Herlan Station Project, Monroe County, Ohio

Ecological Resources Inventory Report

Prepared for:
American Electric Power
700 Morrison Road
Gahanna, Ohio 43230

Prepared by:
Dan Godec
Stantec Consulting Services Inc.

September 29, 2016

Table of Contents

LIST OF APPENDICES I

1.0 INTRODUCTION 2

2.0 METHODS 2
2.1 WETLAND DELINEATION 2
2.2 STREAM DELINEATION 2
2.3 RARE SPECIES 3

3.0 RESULTS 4
3.1 TERRESTRIAL HABITAT 4
3.2 WETLANDS 5
3.3 STREAMS 5
3.4 RARE, THREATENED, OR ENDANGERED SPECIESHABITAT 6

4.0 CONCLUSIONS AND RECOMMENDATIONS 9

5.0 REFERENCES 11

LIST OF TABLES

Table 1. Vegetation Communities and Land Cover Found within the Herlan Station Project Area, Monroe County, Ohio 4
Table 2. Summary of Stream Resources Found within the Herlan Station Project Area, Monroe County, Ohio 5
Table 3. Summary of Potential Ohio State-Listed Species within the Herlan Station Project Area, Monroe County, Ohio 6
Table 4. Summary of Potential Federally-Listed Species within the Herlan Station Project Area, Monroe County, Ohio 8

LIST OF APPENDICES

APPENDIX A FIGURES A.1
A.1 Figure 1 – Project Location Map A.1
A.2 Figure 2 – Wetland and Waterbody Delineation Map A.2
A.3 Figure 3 – Habitat Assessment Map A.3

APPENDIX B AGENCY CORRESPONDENCE B.1

APPENDIX C REPRESENTATIVE PHOTOGRAPHS C.1

APPENDIX D DATA FORMS D.1
D.1 HHEI Data Forms D.1
D.2 Wetland Determination Data Forms D.2

1.0 Introduction

American Electric Power (AEP) is proposing to construct the Herlan Station electric transmission substation facility in Monroe County, Ohio (Figure 1, Appendix A). The proposed Project area is located northeast of the intersection of State Route 78 and State Route 379, approximately two miles northeast of Summerfield, Ohio. The Project area was surveyed for wetlands, waterbodies, and potential threatened, endangered, and rare species habitat by Stantec Consulting Services Inc. (Stantec) biologists on August 4, 5, and 17, 2016. Approximate locations of ecological features located immediately adjacent to the Project area were also recorded during the field surveys, where landowner access was permitted. These features are shown on the Figure 2 maps in Appendix A as "approximate" wetland, stream (waterway), and upland drainage features. No formal wetland/stream delineations, wetland determination data forms, or stream data forms were completed for these features.

2.0 Methods

2.1 WETLAND DELINEATION

Prior to completing the field surveys, a desktop review of the Project area was conducted using U.S. Geological Survey (USGS) topographic mapping, National Wetlands Inventory (NWI) maps, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil surveys, and aerial imagery mapping. Stantec completed a wetland delineation study in accordance with the *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0* (USACE 2012). Wetland categories were classified using the Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 (Mack 2001).

2.2 STREAM DELINEATION

Streams that demonstrated a continuously defined channel (bed and bank), ordinary high water mark (OHWM), and the disturbance of terrestrial vegetation were delineated within the Project area, per the protocols outlined in the USACE's Guidance on Ordinary High Water Mark Identification (Regulatory Guidance Letter, No. 05-05) (USACE 2005). Delineated streams were classified as ephemeral, intermittent, or perennial per definitions in the Federal Register/Vol. 67, No. 10 (USACE 2002). Functional assessment of streams within the Project area was based on completion of the Ohio Environmental Protection Agency's (OEPA) Headwater Habitat Evaluation Index (HHEI) and/or Qualitative Habitat Evaluation Index (QHEI) (OEPA 2012; OEPA 2006). The centerline of each waterway was identified and surveyed using a handheld sub-meter accuracy GPS unit and mapped with GIS software. Additionally, the locations of upland drainage features (which lacked a continuously defined bed and bank/OHWM) identified within

the Project area were also recorded with a sub-meter accuracy GPS unit during the field surveys.

2.3 RARE SPECIES

Stantec contacted the Ohio Department of Natural Resources (ODNR) Office of Real Estate, the ODNR Ohio Natural Heritage Program, and the U.S. Fish and Wildlife Service (USFWS) for information regarding rare, threatened, or endangered species and their habitats of concern within the vicinity of the Project area (Appendix B – Agency Correspondence). To assess potential impacts to rare, threatened, or endangered species, Stantec scientists conducted a pedestrian reconnaissance of the proposed Project area, collected information on existing habitats within the Project area, and assessed the potential for these habitats to be used by these species.

3.0 Results

3.1 TERRESTRIAL HABITAT

Stantec completed field surveys within the Project area on August 4, 5, and 17, 2016, for wetlands, waterbodies, and threatened and endangered species or their habitats. Figure 2 (Appendix A) shows the wetlands and waterbodies identified by Stantec within the Project area, as well as the locations of upland drainage features identified within the Project area. Figure 3 (Appendix A) shows the habitats and locations of any identified rare, threatened or endangered species observed within the Project area during the rare, threatened, and endangered species habitat assessment surveys. Representative photographs of the wetlands, streams, upland drainage features, and other habitats identified within the Project area are included in Appendix C of this report (photo locations are shown on Figures 2 and 3, Appendix A). Completed wetland determination and HHEI data forms are included in Appendix D.

Table 1. Vegetation Communities and Land Cover Found within the Herlan Station Project Area, Monroe County, Ohio

Vegetation Communities and Land Cover Types within the Project Study Area	Degree of Human-Related Ecological Disturbance	Unique, Rare, or High Quality?	Approximate Acreage Within Project Study Area
Hay Field	Extremely disturbed area dominated by non-native graminoids.	No	13.80
Old Field	Area of extreme disturbance/ruderal community dominated by opportunistic invaders or native highly tolerant taxa; An infrequently maintained area dominated by herbaceous species with a limited presence of early successional woody species.	No	1.28
Mixed Early Successional/Second Growth Deciduous Forest	Area with intermediate to moderate disturbance with a varying overstory of shade tolerant, deciduous trees dominated by red maple (*Acer rubrum*), beech (*Fagus grandifolia*), and various oak (*Quercus* spp.) species, with a thick understory of woody shrubs and herbaceous vegetation.	No	8.55
TOTAL	--		**23.63**

3.2 WETLANDS

No wetlands were identified within the Project area. One wetland determination data form was completed in a low lying/old field area. This wetland determination sample point did not meet three criteria necessary to be considered a wetland.

3.3 STREAMS

Table 2. Summary of Stream Resources Found within the Herlan Station Project Area, Monroe County, Ohio

Stream Name	Photo Numbers[1]	Receiving Waters	Stream Flow Regime[2]	Stream Evaluation Method	Stream Evaluation Score	OHWM Width (feet)[3]	Delineated Length (feet) within Project Study Area
Stream 1	1, 2	South Fork	Intermittent	HHEI	33	2	162.5
Stream 2	3, 4	South Fork	Intermittent	HHEI	20	1.5	77.1
Stream 3	5, 6	South Fork	Intermittent	HHEI	39	2	594.7
Stream 4	7, 8	South Fork	Ephemeral	HHEI	18	1	119.4
						TOTAL	**953.7**
[1]Appendix C – Representative Photographs							
[2]Stream classification is based on Federal Register/Vol. 67, No. 10 (USACE 2002)							
[3]OHWM = Ordinary High Water Mark							

Three upland drainage features were identified in and/or near the southwest corner of the study area. These features appeared to exhibit the characteristics of a stream within the Project area. Upon further investigation outside of the study area, it was found that these features did not maintain a continuously defined bed, bank, and ordinary high water mark, and they did not have a connection to streams or other jurisdictional waters of the United States. Representative photographs of these features can be found in Appendix C.

