November 21, 2014

Chairman Thomas Johnson  
Public Utilities Commission of Ohio  
Ohio Power Siting Board  
180 East Broad Street  
Columbus, Ohio 43215-3793

RE: Case No. 14-1818-EL-BLN Request for Expedited Treatment:  
In the Matter of the Letter of Notification of the Nottingham Switch Project by AEP Ohio Transmission Company.

Dear Chairman Johnson:

Attached please find a copy of the Letter of Notification (LON) for the Nottingham Switch Project by AEP Ohio Transmission Company. This filing and notice is in accordance with O.A.C. 4906-11-01.

A copy of this filing is also being presented to the executive director or the executive director's designee. A copy was provided earlier today to the Board Staff via electronic message. The Company is also submitting a check in the amount of $2,000 to the Treasurer, State of Ohio, for Fund 5610 for the expedited fees.

Please contact me if there are any questions..

Respectfully submitted,

///ss// Matthew J. Satterwhite

Matthew J. Satterwhite  
Senior Counsel

cc: Werner Margard, Counsel OPSB Staff  
Patrick Donlon and Jon Pawley, OPSB Staff
LETTER OF NOTIFICATION FOR THE
NOTTINGHAM SWITCH PROJECT

PUCO Case No. 14-1818-EL-BLN

Submitted pursuant to OAC 4906-11-01

AEP Ohio Transmission Company
(AEP Ohio Transco)

NOVEMBER 2014
LETTER OF NOTIFICATION
Nottingham Switch Project

American Electric Power Ohio Transmission Company (AEP Ohio Transco) is providing the following information in accordance with the procedures delineated in Ohio Administrative Code Section 4906-11-01: Letter of Notification Requirements of the Rules and Regulations of the Ohio Power Siting Board (OPSB).

4906-11-01(B) GENERAL INFORMATION

1. The name of the project and applicant’s reference number, if any, names and reference numbers(s) of resulting circuits and a brief description of the project, and why the project meets the requirements of a letter of notification.

The proposed Installation of the Nottingham Switch Project (Project) is for a specific customer and is not identified in any Long-Term Forecast Reports (LTFRs).

The Project consists of constructing a new 138 kV transmission switching station to be known as Nottingham Switch. As proposed in this Letter of Notification, the Nottingham Switch will be constructed on property currently owned by Consolidated Coal Company, but in the process of being purchased by AEP Ohio Transco. AEP Ohio Transco anticipates closing on the property by the end of 2014. The approximately 130-acre overall property is adjacent to Stumptown Road near the intersection of Cadiz Flushing Road in Athens Township, Harrison County, Ohio. Figure 1 shows the location of the project in relation to the surrounding vicinity. The switch fence line is approximately 10.9 acres in size and situated approximately 0.25 mile north of Stumptown Road and approximately 0.4 mile south of Slater Road. A preliminary overview of the switch equipment layout is provided as Figure 2. A preliminary grading plan is provided as Figure 3.

The Nottingham Switch property is crossed by four FirstEnergy lines. Interconnections to these lines, which will be submitted to OPSB by FirstEnergy in a separate filing, will energize Nottingham Switch. An approximately five-mile 138 kV transmission line will be extended generally north primarily across Consolidated Coal Company property to the existing Freebyrd Station to meet the needs of a specific customer. Due to the needs of the specific customer and necessary construction schedule for Nottingham Switch, AEP Ohio Transco will submit the Nottingham-Freebyrd 138 kV transmission line as a separate Letter of Notification, although Nottingham Switch and the Nottingham-Freebyrd 138 kV transmission line portions of the Project are both necessary to meet the needs of the specific customer.
The Nottingham-Freebyrd 138 kV transmission line portion of the Project meets the requirements for a Letter of Notification because it is within the types of projects defined by Item (1)(f) of Attachment A of the interim process defined in the OPSB’s September 4, 2012 Finding and Order in Docket 12-1981-GE-BRO. This item states:

(1) Rerouting or extension of new construction of single or multiple circuit electric power transmission line(s) as follows:

(f) Lines(s) primarily needed to attract or meet the requirements of a specific customer or customers.

The switching station portion of the Project is considered an associated facility to the Freebyrd-Nottingham 138 kV line.

2. 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 purpose of this Project is to meet the needs of a specific customer, Markwest. Markwest has requested an increase in load capacity from 20 MW to 94 MW at its existing Utica Plant along Industrial Park Road in the City of Cadiz, Harrison County, Ohio. A new 138 kV switching station, Nottingham Switch, is to be built in a breaker and a half configuration in order to serve the Markwest Utica Plant via the proposed Nottingham-Freebyrd 138 kV transmission line.

3. The location of the project in relation to existing or proposed lines and stations shown on maps and overlays provided to the Public Utilities Commission of Ohio in the applicant’s most recent long term forecast report.

This project is designed to meet the needs of a specific customer, Markwest’s Utica Plant, and is not referenced in any of AEP Ohio Transco’s LTFRs submitted to the Public Utilities Commission of Ohio. Figure 1 shows the general location of the Project in relation to FirstEnergy’s existing four 138 kV lines, which will energize Nottingham Switch.
4. **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, natural environment, construction, or engineering aspects of the project.

