  Bog (10)  Far (10)  Glog growth forest (10)  Mature forested wetland (5)  Lake Eric cosatal/ributary wetland-unrestricted hydrology (10)  Lake Eric cosatal/ributary wetland-unrestricted hydrology (5)  Lake Plain Sand Prairies (Oak Openings) (10)  Relict Wet Prairies (10)  Relict Wet		34.5	ge		-PEM-CATIMODZ	
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Score all present using 0 to 3 scale.    Aquatic bed   Aquatic bed   Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality	3	37.5	Metric 6. Plant commun	ities, int	erspersion, microto	opography.
Score all present using 0 to 3 scale.    Aquatic bed   Aquatic bed   Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality	max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale	
Shrub  Forest  O Forest  O Mudfals  O Open water  O Other  O Other			Score all present using 0 to 3 scale.  O Aquatic bed		Present and either comprises sm	all part of wetland's
Forest  Mudflats  Open water Other  6b. honzontal (plan view) Interspersion.  Select only one.  High (5)  Moderate (3)  Moderate (4)  Mudflate (3)  Moderate (4)  Mudflate				***		
6b. horizontal (plan view) Interspersion.  Select only one.  High (5)  Moderately high(4)  Moderately (3)  None (0)  6c. Coverage of invasive plants. Refer to Table 1 ORAM long form for list. Add or deduct points for coverage  Extensive >75% cover (-5)  Moderate 25-75% cover (-1)  Nearly absent <5% cover (0)  Absent (1)  6d. Microtopography.  Score all present using 0 to 3 scale.  Vegetated hummucks/tussucks  Coarse woody debris >15cm (6in)  O Standing dead >25cm (10in) dbh  Amphibian breeding pools  Absent  Present wery small amounts or finghest quality  Present in moderate amounts, but not of highest quality or in small amounts of highest quality  Present in moderate amounts, but not 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 and of highest quality  Present in moderate or greater amounts and of highest quality			O Forest O Mudflats	2	Present and either comprises sig vegetation and is of moderate	nificant part of wetland's
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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			, <del>, , , , , , , , , , , , , , , , , , </del>		Present very small amounts or if	more common
Present in moderate or greater amounts and of highest quality				2	Present in moderate amounts, b	
m 1161 1	275			3	Present in moderate or greater a	

CATMOD2

Poor to fair (2) Poor (1) 4c. Habitat alteration. Score one or double check and average. None or none apparent (9) Check all disturbances observed Recovered (6) shrub/sapling removal mowing Recovering (3) grazing herbaceous/aquatic bed removal Recent or no recovery (1) sedimentation clearcutting selective cutting dredging woody debris removal farming toxic pollutants nutrient enrichment