3.4 RARE, THREATENED, OR ENDANGERED SPECIESHABITAT

Table 3. Summary of Potential Ohio State-Listed Species within the Herlan Station Project Area, Monroe County, Ohio

Common Name	Scientific Name	State Listing[1]	Known to Occur in Monroe County? [2]	Known Within One Mile of Project Area?[3]	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Amphibian								
Eastern Hellbender	*Cryptobranchus alleganiensis alleganiensis*	E	Yes	No	Found mostly in unglaciated portions of Ohio and prefers large, swift flowing streams where they hide under larger rocks (ODNR 2016b).	No	No impacts are anticipated due to lack of suitable habitat within the Project area.	Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.
Butterfly								
Regal Fritillary	*Speyeria idalia*	E	Yes	No	Occurs in tallgrass prairie remnants and other open sites including damp meadows, marshes, wet fields, and pastures (Butterflies and Moths of North America 2016).	No	No impacts are anticipated due to lack of suitable habitat within the Project area.	No comments received.
Fish								
Channel Darter	*Persina copelandi*	E	Yes	No	Habitat includes warm, low and moderate gradient rivers and large creeks in areas of moderate current. This darter usually is found over sand and gravel substrates. It prefers clear water and silt-free bottoms (NatureServe 2016).	No	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.	The ODNR recommends no in-water work occur in perennial streams from April 15 through June 30, to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this species or other aquatic species.
River Darter	*Percina shumardi*	T	Yes	No	Large rivers and lower part of tributaries; deep chutes and riffles where current is swift and bottom is coarse gravel or rock (NatureServe 2016).	No	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.	The ODNR recommends no in-water work occur in perennial streams from April 15 through June 30, to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this species or other aquatic species.
Tippecanoe Darter	*Etheostoma tippecanoe*	T	Yes	No	This fish prefers medium to large streams in the Ohio River drainage system and are found in riffles of moderate current with substrate of gravel or cobble sized rocks (ODNR 2016b).	No	No suitable habitat was observed within the Project area. Therefore, no impacts are anticipated.	The ODNR recommends no in-water work occur in perennial streams from April 15 through June 30, to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this species or other aquatic species.
Ohio Lamprey	*Ichthyomyzon bdellium*	E	No	No	Ohio lampreys are only found in the Ohio River and the lower portion of its tributary streams. Spawning adults are found in clear brooks with fast flowing water and either sand or gravel bottoms. Juveniles or ammocoetes are found in slow moving water buried in soft substrate of medium to large streams (ODNR 2016b).	No	No suitable habitat was observed within the Project area and no in-water work is proposed to occur in perennial streams by AEP. Therefore, no impacts are anticipated.	The ODNR recommends no in-water work occur in perennial streams from April 15 through June 30, to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact this species or other aquatic species.
Mussel								
Ohio Pigtoe	*Pleurobema cordatum*	E	Yes	No	This mussel prefers strong currents of large rivers with substrates of sand and gravel, though it is also somewhat tolerant of lentic systems (NatureServe 2016).	No	No suitable habitat is present within the Project area. Therefore, no impacts are anticipated.	No comments received.

Common Name	Scientific Name	State Listing[1]	Known to Occur in Monroe County? [2]	Known Within One Mile of Project Area?[3]	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	ODNR Comments/Recommendations
Mammal								
Indiana Bat	*Myotis sodalis*	E	Yes	No	The Indiana bat is likely distributed over the entire State of Ohio, though not uniformly. This species generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas; Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007; USFWS 2015). Roosts have also occasionally been found to consist of cracks and hollows in trees, utility poles, buildings, and bat boxes. Primarily use caves for hibernacula, although are also known to hibernate in abandoned underground mines (Brack et al. 2010).	Yes	No potential hibernacula were observed within the Project area. One potential Indiana bat roost tree was identified within the Project area during the field surveys. It is anticipated that this potential roost tree can be avoided or removed between October 1 and March 31. Therefore, impacts to this species are not anticipated.	If suitable habitat is present and trees must be cut, the ODNR recommends that tree clearing only occur between October 1 and March 31. If no tree removal is proposed, this project is not likely to impact this species.
Black Bear	*Ursus americanus*	E	Yes	No	Black bears inhabit forests and nearby openings, including forested wetlands. When inactive, they occupy dens under fallen trees at ground-level or above-ground tree cavities or hollow logs, underground cave-like sites, or the ground surface in dense cover (NatureServe 2016).	Yes	Suitable habitat was observed within the Project area, but due to the mobility of this species, impacts to this species are not anticipated.	Due to the mobility of this species, this project is not likely to impact this species.

[1]E=Endangered; T=Threatened
[2]According to Ohio Department of Natural Resources, State Listed Wildlife Species by County (ODNR 2016a).
[3]According to Ohio Natural Heritage Program (Appendix B).

Table 4. Summary of Potential Federally-Listed Species within the Herlan Station Project Area, Monroe County, Ohio

Common Name	Scientific Name	Federal Listing[1]	Known to Occur in Monroe County?[2]	Habitat Preference	Potential Habitat Observed in Project Area?	Impact Assessment	USFWS Comments/ Recommendations
Indiana Bat	*Myotis sodalis*	E	Yes	The Indiana bat is likely distributed over the entire State of Ohio, though not uniformly. This species generally forages in openings and edge habitats within upland and floodplain forest, but they also forage over old fields and pastures (Brack et al. 2010). Natural roost structures include trees (live or dead) with exfoliating bark, and exposure to solar radiation. Other important factors for roost trees include relative location to other trees, a permanent water source and foraging areas; Dead trees are preferred as maternity roosts; however, live trees are often used as secondary roosts depending on microclimate conditions (USFWS 2007; USFWS 2015b). Roosts have also occasionally been found to consist of cracks and hollows in trees, utility poles, buildings, and bat boxes. Primarily use caves for hibernacula, although are also known to hibernate in abandoned underground mines (Brack et al. 2010).	Yes	No potential hibernacula were observed within the Project area. One potential Indiana bat roost tree was identified within the Project area during the field surveys. It is anticipated that this potential roost tree can be avoided or removed between October 1 and March 31. Therefore, adverse effects to this species are not anticipated	The project is in the vicinity of one or more confirmed records of Indiana bats. Therefore, USFWS recommends that trees ≥ 3 inches dbh be saved wherever possible. Because this project will result in a small amount of forest clearing relative to the available habitat in the immediately surrounding area, habitat removal is unlikely to result in significant impacts to this species. If no caves or abandoned mines are present and tree removal is unavoidable, seasonal tree cutting (clearing of trees ≥3 inches diameter at breast height between October 1 and March 31) is recommended. Following this seasonal tree clearing recommendation should ensure that any effects to the Indiana bat are insignificant or discountable.
Northern Long-eared Bat	*Myotis septentrionalis*	T	Yes	The northern long-eared bat is found throughout Ohio. This species generally forages in forested habitat and openings in forested habitat and utilizes cracks, cavities, and loose bark within live and dead trees, as well as buildings as roosting habitat (Brack et al. 2010; USFWS 2016). The species utilizes caves and abandoned mines as winter hibernacula. Various sized caves are used providing they have a constant temperature, high humidity, and little to no air current (Brack et al. 2010).	Yes	No potential hibernacula were observed within the Project area. One potential northern long-eared bat roost tree was identified within the Project area during the field surveys. It is anticipated that this potential roost trees can be avoided or removed between October 1 and March 31. Therefore, adverse effects to this species are not anticipated.	If no caves or abandoned mines are present and tree removal is unavoidable, seasonal tree cutting (clearing of trees ≥3 inches diameter at breast height between October 1 and March 31) is recommended. Following this seasonal tree clearing recommendation should ensure that any effects to northern long-eared bats are insignificant or discountable.