AEP Ohio Transco was contacted by Markwest regarding their specific needs. AEP Ohio Transco worked with Markwest to identify a solution for their specific projected electrical load needs. Inserting a 138 kV switch along the four existing FirstEnergy 138 kV lines near the customer load need and routing a new 138 kV line to Freebyrd Station was identified as the best solution. AEP Ohio Transco explored available property options along the four FirstEnergy 138 kV lines in the area of customer need. AEP Ohio Transco identified the Consolidated Coal Company, a major landowner in the vicinity, as having potentially feasible land crossed and adjacent to the four FirstEnergy lines. AEP Ohio Transco and Consolidated Coal Company worked to identify the selected site, which is agreeable to both parties. AEP Ohio Transco identified no additional sites that were both available and better than the selected location.

5. **The anticipated construction schedule and proposed in-service date of project.**

Vegetation clearing, which is expected to be minimal, is scheduled to begin in February 2015, and grading is scheduled to begin in May 2015. Once grading is completed, construction of the switch will begin in October 2015. The in-service date for the Project is December 1, 2016.

6. **An area map of not less than 1:24,000-scale clearly depicting the facility's centerline with clearly marked streets, roads, and highways, and clearly written instructions for locating and viewing the facility.**

Figure 1 provides the proposed Project location on the United States Geological Survey (USGS) 7.5-minute topographic map of the Flushing, Ohio quadrangle. To access the Project location from public roads, take Interstate 70 East from Columbus for approximately 112 miles to Exit 213, to Ohio Route 331 North and Ohio Route 149 North towards New Athens for 11.3 miles. Turn left on State Route 519 (Stumptown Road) and continue for approximately 2.3 miles. The project site is located to the northeast of the intersection of Stumptown Road and Cadiz-Flushing Road.
7. 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.

Nottingham Switch is located on an overall property currently owned by Consolidated Coal Company. The switch site will be transferred to AEP Ohio Transco prior to the start of construction. No additional properties, easements, options, or land use agreements are necessary for the Nottingham Switch portion of the Project.

(C) TECHNICAL FEATURES OF THE PROJECT

1. Operating characteristics, estimated number and types of structures required, and right-of-way and/or land requirements.

The equipment and facilities described below will be installed within the fenced area of the proposed switch. Typical cross sections of the switch equipment proposed for the Project are shown in the Figure 4.

Breakers: There will be 24 3000A, 63kA circuit breakers and foundations installed at the switching station.

Switchgear: The switchgear will consist of 69 3000A, 100kA disconnect switches mounted on tubular steel structures.

Bus Arrangement and Structures: The switching station will utilize a breaker and a half configuration with tubular and tapered tubular steel.

Equipment support steel structures will be designed using hot-rolled structural steel shapes such as wide flange, tubing, channels and angles or as folded plate tapered tubular structures. Dead-end structures will be made of tapered tubular steel. All yard structures will be ASTM A36, ASTM A500, or ASTM A572 steel hot-dip galvanized for corrosion protection.

Transformers: As a 138 kV switching station, no transformers are proposed.

Control Buildings: The control houses will consist of pre-engineered or factory fabricated metal buildings to contain all switch control and relay panels and miscellaneous equipment. This would include an RTU, DC distribution panel, batteries, battery chargers,
and other miscellaneous equipment. The control houses will include building HVAC and internal lighting. The switch facility will not be manned. Plumbing facilities are not required.

Other Major Equipment: Other equipment can include a 28.8MVAR capacitor bank, surge arresters, metering class current transformers, capacitor voltage transformers (CVT’s), and switch service voltage transformers (SSVT’s), wave traps, current transformers (CT’s) and potential transformers (PT’s).

Lighting systems at the switching station will be necessary for safety, security, and to comply with applicable standards. There are two different illumination levels for switch yard lighting systems. NESC Section 11, Table 111-1 recommends a two foot-candle illumination level in stations for general service lighting. The IES Lighting Handbook, Figure 2-1, recommends a 0.5 foot-candle horizontal illumination level for general security lighting. Security lighting is intended to illuminate the areas inside the switching station yard that might attract vandalism or theft. Service lighting is intended to provide additional lighting for unscheduled callouts to the switching station.

2. For electric power transmission lines, the production of electric and magnetic fields during the operation of the proposed electric power transmission line.

(a) Calculated Electric and Magnetic Field Levels
Nottingham Switch is an associated facility to the proposed Nottingham-Freebyrd 138 kV line, which will be submitted to OPSB as a Letter of Notification under separate cover. However, since EMF associated with these lines is expected to exceed minimal, if any, EMF from the switching station, calculations associated with the line are also provided in this Letter of Notification. Calculations represent values at the edges of the 100-foot wide 138 kV interconnections rights-of-way as they cross the switching station fence. Three loading conditions were examined: (1) normal maximum loading, (2) emergency line loading, and (3) winter normal conductor rating. Normal maximum loading represents the peak flow expected with all system facilities in service; daily/hourly flows fluctuate below this level. Emergency loading is the maximum current flow during unusual (contingency) conditions, which exist only for short periods of time. Winter normal (WN) conductor rating represents the maximum current flow that a line, including its terminal equipment, can carry during winter conditions. It is not anticipated that this line would operate at its WN rating in the foreseeable future. Loading levels and the calculated electric and magnetic fields are summarized below. The corresponding designs, including phase configurations, are shown
in Figure 5. Typical cross section profiles at normal maximum loading, emergency loading, and winter normal rating conditions are shown in Figures 6, 7, and 8, respectively.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Circuit 1/ Circuit 2 Load (MVA)</th>
<th>Electric Field (kV/m)</th>
<th>Magnetic Field (mG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Normal Maximum Loading</td>
<td>36.5 / 36.5</td>
<td>0.21 / 2.25 / 0.21</td>
<td>11.65 / 24.24 / 11.65</td>
</tr>
<tr>
<td>(2) Emergency Line Loading</td>
<td>73.5 / 73.5</td>
<td>0.21 / 2.25 / 0.21</td>
<td>23.47 / 48.81 / 23.47</td>
</tr>
<tr>
<td>(3) Winter Normal Conductor Rating</td>
<td>817 / 817</td>
<td>0.19 / 2.44 / 0.19</td>
<td>135.43 / 291.96 / 135.43</td>
</tr>
</tbody>
</table>

*EMF levels (left right-of-way edge/maximum/right right-of-way edge) calculated one meter above ground assuming balanced currents and nominal voltages. Electric fields reflect normal and emergency operations; lower electric fields are expected during emergency conditions when one mutually-coupled line is out of service.