Site:A	EP-F	reponer to Rhodes   Rater	(s): KW	Date: 7 9 2017		
sı	38 obtatal first p	W010-PEM-CATMODZ				
0	38	Metric 5. Special Wetlar	nds.			
max 10 pts.	subtotal	Check all that apply and score as indicated.  Bog (10) Fen (10) Old growth forest (10) Mature forested wetland (5) Lake Erie coastal/tributary wetland- Lake Erie coastal/tributary wetland- Lake Plain Sand Prairies (Oak Opel Relict Wet Prairies (10) Known occurrence state/federal thre Significant migratory songbird/watel Category 1 Wetland. See Question	restricted hydro nings) (10) eatened or end r fowl habitat or 1 Qualitative F	angered species (10) r usage (10) Rating (-10)		
3	41	Metric 6. Plant commun	ities, int	erspersion, microtopography.		
max 20 pts.	subtotal	6a. Wetland Vegetation Communities.	Vegetation	Community Cover Scale		
		Score all present using 0 to 3 scale.	0	Absent or comprises <0.1ha (0.2471 acres) contiguous area		
		Aquatic bed	1	Present and either comprises small part of wetland's		
		\ Emergent		vegetation and is of moderate quality, or comprises a		
		Shrub		significant part but is of low quality		
		Forest	2	Present and either comprises significant part of wetland's		
				vegetation and is of moderate quality or comprises a small		
		Open water		part and is of high quality		
		O Other	3	Present and comprises significant part, or more, of wetland's		
		6b. horizontal (plan view) Interspersion.		vegetation and is of high quality		
		Select only one.				
		High (5)	Narrative D	escription of Vegetation Quality		
		Moderately high(4)	low	Low spp diversity and/or predominance of nonnative or		
		Moderate (3)		disturbance tolerant native species		
		Moderately low (2)	mod	Native spp are dominant component of the vegetation,		
		Low (1)		although nonnative and/or disturbance tolerant native spp		
		None (0)		can also be present, and species diversity moderate to		
		6c. Coverage of invasive plants. Refer		moderately high, but generally w/o presence of rare		
		to Table 1 ORAM long form for list. Add		threatened or endangered spp		
		or deduct points for coverage	high	A predominance of native species, with nonnative spp		
		Extensive >75% cover (-5)		and/or disturbance tolerant native spp absent or virtually		
		Moderate 25-75% cover (-3)		absent, and high spp diversity and often, but not always,		
		Sparse 5-25% cover (-1)		the presence of rare, threatened, or endangered spp		
		Nearly absent <5% cover (0)				
		Absent (1)	Mudflat and	d Open Water Class Quality		
		6d. Microtopography.	10	Absent <0.1ha (0.247 acres)		
		Score all present using 0 to 3 scale.	1	Low 0.1 to <1ha (0.247 to 2.47 acres)		
		Vegetated hummucks/tussucks	2	Moderate 1 to <4ha (2.47 to 9.88 acres)		
		Coarse woody debris >15cm (6in)	3	High 4ha (9.88 acres) or more		
		Standing dead >25cm (10in) dbh				
		Amphibian breeding pools	Microtopog	graphy Cover Scale		
			0	Absent		
			1	Present very small amounts or 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		
Ш						

# **APPENDIX E ODNR and USFWS Correspondence**





May 12, 2017 Project C170352.06

Environmental Review Staff
Ohio Department of Natural Resources
Division of Wildlife - Ohio Natural Heritage Program
2045 Morse Road, Building G-3
Columbus, Ohio 43229-6693

American Electric Power
Rhodes – Heppner 138kV Line Rebuild Project
Request for Technical Assistance Regarding Threatened
and Endangered Species and Critical Habitat
Jackson County, Ohio

#### Dear Staff:

GAI Consultants, Inc. (GAI), on behalf of American Electric Power (AEP), is requesting information regarding state- and federally-listed threatened and endangered species in the vicinity of the Rhodes – Heppner 138kV Line Rebuild Project (Project) in Jackson County, Ohio. As part of this request, please provide information specific to any threatened and endangered bats. GAI is also requesting the locations of any known golden or bald eagle nests in the area.

The proposed Project involves the rebuild of approximately 4.6 miles of the Rhodes – Heppner 138kV transmission line.

The study area for the Project is shown on the attached map (Figure 1). The habitat within the study area consists of maintained right-of-way bordered by mixed deciduous forests, agricultural lands, and residential properties. Project shapefiles have been included to aid in your review.

GAI and AEP thank you in advance for your assistance. Please contact me at 330.324.9148 or via email at a.wheaton@gaiconsultants.com if you have any guestions or require further information.