[1]E=Endangered; T=Threatened
[2]According to USFWS (2015a).

4.0 Conclusions and Recommendations

Stantec conducted a wetland and waterbodies delineation and a preliminary habitat assessment for threatened and endangered species or their habitats within the Project area on August 4, 5, and 17, 2016. During the field surveys, one ephemeral stream totaling approximately 119.4 linear feet in length, and three intermittent streams totaling approximately 834.3 linear feet in length were delineated within the Project area. No impacts to the identified streams are anticipated as they will likely be avoided or temporarily crossed by timber mats. Table 2 contains detailed information regarding the streams identified within the Project area.

The information provided by Stantec regarding wetland and stream boundaries is based on an analysis of the wetland and upland conditions present within the Project area at the time that fieldwork was conducted. The delineations were performed by experienced and qualified professionals using regulatory agency-accepted practices and sound professional judgment.

The Project area includes potential roosting and foraging habitat for the Indiana bat and northern long-eared bat and is in the vicinity of one or more confirmed records of Indiana bats according to the U.S. Fish and Wildlife Service (USFWS; Appendix B). Therefore, the USFWS recommends that trees ≥ 3 inches diameter breast height (dbh) be saved wherever possible. Because the Project will result in a small amount of forest clearing relative to the available habitat in the immediately surrounding area, habitat removal is unlikely to result in significant impacts to these species. Because Indiana bat presence in the vicinity of the Project has been confirmed, clearing of trees ≥ 3 inches dbh during the summer roosting season may result in direct take of individuals. If no caves or abandoned mines are present and tree removal is unavoidable, the Service recommends that removal of any trees ≥ 3 inches dbh only occur between October 1 and March 31. Following this seasonal tree clearing recommendation should ensure that any effects to Indiana bats and northern long-eared bats are insignificant or discountable. According to the USFWS (Appendix B), because Indiana bat presence has already been confirmed in the project vicinity, any additional summer surveys would not constitute presence/absence surveys for this species. In addition, the USFWS stated that due to the project type, size, and location, we do not anticipate adverse effects to any other federally endangered, threatened, proposed, or candidate species.

The ODNR Ohio Natural Heritage Program (Appendix B) stated that the Project is not located within any state-listed threatened or endangered species. Additionally, the ODNR is unaware of any unique ecological sites, geological features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, or other protected natural areas within the Project area or a one-mile radius of it.

The response received from the ODNR Office of Real Estate (Appendix B) indicated that the Project is within the range of the following state-listed threatened and endangered species of fish: channel darter, river darter, Tippecanoe darter, and Ohio lamprey. The ODNR recommended that no in-water work take place in perennial streams from April 15 to June 30, in

order to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, the ODNR stated that this project is not likely to impact these or other aquatic species.

The ODNR also stated that the Project is within the range of the eastern hellbender. However, the ODNR stated that due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species. Additionally, the ODNR stated that the Project is within the range of the black bear, but that the Project is not likely to impact that species due to its mobility. Finally, the ODNR stated that the Project is within the range of the Indiana bat. They stated that if suitable Indiana bat habitat is present and trees must be cut, the ODNR recommends that tree clearing only occur between October 1 and March 31.

5.0 References

Brack, Virgil Jr., Dale W. Sparks, John O. Whitaker Jr., Brianne L. Walters, and Angela Boyer. 2010. Bats of Ohio. Indiana State University Center for North American Bat Research and Conservation.

Butterflies and Moths of North America. 2016. Regal Fritillary. Available at http://www.butterfliesandmoths.org/species/Speyeria-idalia. Accessed on August 15, 2016.

Cowardin, L.M., V. Carter V., F.C. Golet, E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service Report No. FWS/OBS/-79/31.Washington, D.C.

Mack, J.J. 2001. Ohio Rapid Assessment Method 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.

NatureServe. 2016. NatureServe Explorer: An online encyclopedia of life [web application]. Version 7.0. NatureServe, Arlington, VA. U.S.A. Available at http://explorer.natureserve.org. Accessed August 2016.

Ohio Department of Natural Resources (ODNR), Division of Wildlife. 2016a. State Listed Wildlife Species by County. Available at http://wildlife.ohiodnr.gov/species-and-habitats/state-listed-species/state-listed-species-by-county. Accessed August 15, 2016.

ODNR, Division of Wildlife. 2016b. Species Guide Index. Available at http://wildlife.ohiodnr.gov/species-and-habitats/species-guide-index. Accessed August 2016.

Ohio Environmental Protection Agency (OEPA). 2006. Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI).

OEPA. 2012. Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams, Version 3.0. Ohio EPA Division of Surface Water, Columbus, Ohio. 117 pp.

U.S. Army Corps of Engineers (USACE), Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Engineer Waterway Experiment Station, Vicksburg, Mississippi.

USACE. 2002. Issuance of Nationwide Permits; Notice, 67 Fed. Reg. 10. January 15, 2002. Federal Register: The Daily Journal of the United States. Available at https://www.gpo.gov/fdsys/pkg/FR-2002-01-15/pdf/02-539.pdf.

USACE. 2005. *Guidance on Ordinary High Water Mark Identification* (Regulatory Guidance Letter, No. 05-05). Available online at http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl05-05.pdf. Accessed August 2016.

USACE. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0), ed. J.F. Berkowitz, J.S. Wakely R.W. Lichvar, C.V. Noble. ERDC/EL TR-12-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Fish and Wildlife Service (USFWS). 2007. Indiana bat (*Myotis sodalis*) draft recovery plan: First revision. U.S. Fish and Wildlife Service, Ft. Snelling, Minnesota. 258 pp.

USFWS. 2015a. Federally Listed Species by Ohio Counties. Available at https://www.fws.gov/midwest/ohio/pdf/OhioTEListByCountyOct2015.pdf. Accessed September 5, 2016.

USFWS. 2015b. 2015 Range-wide Indiana Bat Summer Survey Guidelines, April 2015. Available at http://www.fws.gov/arkansases/docs/FINAL%202015%20Indiana%20Bat%20Summer%20Survey%20Guidelines%20(with%20blue%20revisions)%2004-01-2015.pdf. Accessed August 2016.

USFWS. 2016. Environmental Conservation Online System (ECOS): Species Profile for Northern Long-eared Bat (*Myotis septentrionalis*). Available online at https://ecos.fws.gov/tess_public/profile/speciesProfile?spcode=A0JE. Accessed August 2016.