(b) Discussion of the Company’s Design Alternatives Regarding EMF Levels

Line and switching station construction associated with the Project is proposed in locations that would not place them in close proximity to existing residential areas and, therefore, will not significantly increase EMF exposure of the public.

3. The estimated cost of the project by Federal Energy Regulatory Commission account, unless the applicant is not an electric light company, a gas company or a natural gas company as defined in Chapter 4905. of the Revised Code (in which case, the applicant shall file the capital costs classified in the accounting format ordinarily used by the applicant in its normal course of business).

The 2015 capital cost estimates for the proposed project have been tabulated by the Federal Energy Regulatory Commission (FERC) Electric Plant Transmission Accounts:
## ESTIMATES OF APPLICABLE INTANGIBLE AND CAPITAL COSTS

<table>
<thead>
<tr>
<th>FERC Account Number</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>350</td>
<td>Land and Land Rights</td>
<td>$2,000,000</td>
</tr>
<tr>
<td>352</td>
<td>Structures &amp; Improvement</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>353</td>
<td>Substation Equipment</td>
<td>$22,105,166</td>
</tr>
<tr>
<td>354</td>
<td>Towers &amp; Fixtures</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>355</td>
<td>Poles &amp; Fixtures</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>356</td>
<td>Overhead Conductors &amp; Devices</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>357</td>
<td>Underground Conductors &amp; Devices</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>358</td>
<td>Underground-to-overhead Conversion Equipment</td>
<td>Not Applicable</td>
</tr>
<tr>
<td>359</td>
<td>Right-of-way Clearing, Roads, Trails or Other Access</td>
<td>$264,000</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>$24,369,166</td>
</tr>
</tbody>
</table>

(D) SOCIOECONOMIC DATA

1. A brief description of land use within the vicinity of the proposed project, including: (a) a list of municipalities, townships and counties affected; and (b) estimates of population density adjacent to rights of way within the study corridor (the U.S. census information may be used to meet this requirement.)

   On behalf of AEP Ohio Transco, URS prepared a Socioeconomic, Land Use, and Agricultural District Review Report. This report is included as Appendix A.

2. The location and general description of all agricultural land (including agricultural district land) existing at least sixty days prior to submission of the letter of notification within the proposed electric power transmission line right-of-way, or within the proposed electric power transmission substation fenced-in area, or within the construction site boundary of a proposed compressor station.

   No agricultural land will be impacted by the construction of the Project, as detailed in Appendix A.

3. A description of the applicant’s investigation (concerning the presence or absence of significant archaeological or cultural resources that may be located within the area likely to be disturbed by the project), a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

   As shown on Figure 1, the project area has been mined and subsequently reclaimed. An archaeological investigation by Weller & Associates, Inc. to confirm site disturbance on the
reclaimed mining land will be completed for this project. A copy of this report will be provided to the Ohio Power Siting Board under separate cover.

4. Documentation that the chief executive officer of each municipal corporation and county, and the head of each public agency charged with planning land use in the area in which any portion of the facility is to be located have been notified of the project and have been provided with a copy of the letter of notification. The applicant shall describe the company’s public information program used in the siting of the proposed facility. The information submitted shall include either a copy of the material distributed to the public or a copy of the agenda and summary of the meeting(s) held by the applicant.

AEP Ohio Transco notified Mr. Don Bethel, Mr. William Host, and Mr. Dale Norris, Harrison County Board of Commissioners; Mr. Robert Sterling, Harrison County Engineer; Mr. Kenneth A. Zitko, Mayor Village of Cadiz; Mr. William L. Sedgmer, Mayor Village of New Athens; Ms. Elizabeth A. Deaton, Athens Township Trustee; Mr. David E. Butler, Athens Township Trustee; and Mr. Michael T. Saffell, Athens Township Trustee in November 2014. Copies of this Letter of Notification have been sent to the Harrison County Commissioners, Harrison County Engineer, Athens Township Trustees, the Mayor of Cadiz, the Mayor of New Athens and the Puskarich Public Library. Copies of the cover letters to these officials and the local library are attached in Appendix B. AEP Ohio Transco will advise local officials of features and the status of the proposed Project.

5. A brief description of any current or pending litigation involving the project known to the applicant at the time of the letter of notification.

There is no known current or pending litigation involving this Project.

6. A listing of local, state, and federal governmental agencies known to have requirements which must be met in connection with the construction of the project, and 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 stormwater discharges under General Permit OHC000003. There are no other known local, state, or federal requirements that must be met prior to commencement of the proposed Project.
(E) ENVIRONMENTAL DATA

1. A description of the applicant’s investigation concerning the presence or absence of federal or state endangered 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 area likely to be disturbed by the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

   On behalf of AEP Ohio Transco, URS prepared a Threatened and Endangered Species Report. URS coordinated with the USFWS and ODNR regarding special status species in the vicinity of the Project. No impacts to threatened or endangered species are expected. The full Threatened and Endangered Species Report for the Project is included as Appendix C.