Sincerely,

**GAI Consultants, Inc.** 

Allison R. Wheaton, WPIT

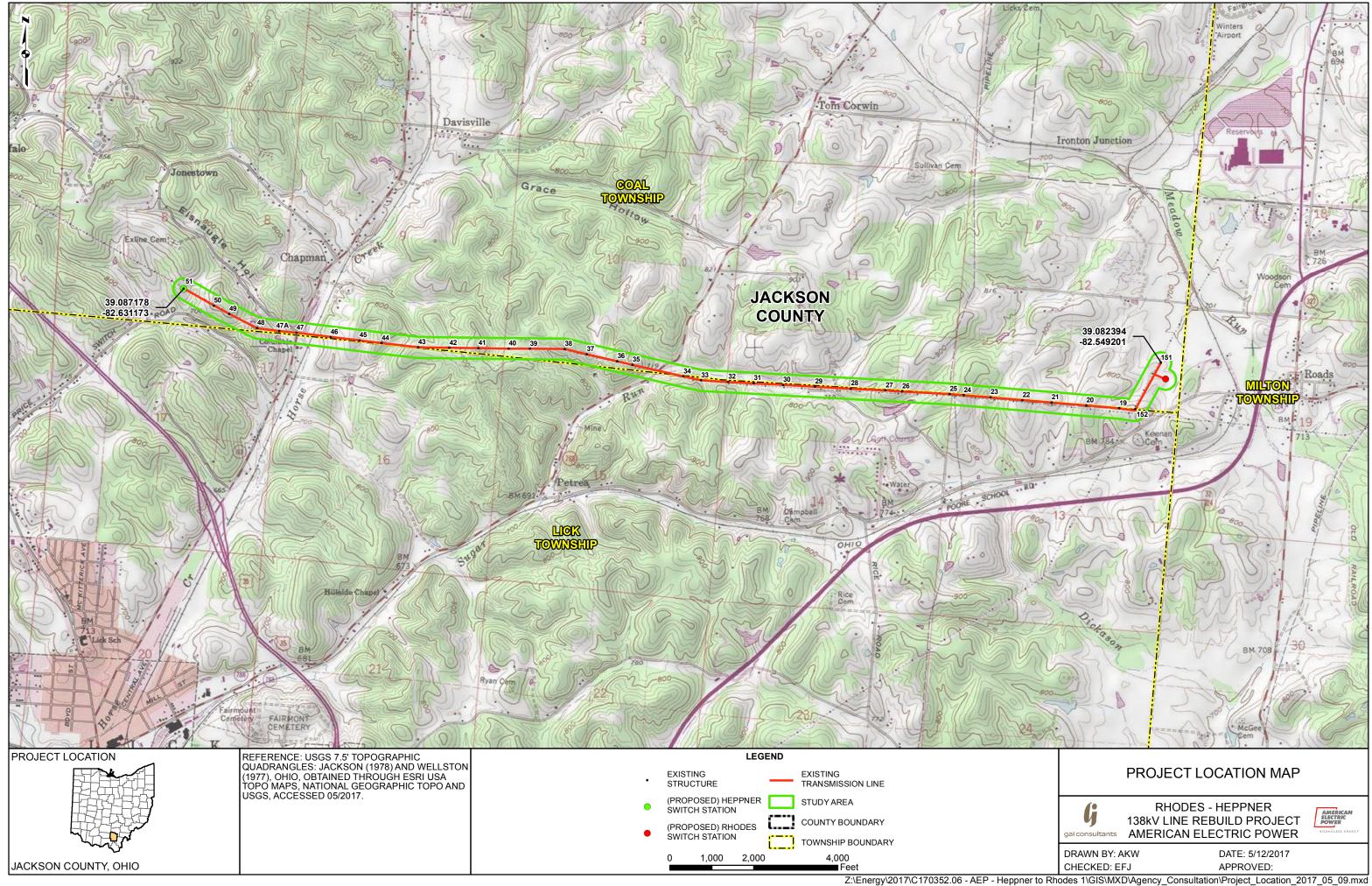
Senior Project Environmental Specialist

ARW/kea

Attachments: Attachment 1 (Project Location Map)