Appendix A Figures

A.1 FIGURE 1 – PROJECT LOCATION MAP

Figure No.
1

Title
Project Location Map

Client/Project
American Electric Power
Herlan Station Project

Project Location
Monroe County, Ohio

1937004664
Prepared by HDB on 2016-07-08
Technical Review by CP on 2016-07-08
Independent Review by JB on 2016-07-12

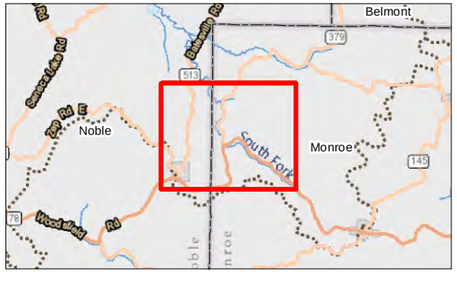
0 1,000 2,000 Feet

1:24,000 (At original document size of 11x17)

N

Legend

Study Area



Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources Include: Stantec, AEP
3. Background: USGS 7.5' Topographic Quadrangles

Stantec

A.2 FIGURE 2 – WETLAND AND WATERBODY DELINEATION MAP

Figure No.
2

Title
Wetland and Waterbody Delineation Map

Client/Project
American Electric Power
Herlan Station Project

Project Location
Monroe County, Ohio

1937004664
Prepared by HDB on 2016-08-29
Technical Review by CP on 2016-07-08
Independent Review by NN on 2016-09-05

N

0 250 Feet

1:3,000 (At original document size of 11x17)

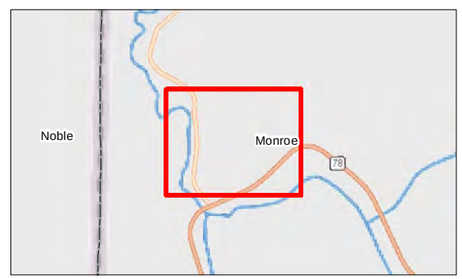
Legend

- Existing Access Road - Field Verified
- AEP Proposed Access Road
- Proposed Herlan Station Site Boundary
- Study Area
- Wetland Determination Sample Point
- Photo Location
- Field Delineated Waterway
- Approximate Waterway
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- NHD Waterbody

FEMA Flood Zones

- 100-year Flood Zone
- 100-year Floodway*

*No features within data frame



Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources Include: Stantec, AEP, NADS, FEMA, USGS, USFWS
3. Orthophotography: 2015 NAIP

Stantec

A.3 FIGURE 3 – HABITAT ASSESSMENT MAP

Figure No.
3

Title
Habitat Assessment Map

Client/Project
American Electric Power
Herlan Station Project

Project Location
Monroe County, Ohio

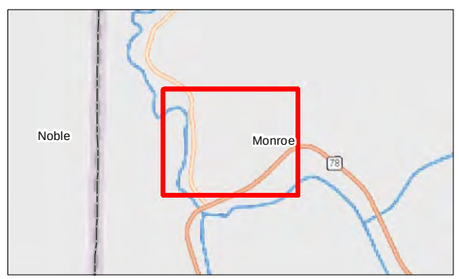
1937004664
Prepared by HDB on 2016-08-29
Technical Review by CP on 2016-07-08
Independent Review by NN on 2016-09-05

0 250 Feet
1:3,000 (At original document size of 11x17)

N

Legend
- Existing Access Road - Field Verified
- AEP Proposed Access Road
- Proposed Herlan Station Site Boundary
- Study Area
- Potential Bat Roost Tree
- Wetland Determination Sample Point
- Photo Location
- Field Delineated Waterway
- Approximate Waterway
- Upland Drainage Feature
- Approximate Upland Drainage Feature
- Early Successional/ Second Growth Deciduous Forest
- Old Field
- Hay Field

*No features within data frame



Notes
1. Coordinate System: NAD 1983 StatePlane Ohio South FIPS 3402 Feet
2. Data Sources Include: Stantec, AEP, NADS
3. Orthophotography: 2015 NAIP

Stantec

Appendix B Agency Correspondence

Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR JAMES ZEHRINGER, DIRECTOR

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

September 28, 2016

Dan Godec
Stantec
11687 Lebanon Road
Cincinnati OH 45241

Re: 16-592; Request for Technical Assistance, Herlan Station Project

Project: The proposed project consists of constructing a new substation off Cole Road

Location: The proposed project is located in Seneca Township, Monroe County, Ohio.

The Ohio Department of Natural Resources (ODNR) has completed a review of the above referenced project. These comments were generated by an inter-disciplinary review within the Department. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act, the Coastal Zone Management Act, Ohio Revised Code and other applicable laws and regulations. These comments are also based on ODNR's experience as the state natural resource management agency and do not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Natural Heritage Database: The Natural Heritage Database has no records at or within a one mile radius of the project area.

A review of the Ohio Natural Heritage Database indicates there are no records of state endangered or threatened plants or animals within the project area. There are also no records of state potentially threatened plants, special interest or species of concern animals, or any federally listed species. In addition, we are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, state nature preserves, state or national parks, state or national forests, national wildlife refuges, or other protected natural areas within the project area. The review was performed on the project area you specified in your request as well as an additional one mile radius. Records searched date from 1980.

Please note that Ohio has not been completely surveyed and we rely on receiving information from many sources. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. Although all types of plant communities have been surveyed, we only maintain records on the highest quality areas.

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

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

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

The project is within the range of the Ohio lamprey (*Ichthyomyzon bdellium*) a state endangered fish, the channel darter (*Percina copelandi*), a state threatened fish, the Tippecanoe darter (*Etheostoma tippecanoe*), a state threatened fish, and the river darter (*Percina shumardi*), a state threatened fish. The DOW recommends no in-water work in perennial streams from April 15 through June 30 to reduce impacts to indigenous aquatic species and their habitat. If no in-water work is proposed in a perennial stream, this project is not likely to impact these or other aquatic species.

The project is within the range of the eastern hellbender (*Cryptobranchus alleganiensis alleganiensis*), a state endangered species and a federal species of concern. Due to the location, and that there is no in-water work proposed in a perennial stream of sufficient size to provide suitable habitat, this project is not likely to impact this species.

The project is within the range of the black bear (*Ursus americanus*), a state endangered species. Due to the mobility of this species, this project is not likely to impact this species.

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

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

Based upon the site map identifying the location of the proposed development, the project appears to be located outside the Special Flood Hazard Area (i.e., one-percent-annual-chance or 100-year floodplain). For information regarding any additional or higher standards for local floodplain management requirements, please contact Carroll County's designated Floodplain Manager, Ms. Tammy Dowdell at 330-627-0003 or tdowdell@carrollcountyohio.us.