2. 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 areas likely to be disturbed by the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

   On behalf of AEP Ohio Transco, URS prepared an Areas of Ecological Concern, Wetland Delineation, and Stream Assessment Report. No impacts to wetlands or streams are anticipated. The full Areas of Ecological Concern, Wetland Delineation, and Stream Assessment Report for the Project is included as Appendix D.

3. 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 environmental, social, health, or safety impacts. Construction and operation of the proposed Project will meet all applicable safety standards established by the Occupational Safety and Health Administration, and will be in accordance with the requirements specified in the latest revision of the National Electrical Safety Code as adopted by the Public Utilities Commission of Ohio. The Stormwater Pollution Prevention Plan (SWPPP), which will
include the Access Plan, will be provided to the OPSB under separate cover, after submission of this Letter of Notification.
FIGURE 1
PROJECT OVERVIEW

LEGEND:
- Nottingham Switch Property Boundary
- Nottingham Switch Fence
- Access Road

Nottingham Switch
Harrison Co.

JOB NO.14951489
(6) 1,233 kcm ACSR TW TYPE13

1-7NUM10 ALUMOWELD
1-96 FIBRE OPGW

DIMENSION A: DOUBLE CIRCUIT (STEEL TOWER)
(UNDER NORMAL MAX & EMERGENCY LINE LOADING)

DIMENSION B: DOUBLE CIRCUIT (STEEL TOWER).
(UNDER WINTER NORMAL CONDUCTOR RATING AT 120 F)
FIGURE 6
EMF PROFILE
NORMAL MAXIMUM LOADING
Nottingham Switch
FIGURE 7
EMF PROFILE
EMERGENCY LINE LOADING

Nottingham Switch
Nottingham Station
Data-Tech
GIS
EMF profile

FIGURE 8
EMF PROFILE
WINTER NORMAL RATING

Nottingham Switch

JOB NO.14951489
APPENDIX A

SOCIOECONOMIC, LAND USE, AND AGRICULTURAL DISTRICT REVIEW REPORT
NOTTINGHAM SWITCH PROJECT

SOCIOECONOMIC, LAND USE, AND AGRICULTURAL DISTRICT REVIEW REPORT

Prepared for:
American Electric Power Ohio Transmission Company
700 Morrison Road
Gahanna, Ohio 45230

Prepared by:
URS
525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 14951489

November 2014
# TABLE OF CONTENTS

1.0 PROJECT DESCRIPTION .......................................................................................................... 1
2.0 GENERAL LAND USE DESCRIPTION ....................................................................................... 1
3.0 POPULATION DENSITY ESTIMATE .......................................................................................... 2
4.0 AGRICULTURAL DISTRICT LAND ............................................................................................. 2
5.0 CONCLUSION ............................................................................................................................ 2

## FIGURES
(follow text)

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIGURE 1</td>
<td>LAND USE MAP</td>
</tr>
</tbody>
</table>
1.0 PROJECT DESCRIPTION

This document presents the socioeconomic, land use, and agricultural district review conducted by URS Corporation (URS) for American Electric Power Ohio Transco’s (AEP Ohio Transco) proposed Nottingham Switch Project (Project). The Project is required to meet the needs of a specific customer. In response to the customer’s needs, AEP Ohio Transco is proposing to install a new 138 kV switching station to be called Nottingham Switch on a property owned by Consolidated Coal Company adjacent to four FirstEnergy 138 kV lines in Harrison County, Ohio.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to assess and report the socioeconomic, land use, and agricultural district characteristics potentially affected by the Project, as stated in Ohio Administrative Code (OAC) Rule 4906-11-01(D)(1) and (2). These rules state:

(D) Socioeconomic data. Describe the social and ecological impacts of the project. This description shall contain the following information:

1. A brief, general description of land use within the vicinity of the proposed project, including: (a) a list of municipalities, townships, and counties affected; and (b) estimates of population density adjacent to rights-of-way within the study corridor (the U.S. census information may be used to meet this requirement).

2. The location and general description of all agricultural land (including agricultural district land) existing at least sixty days prior to submission of the letter of notification within the proposed electric power transmission line right-of-way, or within the proposed electric power transmission substation fenced-in area, or within the construction site boundary of a proposed compressor station.

AEP Ohio Transco retained URS to conduct a desktop review of socioeconomic, land use, and agricultural district land characteristics. A study area was established that extends 1,000 feet around the approximately 10.9-acre Nottingham Switch fence line. This resulted in an approximately 160-acre study area. In conjunction with ecological field surveys for the Project, URS noted land uses within this study area. This report will be used to assist AEP Ohio Transco’s efforts to avoid or minimize impacts to socioeconomic characteristics and land uses potentially present in the study area during construction activities.

2.0 GENERAL LAND USE DESCRIPTION

Land use within the study area is shown on Figure 1. Current land use characteristics were obtained through review of United States Farm Service Agency National Agricultural Imagery Program aerial photography taken in 2013; the United States Geological Survey (USGS) 7.5-minute topographic map of the Flushing, Ohio quadrangle (1976, photorevised 1978); a tax map of the Project area; and a field reconnaissance conducted in October 2014.
Land uses within the study area include wooded parcels, grass-covered previously strip-mined land, and utility corridors. The southern portion of the study property was observed to be forested and crossed by an electric transmission line right-of-way during the site reconnaissance. The remainder of the site was observed to be grass-covered previously-strip mined land, currently used for cattle grazing. Undeveloped, grass-covered areas of reclaimed strip mine properties make up approximately 85 percent of the study area. Forested land makes up approximately 15 percent of the study area. No residential or institutional land uses were identified within 1,000 feet of the proposed Project property.