**Project Shapefiles** 

## ATTACHMENT 1 PROJECT LOCATION MAP



From: <u>susan\_zimmermann@fws.gov</u> on behalf of <u>Ohio, FW3</u>

To: Allison Wheaton

Cc: kate.parsons@dnr.state.oh.us; nathan.reardon@dnr.state.oh.us

Subject: Four (4) AEP Projects: Heppner / Rhoads / Ginger / Rhoads-Heppener

**Date:** Friday, June 02, 2017 1:39:00 PM

Attachments: Capture of Dan.PNG



#### UNITED STATES DEPARTMENT OF THE INTERIOR

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



03E15000-2017-TA-1329 GAI AEP Ginger Switch Replacement Project, Ross Co. 03E15000-2017-TA-1328 GAI AEP Heppner Substation Project, Jackson Co. 03E15000-2017-TA-1327 GAI AEP Rhodes Substation Project, Jackson Co. 03E15000-2017-TA-1326 GAI AEP Rhoders-Heppner 138kV Line Rebuild, Jackson

Dear Ms. Wheaton,

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

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

FEDERALLY LISTED SPECIES COMMENTS: All projects in the State of Ohio lie within the range of the federally endangered **Indiana bat** (*Myotis sodalis*) and the federally threatened **northern long-eared bat** (*Myotis septentrionalis*). In Ohio, presence of the Indiana bat and northern long-eared bat is assumed wherever suitable habitat occurs unless a presence/absence survey has been performed to document absence. Suitable summer habitat for Indiana bats and northern long-eared bats consists of a wide variety of forested/wooded habitats where they roost, forage, and travel and may also include some adjacent and interspersed nonforested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags =3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as

well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern longeared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures should also be considered potential summer habitat. In the winter, Indiana bats and northern longeared bats hibernate in caves and abandoned mines.

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

seasonal clearing is recommended where Indiana bats are assumed present.

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

that summer surveys may only be conducted between June 1 and August 15.

If there is a federal nexus for the project (e.g., federal funding provided, federal permits required to construct), no tree clearing should occur on any portion of the project area until consultation under section 7 of the ESA, between the Service and the federal action agency, is completed. We recommend that the federal action agency submit a determination of effects to this office, relative to the Indiana bat and northern long-eared bat, for our review and concurrence.

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

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

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

Sincerely,

Dan Everson

Field Supervisor

cc: Nathan Reardon, ODNR-DOW

Kate Parsons, ODNR-DOW



May 12, 2017 Project C170352.06

Mr. Dan Everson United States Fish and Wildlife Service Ohio Ecological Services Field Office 4625 Morse Road, Suite 104 Columbus, Ohio 43230

American Electric Power
Rhodes – Heppner 138kV Line Rebuild Project
Request for Technical Assistance Regarding Threatened
and Endangered Species and Critical Habitat
Jackson County, Ohio

Dear Mr. Everson:

GAI Consultants, Inc. (GAI), on behalf of American Electric Power (AEP), is requesting information regarding state- and federally-listed threatened and endangered species in the vicinity of the Rhodes – Heppner 138kV Line Rebuild Project (Project) in Jackson County, Ohio. As part of this request, please provide information specific to any threatened and endangered bats. GAI is also requesting the locations of any known golden or bald eagle nests in the area.

The proposed Project involves the rebuild of approximately 4.6 miles of the Rhodes – Heppner 138kV transmission line.

The study area for the Project is shown on the attached map (Figure 1). The habitat within the study area consists of maintained right-of-way bordered by mixed deciduous forests, agricultural lands, and residential properties. Project shapefiles have been included to aid in your review.

GAI and AEP thank you in advance for your assistance. Please contact me at 330.324.9148 or via email at a.wheaton@gaiconsultants.com if you have any questions or require further information.