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

John Kessler
ODNR Office of Real Estate
2045 Morse Road, Building E-2
Columbus, Ohio 43229-6693
John.Kessler@dnr.state.oh.us

Ohio Department of Natural Resources

JOHN R. KASICH, GOVERNOR JAMES ZEHRINGER, DIRECTOR

Ohio Division of Wildlife
Raymond W. Petering, Chief
2045 Morse Rd., Bldg. G
Columbus, OH 43229-6693
Phone: (614) 265-6300

August 11, 2016

Dan Godec
Stantec Consulting Services, Inc.
11687 Lebanon Rd.
Cincinnati, OH 45241

Dear Mr. Godec,

After reviewing the Natural Heritage Database, I find the Division of Wildlife has no records of rare or endangered species in the Herlan Station project area, including a one mile radius, in Seneca Township, Monroe County, Ohio. We are unaware of any unique ecological sites, geologic features, animal assemblages, scenic rivers, state wildlife areas, nature preserves, parks or forests, national wildlife refuges, parks or forests or other protected natural areas within a one mile radius of the project area.

Our inventory program has not completely surveyed Ohio and relies on information supplied by many individuals and organizations. Therefore, a lack of records for any particular area is not a statement that rare species or unique features are absent from that area. This letter only represents a review of rare species and natural features data within the Ohio Natural Heritage Database. It does not fulfill coordination under the National Environmental Policy Act (NEPA) or the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S. C. 661 et seq.) and does not supersede or replace the regulatory authority of any local, state or federal agency nor relieve the applicant of the obligation to comply with any local, state or federal laws or regulations.

Please contact me at 614-265-6818 if I can be of further assistance.

Sincerely,

Debbie Woischke

Debbie Woischke
Ohio Natural Heritage Database Program

Godec, Daniel

From: susan_zimmermann@fws.gov on behalf of Ohio, FW3 <ohio@fws.gov>
Sent: Tuesday, August 23, 2016 3:12 PM
To: Godec, Daniel
Cc: nathan.reardon@dnr.state.oh.us; kate.parsons@dnr.state.oh.us
Subject: Herlan Station Project, AEP Ohio Transmission, Monroe Co. OH

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

TAILS# 03E15000-2016-TA-1535

Dear Mr. Godec,

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 non-forested habitats such as emergent wetlands and adjacent edges of agricultural fields, old fields and pastures. This includes forests and woodlots containing potential roosts (i.e., live trees and/or snags ≥3 inches diameter at breast height (dbh) that have any exfoliating bark, cracks, crevices, hollows and/or cavities), as well as linear features such as fencerows, riparian forests, and other wooded corridors. These wooded areas may be dense or loose aggregates of trees with variable amounts of canopy closure. Individual trees may be considered suitable habitat when they exhibit the characteristics of a potential roost tree and are located within 1,000 feet (305 meters) of other forested/wooded habitat. Northern long-eared bats have also been observed roosting in human-made structures, such as buildings, barns, bridges, and bat houses; therefore, these structures

should also be considered potential summer habitat. In the winter, Indiana bats and northern long-eared bats hibernate in caves and abandoned mines.

The proposed project is in the vicinity of one or more confirmed records of Indiana bats. Therefore, we recommend that trees ≥3 inches dbh be saved wherever possible. Because the project will result in a small amount of forest clearing relative to the available habitat in the immediately surrounding area, habitat removal is unlikely to result in significant impacts to these species. Since Indiana bat presence in the vicinity of the project has been confirmed, clearing of trees ≥3 inches dbh during the summer roosting season may result in direct take of individuals. 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 tree removal is unavoidable, we recommend that removal of any trees ≥3 inches dbh only occur between October 1 and March 31. Following this seasonal tree clearing recommendation should ensure that any effects to Indiana bats and northern long-eared bats are insignificant or discountable. **Please note that, because Indiana bat presence has already been confirmed in the project vicinity, any additional summer surveys would not constitute presence/absence surveys for this species.**

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

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

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

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

Sincerely,

Dan Everson

Field Office Supervisor

cc: Nathan Reardon, ODNR-DOW

Kate Parsons, ODNR-DOW

Appendix C Representative Photographs

Photograph 1. View of Stream 1. Photo taken facing upstream.

Photograph 2. View of Stream 1. Photo taken facing downstream.

Photograph 3. View of Stream 2. Photo taken facing upstream.

Photograph 4. View of Stream 2. Photo taken facing downstream.

Photograph 5. View of Stream 3. Photo taken facing upstream.

Photograph 6. View of Stream 3. Photo taken facing downstream.

Photograph 7. View of Stream 4. Photo taken facing downstream.

Photograph 8. View of Stream 4. Photo taken facing upstream.

Photograph 9. View of upland (old field habitat) at wetland determination sample point (SP 1). Photo taken facing south.

Photograph 10. View of upland drainage feature within southwest portion of study area. Photo taken facing east.

Photograph 11. View of upland drainage feature within southwest portion of study area. Photo taken facing southwest.

Photograph 12. View of upland drainage feature near southwest portion of study area. Photo taken facing southeast.

Photograph 13. View of terminus of upland drainage feature near State Route 379, showing loss of defined bed and bank and no connection to jurisdictional streams. Photo taken facing south.

Photograph 14. View of terminus of upland drainage feature near State Route 379, showing loss of defined bed and bank and no connection to jurisdictional streams. Photo taken facing north.

Photograph 15. View of potential bat roost tree (PRT-1) in west-central portion of study area. Photo taken facing northwest.

Photograph 16. View of potential bat roost tree (PRT-1). Photo taken facing southwest.

Photograph 17. Representative view of hay field habitat. Photo taken facing northeast.

Photograph 18. Representative view of old field habitat. Photo taken facing west.

Photograph 19. Representative view of mixed early successional/second growth deciduous forest habitat. Photo taken facing southeast.

Photograph 20. Representative view of existing two-track dirt access road. Photo taken facing northeast.

Photograph 21. Representative view of existing two-track dirt access road. Photo taken facing southwest.

Appendix D Data Forms

D.1 HHEI DATA FORMS

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 33

SITE NAME/LOCATION Harlan Station Project

SITE NUMBER Stream 1 RIVER BASIN Ohio DRAINAGE AREA (mi²) < 0.5 mi. 2

LENGTH OF STREAM REACH (ft) 200 LAT. 39.813191 LONG. -81.305699 RIVER CODE _____ RIVER MILE _____

DATE 8/4/16 SCORER AJK COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]		☐	SILT [3 pt]	15
☒	BOULDER (>256 mm) [16 pts]	30	☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pt]	3	☐	FINE DETRITUS [3 pts]	
☐	COBBLE (65-256 mm) [12 pts]	15	☒	CLAY or HARDPAN [0 pt]	25
☐	GRAVEL (2-64 mm) [9 pts]	7	☐	MUCK [0 pts]	
☐	SAND (<2 mm) [6 pts]	5	☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 48% (A) 16 (B) 7

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40: 23

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]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☒ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): 3

Pool Depth Max = 30: 5

3. 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 (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☒ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): 0.7

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L R	FLOODPLAIN QUALITY (Most Predominant per Bank) L R	L R
☒ ☒ Wide >10m	☐ ☐ Mature Forest, Wetland	☐ ☐ Conservation Tillage
☐ ☐ Moderate 5-10m	☒ ☒ Immature Forest, Shrub or Old Field	☐ ☐ Urban or Industrial
☐ ☐ Narrow <5m	☐ ☐ Residential, Park, New Field	☐ ☐ Open Pasture, Row Crop
☐ ☐ None	☐ ☐ Fenced Pasture	☐ ☐ Mining or Construction

COMMENTS _____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☒ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS Int, ground water present

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☒ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☒ Severe (10 ft/100 ft)

June 20, 2008 Revision

stream 1

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: South Fork Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Summerfield NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Summerfield