Based on a review of the Harrison County website, no comprehensive plans or other future land use documents were identified for the county or Athens Township. Athens Township has not adopted zoning regulations.

3.0 POPULATION DENSITY ESTIMATE

The Project is located entirely within Athens Township of Harrison County. No homes were identified within 1,000 feet of the Project. No planned residential developments within the study area were identified as part of this study.

4.0 AGRICULTURAL DISTRICT LAND

URS contacted the Harrison County Assessor’s office on November 3, 2014 regarding parcels registered in the agricultural district land program. There are reportedly no agricultural district land parcels in Athens Township.

5.0 CONCLUSION

The Project is not expected to significantly impact current socioeconomic characteristics, land use, or agricultural district land in the vicinity. The Project is not expected to impact any future land use plans for the area.
APPENDIX B

PUBLIC OFFICIALS LETTERS SERVED A COPY OF THE LETTER OF NOTIFICATION
November 14, 2014

Athens Township Trustee
Mr. David E. Butler
117 East Wheeling Street
New Athens, Ohio 43981

RE: Letter of Notification
Nottingham Substation Project
Case Number: 14-1818-EL-BLN

Dear Mr. Butler:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSB) whenever certain additions are made to our transmission facilities.

The proposed Nottingham Substation Project, Public Utilities Commission of Ohio Case Number 14-1818-EL-BLN, consists of the construction of a new 138-kilovolt (kV) transmission substation on property owned by AEP Ohio Transco in Athens Township of Harrison County. The substation will be built near existing transmission lines. The purpose of this Project is to provide additional electricity to Markwest’s Utica Plant. The proposed Nottingham Substation will be approximately 11-acres. This Project will be an approximate $25 million investment by AEP Ohio Transco. Construction is scheduled to begin in February 2015.

In compliance with Rule 4906-11-01 of the OPSB Rules and Regulations, we have prepared and filed the attached Letter of Notification. This Notice contains details on the line location, project description and construction schedule, and is submitted for your information.

Please feel free to contact me at 614-552-1929 and I would be happy to answer any questions concerning this project.

Sincerely,

[Signature]

Brett E. Schmied
Project Outreach Specialist
American Electric Power

cc: Greg Gibbs, Project Manager
November 14, 2014

Athens Township Trustee
Ms. Elizabeth Ann Deaton
177 Main Street North
New Athens, Ohio 43981

RE: Letter of Notification
Nottingham Substation Project
Case Number: 14-1818-EL-BLN

Dear Ms. Deaton:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSB) whenever certain additions are made to our transmission facilities.

The proposed Nottingham Substation Project, Public Utilities Commission of Ohio Case Number 14-1818-EL-BLN, consists of the construction of a new 138-kilovolt (KV) transmission substation on property owned by AEP Ohio Transco in Athens Township of Harrison County. The substation will be built near existing transmission lines. The purpose of this Project is to provide additional electricity to Markwest’s Utica Plant. The proposed Nottingham Substation will be approximately 11-acres. This Project will be an approximate $25 million investment by AEP Ohio Transco. Construction is scheduled to begin in February 2015.

In compliance with Rule 4906-11-01 of the OPSB Rules and Regulations, we have prepared and filed the attached Letter of Notification. This Notice contains details on the line location, project description and construction schedule, and is submitted for your information.

Please feel free to contact me at 614-552-1929 and I would be happy to answer any questions concerning this project.

Sincerely,

[Signature]

Brett E. Schmied
Project Outreach Specialist
American Electric Power

cc: Greg Gibbs, Project Manager
November 14, 2014

Harrison County Board of Commissioners
Mr. William H. Host, President
Mr. Dale Ray Norris, Commissioner
Mr. Don Rae Bethel, Commissioner
101 Market Street
Cadiz, Ohio 43907

RE: Letter of Notification
Nottingham Substation Project
Case Number: 14-1818-EL-BLN

Dear Commissioners:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSB) whenever certain additions are made to our transmission facilities.

The proposed Nottingham Substation Project, Public Utilities Commission of Ohio Case Number 14-1818-EL-BLN, consists of the construction of a new 138-kilovolt (kV) transmission substation on property owned by AEP Ohio Transco in Athens Township of Harrison County. The substation will be built near existing transmission lines. The purpose of this Project is to provide additional electricity to Markwest’s Utica Plant. The proposed Nottingham Substation will be approximately 11-acres. This Project will be an approximate $25 million investment by AEP Ohio Transco. Construction is scheduled to begin in February 2015.

In compliance with Rule 4906-11-01 of the OPSB Rules and Regulations, we have prepared and filed the attached Letter of Notification. This Notice contains details on the line location, project description and construction schedule, and is submitted for your information.

Please feel free to contact me at 614-552-1929 and I would be happy to answer any questions concerning this project.

Sincerely,

Brett E. Schmied
Project Outreach Specialist
American Electric Power

cc: Greg Gibbs, Project Manager
November 14, 2014

Athens Township Trustee
Mr. Michael T. Saffell
103 South Main Street, Box 4
New Athens, Ohio 43981

RE: Letter of Notification
    Nottingham Substation Project
    Case Number: 14-1818-EL-BLN

Dear Mr. Saffell:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSB) whenever certain additions are made to our transmission facilities.