Sincerely,

**GAI Consultants, Inc.** 

Allison R. Wheaton, WPIT

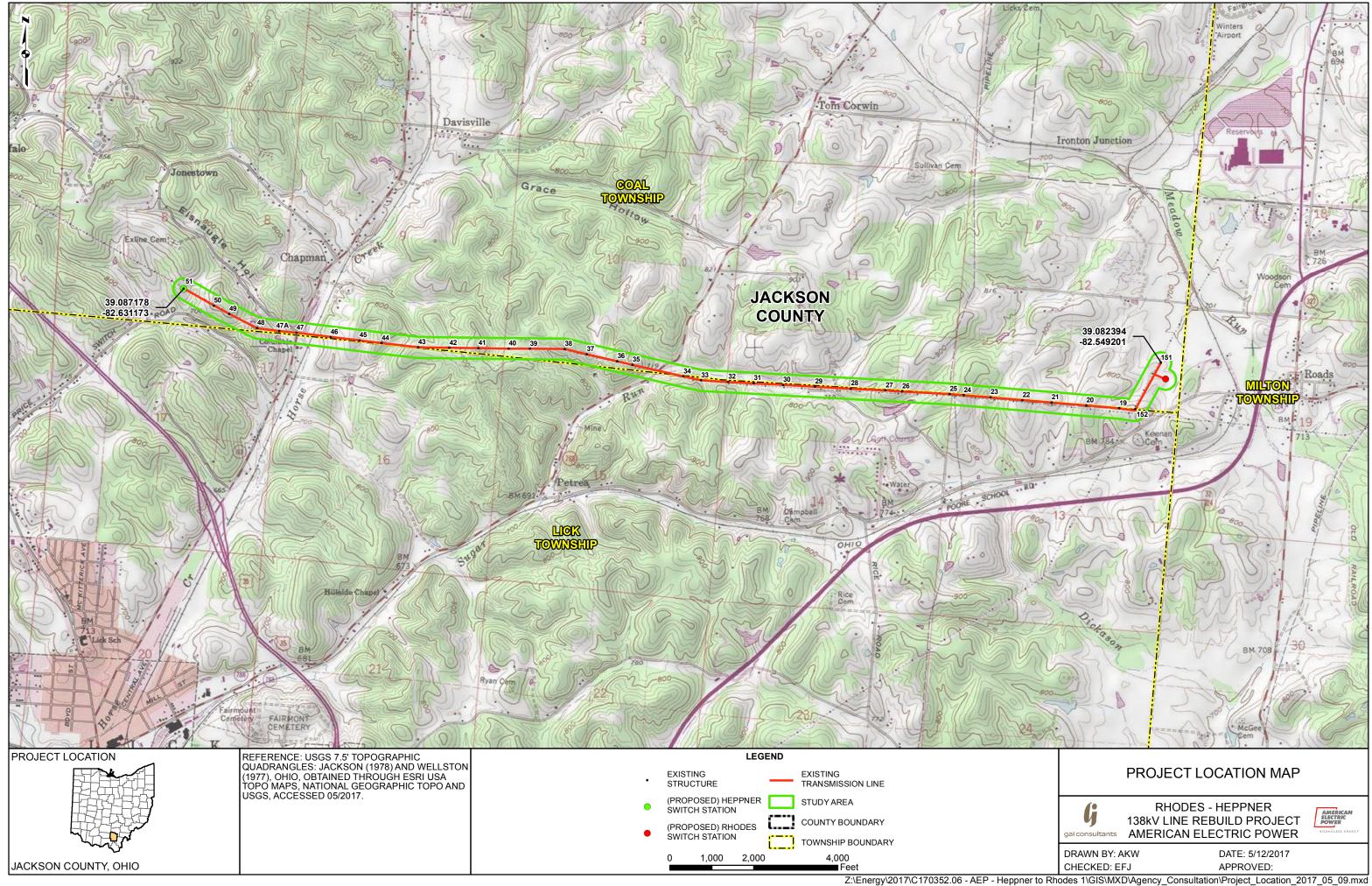
Senior Project Environmental Specialist

ARW/kea

Attachments: Attachment 1 (Project Location Map)

**Project Shapefiles** 

## ATTACHMENT 1 PROJECT LOCATION MAP



### **REVISED WETLAND AND STREAM DELINEATION MAP**