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 8/1/16 Quantity: 0.05"

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 5

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) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): Y (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

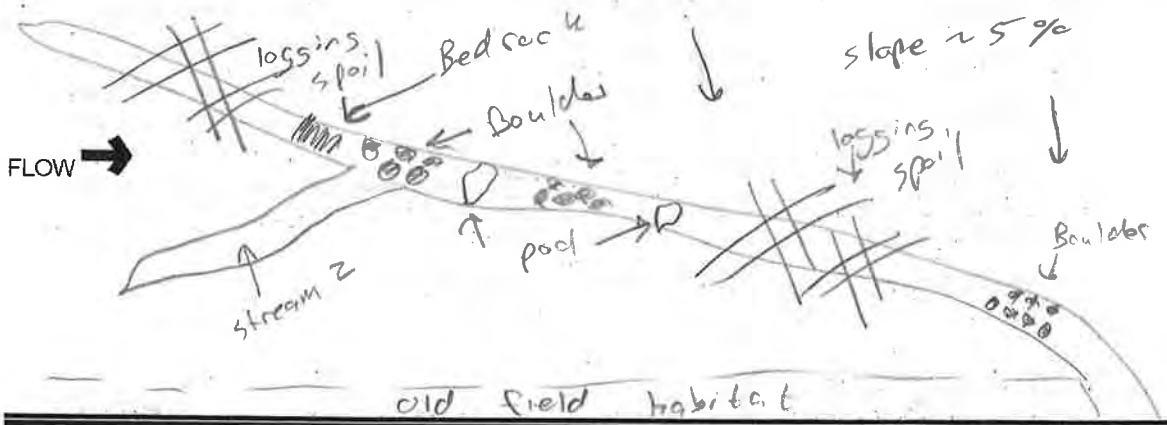
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) Y Voucher? (Y/N) N

Comments Regarding Biology: scud, pill bug, oligichete, ephemeroptera

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



Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 20

SITE NAME/LOCATION Herlan Station Project

SITE NUMBER Stream 2 RIVER BASIN Ohio DRAINAGE AREA (mi^2) < 0.1 mi^2

LENGTH OF STREAM REACH (ft) 100 LAT. 39.813500 LONG. -82.305441 RIVER CODE _____ RIVER MILE _____

DATE 8/4/16 SCORER ASK COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☒☐	SILT [3 pt]	25
☐☐	BOULDER (>256 mm) [16 pts]	15	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]	2	☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]	5	☐☒	CLAY or HARDPAN [0 pt]	20
☐☐	GRAVEL (2-64 mm) [9 pts]	8	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]	15	☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 22 (A) 3 (B) 7

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40: 10

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]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☒ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): 4

Pool Depth Max = 30: 5

3. 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 (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☒ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): 0.7

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH L	R	(Per Bank)	FLOODPLAIN QUALITY L	R	(Most Predominant per Bank)	L	R	
☒	☒	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☒	☒	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS _____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☒ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS Int. ground water present

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☒ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☒ Severe (10 ft/100 ft)

June 20, 2008 Revision

Stream 2

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: South fork Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Summerfield NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Summerfield

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 8/1/16 Quantity: 0.05"

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 5%

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) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

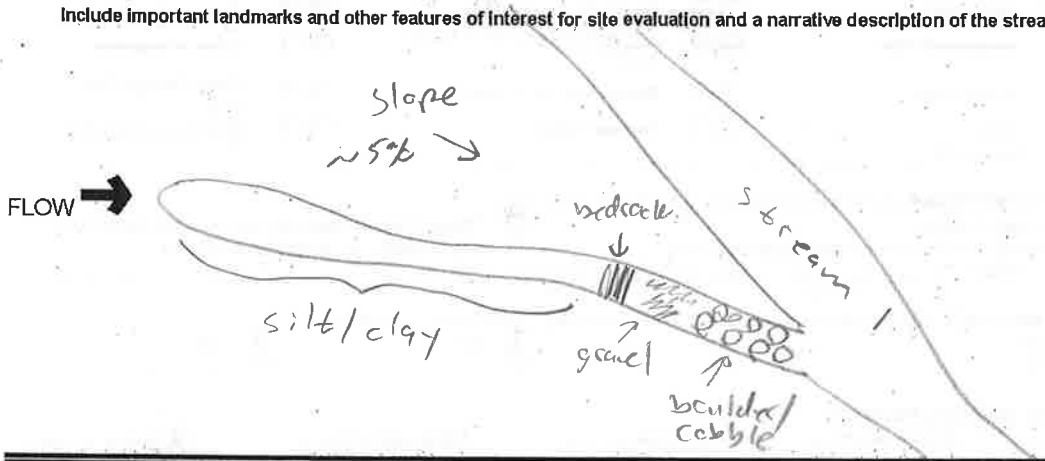
Performed? (Y/N): Y (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N)____ Voucher? (Y/N)____ Salamanders Observed? (Y/N)____ Voucher? (Y/N)____
Frogs or Tadpoles Observed? (Y/N)____ Voucher? (Y/N)____ Aquatic Macroinvertebrates Observed? (Y/N)____ Voucher? (Y/N)____

Comments Regarding Biology: none observed

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



OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 39

SITE NAME/LOCATION Heslop Station Project

SITE NUMBER Stream 3 RIVER BASIN Ohio DRAINAGE AREA (mi²) 0.05 mi²

LENGTH OF STREAM REACH (ft) 200 LAT 39.815097 LONG. -81.305197 RIVER CODE _____ RIVER MILE _____

DATE 8/5/16 SCORER AJK COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]	10	☒☐	SILT [3 pt]	30
☐☐	BOULDER (>256 mm) [16 pts]	7	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]	3	☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]	10	☐☐	CLAY or HARDPAN [0 pt]	15
☐☒	GRAVEL (2-64 mm) [9 pts]	25	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 30 (A) 12

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B) 7 TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40: 19

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]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☒ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): 4

Pool Depth Max = 30: 5

3. 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 (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☒ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): 1.2

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank)		FLOODPLAIN QUALITY (Most Predominant per Bank)		
L R		L R		L R	
☒☒	Wide >10m	☐☐	Mature Forest, Wetland	☐☐	Conservation Tillage
☐☐	Moderate 5-10m	☒☒	Immature Forest, Shrub or Old Field	☐☐	Urban or Industrial
☐☐	Narrow <5m	☐☐	Residential, Park, New Field	☐☐	Open Pasture, Row Crop
☐☐	None	☐☐	Fenced Pasture	☐☐	Mining or Construction

COMMENTS _____

FLOW REGIME *(At Time of Evaluation)* (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☒ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS ground water present

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☐ None	☐ 1.0	☐ 2.0	☐ 3.0
☒ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☒ Moderate to Severe ☐ Severe (10 ft/100 ft)

June 20, 2008 Revision

stream 3

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☒ WWH Name: South fork Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Summerfield NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Summerfield

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 8/1/16 Quantity: 0.65"

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 5%

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) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): Y (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