The proposed Nottingham Substation Project, Public Utilities Commission of Ohio Case Number 14-1818-EL-BLN, consists of the construction of a new 138-kilovolt (kV) transmission substation on property owned by AEP Ohio Transco in Athens Township of Harrison County. The substation will be built near existing transmission lines. The purpose of this Project is to provide additional electricity to Markwest’s Utica Plant. The proposed Nottingham Substation will be approximately 11-acres. This Project will be an approximate $25 million investment by AEP Ohio Transco. Construction is scheduled to begin in February 2015.

In compliance with Rule 4906-11-01 of the OPSB Rules and Regulations, we have prepared and filed the attached Letter of Notification. This Notice contains details on the line location, project description and construction schedule, and is submitted for your information.

Please feel free to contact me at 614-552-1929 and I would be happy to answer any questions concerning this project.

Sincerely,

[Signature]

Brett E. Schmied
Project Outreach Specialist
American Electric Power

cc: Greg Gibbs, Project Manager
November 14, 2014

Mayor William L. Sedgmer, Ill
Village of New Athens
130 East Brown Street
New Athens, Ohio 43981

RE: Letter of Notification
Nottingham Substation Project
Case Number: 14-1818-EL-BLN

Dear Mayor Sedgmer:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSB) whenever certain additions are made to our transmission facilities.

The proposed Nottingham Substation Project, Public Utilities Commission of Ohio Case Number 14-1818-EL-BLN, consists of the construction of a new 138-kilovolt (KV) transmission substation on property owned by AEP Ohio Transco in Athens Township of Harrison County. The substation will be built near existing transmission lines. The purpose of this Project is to provide additional electricity to Markwest’s Utica Plant. The proposed Nottingham Substation will be approximately 11-acres. This Project will be an approximate $25 million investment by AEP Ohio Transco. Construction is scheduled to begin in February, 2015.

In compliance with Rule 4906-11-01 of the OPSB Rules and Regulations, we have prepared and filed the attached Letter of Notification. This Notice contains details on the line location, project description and construction schedule, and is submitted for your information.

Please feel free to contact me at 614-552-1929 and I would be happy to answer any questions concerning this project.

Sincerely,

[Signature]

Brett E. Schmied
Project Outreach Specialist
American Electric Power

cc: Greg Gibbs, Project Manager
November 14, 2014

Harrison County Engineer
Mr. Robert K. Sterling
32500 Cadiz-Dennison Road
Scio, Ohio 43988

RE: Letter of Notification
Nottingham Substation Project
Case Number: 14-1818-EL-BLN

Dear Mr. Sterling:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSB) whenever certain additions are made to our transmission facilities.

The proposed Nottingham Substation Project, Public Utilities Commission of Ohio Case Number 14-1818-EL-BLN, consists of the construction of a new 138-kilovolt (kV) transmission substation on property owned by AEP Ohio Transco in Athens Township of Harrison County. The substation will be built near existing transmission lines. The purpose of this Project is to provide additional electricity to Markwest’s Utica Plant. The proposed Nottingham Substation will be approximately 11-acres. This Project will be an approximate $25 million investment by AEP Ohio Transco. Construction is scheduled to begin in February 2015.

In compliance with Rule 4906-11-01 of the OPSB Rules and Regulations, we have prepared and filed the attached Letter of Notification. This Notice contains details on the line location, project description and construction schedule, and is submitted for your information.

Please feel free to contact me at 614-552-1929 and I would be happy to answer any questions concerning this project.

Sincerely,

[Signature]

Brett E. Schmied
Project Outreach Specialist
American Electric Power

cc: Greg Gibbs, Project Manager
November 14, 2014

Puskarich Public Library
Ms. Sandi Thompson, Director
200 East Market Street
Cadiz, Ohio 43907

RE: Letter of Notification
Nottingham Substation Project
Case Number: 14-1818-EL-BLN

Dear Ms. Thompson:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSAB) whenever certain additions are made to our transmission facilities.

The proposed Nottingham Substation Project, Public Utilities Commission of Ohio Case Number 14-1818-EL-BLN, consists of the construction of a new 138-kilovolt (kV) transmission substation on property owned by AEP Ohio Transco in Athens Township of Harrison County. The substation will be built near existing transmission lines. The purpose of this Project is to provide additional electricity to Markwest’s Utica Plant. The proposed Nottingham Substation will be approximately 11-acres. This Project will be an approximate $25 million investment by AEP Ohio Transco. Construction is scheduled to begin in February 2015.

In compliance with Rule 4906-11-01 of the OPSB Rules and Regulations, we have prepared and filed the attached Letter of Notification. This Notice contains details on the line location, project description and construction schedule, and is submitted for your information.

We ask that this Letter of Notification be made available to the general public.

Please feel free to contact me at 614-552-1929 and I would be happy to answer any questions concerning this project.

Sincerely,

Brett E. Schmied
Project Outreach Specialist
American Electric Power

cc: Greg Gibbs, Project Manager
November 14, 2014

Athens Township Fiscal Officer
Mr. David A. Watson
74070 Flushing New Athens Road
New Athens, Ohio 43981

RE: Letter of Notification
Nottingham Substation Project
Case Number: 14-1818-EL-BLN

Dear Mr. Watson:

In accordance with Rules 4906 of the Ohio Administrative Code (OAC), AEP Ohio Transmission Company (AEP Ohio Transco) is required to submit a Letter of Notification to the State of Ohio Power Siting Board (OPSBI whenever certain additions are made to our transmission facilities.

The proposed Nottingham Substation Project, Public Utilities Commission of Ohio Case Number 14-1818-EL-BLN, consists of the construction of a new 138-kilovolt (kV) transmission substation on property owned by AEP Ohio Transco in Athens Township of Harrison County. The substation will be built near existing transmission lines. The purpose of this Project is to provide additional electricity to Markwest’s Utica Plant. The proposed Nottingham Substation will be approximately 11-acres. This Project will be an approximate $25 million investment by AEP Ohio Transco. Construction is scheduled to begin in February 2015.

In compliance with Rule 4906-11-01 of the OPSB Rules and Regulations, we have prepared and filed the attached Letter of Notification. This Notice contains details on the line location, project description and construction schedule, and is submitted for your information.

Please feel free to contact me at 614-552-1929 and I would be happy to answer any questions concerning this project.

Sincerely,

Brett E. Schmied
Project Outreach Specialist
American Electric Power

cc: Greg Gibbs, Project Manager
APPENDIX C

THREATENED AND ENDANGERED SPECIES SURVEY REPORT
NOTTINGHAM SWITCH PROJECT

THREATENED AND ENDANGERED SPECIES SURVEY REPORT

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

Prepared by:
URS
525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 14951489

November 2014
TABLE OF CONTENTS

1.0 PROJECT DESCRIPTION ........................................................................................................ 1
2.0 METHODS .......................................................................................................................... 1
3.0 RESULTS ............................................................................................................................ 1
  3.1 State Species of Concern ............................................................................................... 2
  3.2 Federal Species of Concern ............................................................................................ 3
4.0 SUMMARY .......................................................................................................................... 4
5.0 CONCLUSION ...................................................................................................................... 4

TABLES

Number |
--------|
   1   |
   2   |

TABLE 1   STATE LISTED SPECIES THAT COULD INHABIT HARRISON COUNTY, OHIO ........ 2
TABLE 2   FEDERALLY LISTED SPECIES THAT COULD INHABIT HARRISON COUNTY, OHIO .... 3

ATTACHMENT

Number |
--------|
   A   |

ATTACHMENT A   AGENCY RESPONSES
1.0 PROJECT DESCRIPTION

This document presents the results of the threatened and endangered species assessment conducted by URS Corporation (URS) for American Electric Power Ohio Transco’s (AEP Ohio Transco) proposed Nottingham Switch Project (Project). The Project is required to meet the needs of a specific customer. In response to the customer’s needs, AEP Ohio Transco is proposing to install a new 138 kV switching station to be called Nottingham Switch on a property owned by Consolidated Coal Company adjacent to four FirstEnergy 138 kV lines in Harrison County, Ohio.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to assess and report the socioeconomic, land use, and agricultural district characteristics potentially affected by the Project, as stated in Ohio Administrative Code (OAC) Rule 4906-11-01(D)(1) and (2). This rule states:

(E) Environmental data. Describe the environmental impacts of the proposed project. This description shall include the following information:

(1) 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 area likely to be disturbed by the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

AEP retained URS to conduct threatened and endangered species review and field survey within areas crossed by the proposed Project. This report will be used to assist AEP Ohio Transco’s efforts to avoid impacts to threatened and endangered species potentially present in the study area during construction activities.

2.0 METHODS

The first phase of the survey involved a review of online lists of federal and state species of concern. This information was used during the field survey to assess the potential for these species of concern to occur in, or near the Project study area. In addition to the review of available literature, URS submitted a request to Ohio Department of Natural Resources (ODNR) Biodiversity Database for GIS records of species of concern that were reported within close proximity to the Project. A copy of the letter provided with the Biodiversity Database GIS records is included in Attachment A. URS also submitted a coordination letter to the U.S. Fish and Wildlife Service (USFWS) and ODNR soliciting comments on the Project.

3.0 RESULTS

URS field ecologists conducted a designated species habitat survey in conjunction with the stream and wetland field surveys on October 27, 2014. URS observed the preliminary switch pad site and overall
property as former strip-mined land that is currently covered in grass. No tree clearing is expected to be necessary for the Project.

3.1 State Species of Concern

ODNR provided Biodiversity Database GIS records and a corresponding letter response dated September 12, 2014. The data included the Project area plus an approximate one mile buffer. No records of special status species or habitats were identified within the search area. A copy of the ODNR response is included in Attachment A. URS also contacted the ODNR with a request for comments on the project. To date, a response has not been received. Based upon the current use of the property as open reclaimed mining land, it is unlikely that any other concerns pertaining to rare or endangered species will be identified by the ODNR at the Project site.

Table 1 lists the eight species identified by the ODNR on the county-wide list for Harrison County (not-project specific), that could potentially inhabit Harrison County.