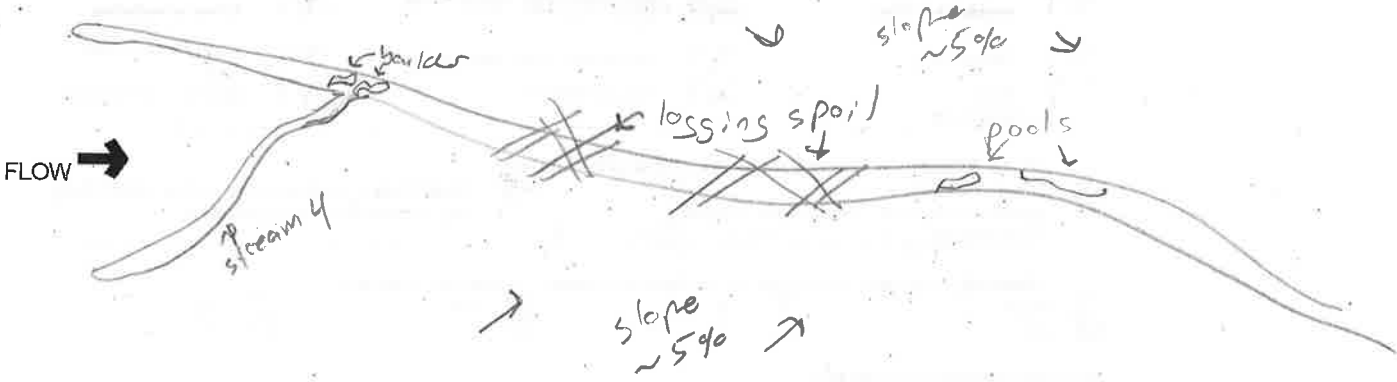
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) Y Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 18

SITE NAME/LOCATION Heslop station Project

SITE NUMBER Stream 4 RIVER BASIN Ohio DRAINAGE AREA (mi²) <0.1 mi²

LENGTH OF STREAM REACH (ft) 100 LAT. 39.815198 LONG. 81.30442 RIVER CODE _____ RIVER MILE _____

DATE 8/5/16 SCORER AJK COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☒ NONE / NATURAL CHANNEL ☐ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check *ONLY* two predominant substrate *TYPE* boxes (Max of 40). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☒☐	SILT [3 pt]	30
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]	20	☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]	10	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]	10	☐☐	MUCK [0 pts]	
☐☒	SAND (<2 mm) [6 pts]	30	☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 30 (A) 9

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B) 4

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40: 13

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]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

3. 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 (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☒ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): 1.0

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH L R (Per Bank)	FLOODPLAIN QUALITY L R (Most Predominant per Bank)	L R	
☒☒ Wide >10m	☐☐ Mature Forest, Wetland	☐☐	Conservation Tillage
☐☐ Moderate 5-10m	☒☒ Immature Forest, Shrub or Old Field	☐☐	Urban or Industrial
☐☐ Narrow <5m	☐☐ Residential, Park, New Field	☐☐	Open Pasture, Row Crop
☐☐ None	☐☐ Fenced Pasture	☐☐	Mining or Construction

COMMENTS _____

FLOW REGIME (*At Time of Evaluation*) (Check *ONLY* one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☒ Dry channel, no water (Ephemeral)

COMMENTS Ephemeral, no ground water

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check *ONLY* one box):

☒ None	☐ 1.0	☐ 2.0	☐ 3.0
☐ 0.5	☐ 1.5	☐ 2.5	☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☒ Moderate to Severe ☐ Severe (10 ft/100 ft)

June 20, 2008 Revision

Stream 4

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed):

QHEI PERFORMED? - ☐ Yes ☒ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

~~☐~~ WWH Name: South Fork Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: Summerfield NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Monroe Township / City: Summerfield

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 8/1/16 Quantity: 0.05"

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 5%

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) _____

Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): Y (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

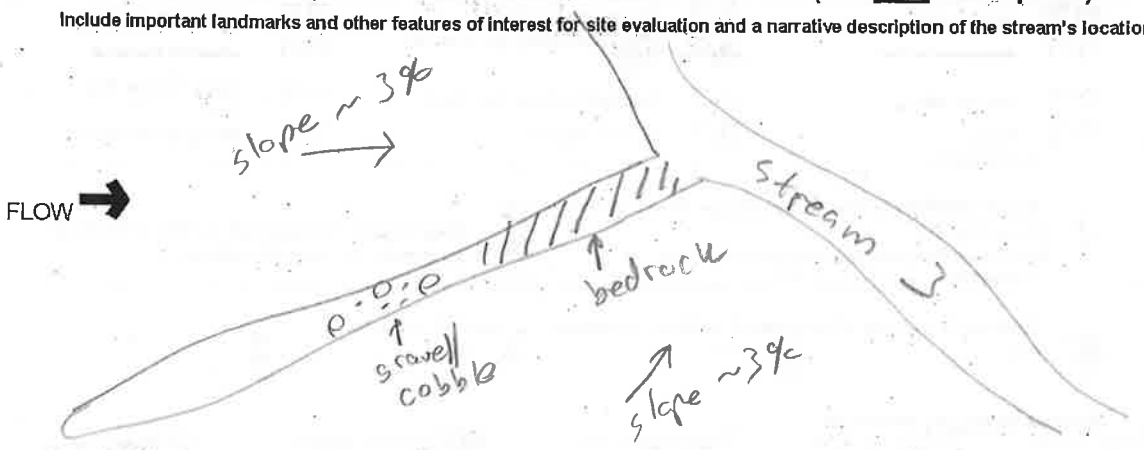
Fish Observed? (Y/N)_____ Voucher? (Y/N)_____ Salamanders Observed? (Y/N)_____ Voucher? (Y/N)_____

Frogs or Tadpoles Observed? (Y/N)_____ Voucher? (Y/N)_____ Aquatic Macroinvertebrates Observed? (Y/N)_____ Voucher? (Y/N)_____

Comments Regarding Biology: none observed. Dry channel

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



D.2 WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM
Eastern Mountains and Piedmont Region

Project/Site:	Herlan Station Project	Stantec Project #:	193704664
Applicant:	AEP		
Investigator #1:	Aaron Kwolek	Investigator #2:	
Soil Unit:	GwD2 - Guernsey-Westmore silt loam, 12-18% slopes	NWI/WWI Classification:	N/A
Landform:	Side slope	Local Relief:	Convex
Slope (%):	1	Latitude: 39.81	Longitude: -81.303734
Datum:	NAD 83		

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

Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ significantly disturbed?
Are Vegetation ☐ , Soil ☐ , or Hydrology ☐ naturally problematic?

Are normal circumstances present? ☑ Yes ☐ No

Date:	08/05/16
County:	Monroe
State:	Ohio
Wetland ID:	Non-JD Point
Sample Point:	**SP-1**
Community ID:	UPL
Section:	21
Township:	7N
Range:	7W Dir: --

SUMMARY OF FINDINGS

Hydrophytic Vegetation Present?	☐ Yes ☑ No	Hydric Soils Present?	☐ Yes ☑ No
Wetland Hydrology Present?	☐ Yes ☑ No	Is This Sampling Point Within A Wetland?	☐ **Yes** ☑ **No**

Remarks:

HYDROLOGY

Wetland Hydrology Indicators (Check here if indicators are not present ☐):

Primary:
- ☐ A1 - Surface Water
- ☐ A2 - High Water Table
- ☐ A3 - Saturation
- ☐ B1 - Water Marks
- ☐ B2 - Sediment Deposits
- ☐ B3 - Drift Deposits
- ☐ B4 - Algal Mat or Crust
- ☐ B5 - Iron Deposits
- ☐ B7 - Inundation Visible on Aerial Imagery
- ☐ B9 - Water-Stained Leaves
- ☐ B13 - Aquatic Fauna
- ☐ B14 - True Aquatic Plants
- ☐ C1 - Hydrogen Sulfide Odor
- ☐ C3 - Oxidized Rhizospheres on Living Roots
- ☐ C4 - Presence of Reduced Iron
- ☐ C6 - Recent Iron Reduction in Tilled Soils
- ☐ C7 - Thin Muck Surface
- ☐ Other (Explain in Remarks)

Secondary:
- ☐ B6 - Surface Soil Cracks
- ☐ B8 - Sparsely Vegetated Concave Surface
- ☐ B10 - Drainage Patterns
- ☐ B16 - Moss Trim Lines
- ☐ C2 - Dry Season Water Table
- ☐ C8 - Crayfish Burrows
- ☐ C9 - Saturation Visible on Aerial Imagery
- ☐ D1 - Stunted or Stressed Plants
- ☐ D2 - Geomorphic Position
- ☐ D3 - Shallow Aquitard
- ☐ D4 - Microtopographic Relief
- ☐ D5 - FAC-Neutral Test

Field Observations:

Surface Water Present?	☐ Yes ☑ No	Depth:	0	(in.)
Water Table Present?	☐ Yes ☑ No	Depth:	0	(in.)
Saturation Present?	☐ Yes ☑ No	Depth:	0	(in.)

Wetland Hydrology Present? ☐ Yes ☑ No

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

Remarks:

SOILS

Map Unit Name: GwD2 - Guernsey-Westmore silt loam, 12-18% slopes Series Drainage Class: Well Drained to Somewhat Poorly Dra

Taxonomy (Subgroup): [E.g. Typic Hapludalfs]

Profile Description (Describe to the depth needed to document the indicator or confirm the absence of indicators.) (Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered/Coated Sand Grains; Location: PL=Pore Lining, M=Matrix)

Top Depth	Bottom Depth	Horizon	Matrix Color (Moist)	Matrix %	Mottles Color (Moist)	Mottles %	Mottles Type	Mottles Location	Texture (e.g. clay, sand, loam)
0	16	1	10YR 4/4	100	--	--	--	--	silt loam
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--	--	--

NRCS Hydric Soil Field Indicators (check here if indicators are not present ☐):
- ☐ A1- Histosol
- ☐ A2 - Histic Epipedon
- ☐ A3 - Black Histic
- ☐ A4 - Hydrogen Sulfide
- ☐ A5 - Stratified Layers
- ☐ A10 - 2 cm Muck (LRR N)
- ☐ A11 - Depleted Below Dark Surface
- ☐ A12 - Thick Dark Surface
- ☐ S1 - Sandy Muck Mineral (LRR N, MLRA 147, 148)
- ☐ S4 - Sandy Gleyed Matrix
- ☐ S5 - Sandy Redox
- ☐ S6 - Stripped Matrix
- ☐ S7 - Dark Surface
- ☐ S8 - Polyvalue Below Dark Surface (MLRA 147, 148)
- ☐ S9 - Thin Dark Surface (MLRA 147, 148)
- ☐ F2 - Loamy Gleyed Matrix
- ☐ F3 - Depleted Matirx
- ☐ F6 - Redox Dark Surface
- ☐ F7 - Depleted Dark Surface
- ☐ F8 - Redox Depressions
- ☐ F12 - Iron-Manganese Masses (LRR N, MLRA 136)
- ☐ F13 - Umbric Surface (MLRA 122, 136)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 148)
- ☐ F21 - Red Parent Material (MLRA 127, 147)

Indicators for Problematic Soils [1]
- ☐ A10 - 2cm Muck (MLRA 147)
- ☐ A16 - Coast Prairie Redox (MLRA 147, 148)
- ☐ F19 - Piedmont Floodplain Soils (MLRA 136, 147)
- ☐ TF12 - Very Shallow Dark Surface
- ☐ Other (Explain in Remarks)

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

Restrictive Layer (If Observed) Type: N/A Depth: N/A

Hydric Soil Present? ☐ Yes ☑ No

Remarks:

WETLAND DETERMINATION DATA FORM
Eastern Mountains and Piedmont Region

Project/Site: Herlan Station Project — Wetland ID: Non-JD Point — Sample Point: **SP-1**

VEGETATION (Species identified in all uppercase are non-native species.)

Tree Stratum (Plot size: 30 ft radius)

	Species Name	% Cover	Dominant	Ind.Status
1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	0		

Sapling/Shrub Stratum (Plot size: 15 ft radius)

1.	*Juglans nigra*	15	Y	FACU
2.	*Sambucus nigra*	2	N	FAC
3.	*Rubus allegheniensis*	3	N	FACU
4.	--	--	--	--
5.	--	--	--	--
6.	--	--	--	--
7.	--	--	--	--
8.	--	--	--	--
9.	--	--	--	--
10.	--	--	--	--
	Total Cover =	20		

Herb Stratum (Plot size: 5 ft radius)

1.	*Echinochloa muricata*	5	N	FACW
2.	*Schedonorus arundinaceus*	20	Y	FACU
3.	*Solidago altissima*	25	Y	FACU
4.	*Elymus canadensis*	15	Y	FACU
5.	*Parthenocissus quinquefolia*	5	N	FACU
6	*Toxicodendron radicans*	3	N	FAC
7.	*Dipsacus fullonum*	5	N	FACU
8.	*Carex vulpinoidea*	2	N	OBL
9.	*Vernonia gigantea*	5	N	FAC
10.	*Trifolium hybridum*	10	N	FACU
11.	*Trifolium pratense*	5	N	FACU
12.	--	--	--	--
13.	--	--	--	--
14.	--	--	--	--
15.	--	--	--	--
	Total Cover =	100		

Woody Vine Stratum (Plot size: 30 ft radius)

1.	--	--	--	--
2.	--	--	--	--
3.	--	--	--	--
4.	--	--	--	--
5.	--	--	--	--
	Total Cover =	0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: ***0.0%*** (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL spp.	2	x 1 =	2
FACW spp.	5	x 2 =	10
FAC spp.	10	x 3 =	30
FACU spp.	103	x 4 =	412
UPL spp.	0	x 5 =	0
Total	120 (A)		454 (B)

Prevalence Index = B/A = ***3.783***

Hydrophytic Vegetation Indicators:

- ☐ Yes ☑ No — Rapid Test for Hydrophytic Vegetation
- ☐ Yes ☑ No — Dominance Test is > 50%
- ☐ Yes ☑ No — Prevalence Index is ≤ 3.0 *
- ☐ Yes ☑ No — Morphological Adaptations (Explain) *
- ☐ Yes ☑ No — Problem Hydrophytic Vegetation (Explain) *

* Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree - Woody plants 3 in. (7.6cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub - Woody plants less than 3 in. DBH and greater than 3.28 ft. tall.

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft. tall.

Woody Vines - All woody vines greater than 3.28 ft. in height.

Hydrophytic Vegetation Present ☐ Yes ☑ No

Remarks:

Additional Remarks:

Summary: Letter of Notification -Herlan 138 kV Switching Substation Project Part 5 of 5 electronically filed by Mrs. Erin C Miller on behalf of AEP Ohio Transmission Company