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>State Status</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Animals</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sharp-Shinned Hawk</td>
<td>Accipiter striatus</td>
<td>Species of Concern</td>
</tr>
<tr>
<td>Henslow’s Sparrow</td>
<td>Ammodramus henslowii</td>
<td>Species of Concern</td>
</tr>
<tr>
<td>Bobolink</td>
<td>Dolichonyx oryzivorus</td>
<td>Species of Concern</td>
</tr>
<tr>
<td>Bobcat</td>
<td>Lynx rufus</td>
<td>Threatened</td>
</tr>
<tr>
<td>Sora Rail</td>
<td>Porzana Carolina</td>
<td>Species of Concern</td>
</tr>
<tr>
<td><strong>Plants</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philadelphia Panic Grass</td>
<td>Panicum philadelphicum</td>
<td>Endangered</td>
</tr>
<tr>
<td>Narrow-leaved Blue-eyed-grass</td>
<td>Sisyrinchium mucronatum</td>
<td>Threatened</td>
</tr>
<tr>
<td>Drummond’s Aster</td>
<td>Symphyotrichum drummondi</td>
<td>Threatened</td>
</tr>
</tbody>
</table>

* Ohio Division of Wildlife Natural Heritage Database State-listed Species for Harrison County, as of 11/8/2012

No state species of concern or signs of these species, and no unique habitats were observed during the field survey. No state species of concern are expected to be impacted by the proposed Project.
3.2 Federal Species of Concern

To address the Project's potential to impact federally protected species, URS conducted a web based literature review of USFWS Ohio County Distribution of Federally Listed Threatened, Endangered, Proposed, and Candidate Species, Revised January 2014, to identify what species potentially occur in Harrison County, Ohio. Table 2 lists the two species identified during the USFWS literature review. URS also contacted the USFWS with a request for comments on the project. To date, a response has not been received. Based upon the current use of the property as open reclaimed mining land, it is unlikely that any other concerns pertaining to rare or endangered species will be identified by the USFWS at the Project site.

### TABLE 2
FEDERALLY LISTED SPECIES THAT COULD INHABIT HARRISON COUNTY, OHIO*

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Federal Status</th>
<th>County</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mammals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indiana bat</td>
<td>Myotis sodalis</td>
<td>Endangered</td>
<td>Harrison</td>
</tr>
<tr>
<td>Northern long-eared bat</td>
<td>Myotis septentrionalis</td>
<td>Proposed Endangered</td>
<td>Harrison</td>
</tr>
</tbody>
</table>


**Indiana Bat**: The federal government lists this species as endangered in Ohio. Winter Indiana bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. The 8- to 10-inch diameter size classes of several species of hickory (*Carya* spp.), oak (*Quercus* spp.), ash (*Fraxinus* spp.), birch (*Betula* spp.), and elm (*Ulmus* spp.) have been found to be utilized by the Indiana bat. These tree species and many others may be used when dead, if there are adequately sized patches of loosely-adhering bark or open cavities. The structural configuration of forest stands favored for roosting includes a mixture of loose-barked trees with 60 to 80 percent canopy closure and a low density sub-canopy (less than 30 percent between about 6 feet high and the base canopy). The suitability of roosting habitat for foraging or the proximity to suitable foraging habitat is critical to the evaluation of a particular tree stand. An open subcanopy zone, under a moderately dense canopy, is important to allow maneuvering while catching insect prey. Proximity to water is critical, because insect prey density is greater over or near open water. URS observed the preliminary switch pad site and overall property as former strip-mined land that is currently covered in grass. No tree clearing is expected to be necessary for the Project. The absence of streams on the Project property also suggests limited potential for this species to be on the Project property.

**Northern Long-Eared Bat**: The federal government lists this species as proposed endangered in Ohio. As with the Indiana bat, winter northern long-eared bat hibernacula include caves and mines, while summer habitat typically includes tree species exhibiting exfoliating bark or cavities that can be used for roosting. Northern long-eared bat has also been found, albeit rarely, roosting in structures like barns and
sheds. Similar to the Indiana bat, characteristics on the Project property suggest it is not likely to inhabit the property.

Although a reply has not been received from USFWS to date, USFWS typically recommends that trees exhibiting characteristics suitable as habitat for the Indiana and northern long-eared bats, as well as any surrounding wooded areas, should be saved. However, if these areas cannot be avoided, USFWS usually recommends that they should only be cut from October 1 through March 31. If implementation of the seasonal tree cutting restriction is not possible, summer surveys must usually be conducted by an approved surveyor in coordination with USFWS to document the presence or likely absence of the species. Due to the project type, size, and location, it is unlikely that USFWS will have concerns pertaining to adverse effects to any other federally listed species.

4.0 SUMMARY

AEP retained URS to conduct threatened and endangered species review for areas located within 1,000 feet of the proposed Project and a field survey within the proposed Project location. This report will be used to assist AEP’s efforts to avoid impacts to threatened and endangered species potentially present in the study area during construction activities. The field survey was conducted by URS field biologists on October 27, 2014. No species of concern or signs of these species, and no unique habitats were observed. No species of concern are expected to be impacted by the proposed Project.

Although responses have not yet been received from the ODNR and USFWS, due to the project type, size, and location, agency comments on potential adverse effects to federally listed species are expected to be minimal. It is expected that these agencies will recommend seasonal tree cutting restrictions for trees exhibiting characteristics suitable as habitat for the Indiana and northern long-eared bats. However, no tree clearing is expected to be necessary for the Project.

5.0 CONCLUSION

At this time, URS understands that no tree clearing or in-water work is necessary for the Project as proposed on the reclaimed mining land. Based upon the nature of the Project, review of available current literature, review of federal and state records of species of concern and the field survey conducted on October 27, 2014, it is not anticipated that federal or state species of concern will be impacted by the Project as currently planned.
September 12, 2014

Aaron Geckle
URS
525 Vine Street, Suite 1800
Cincinnati, OH 45202

Dear Mr. Geckle

I have reviewed the Natural Heritage Database for the Nottingham-Freebyrd Project in Jefferson County based on the provided shape file. We have no records for rare species and managed areas in your project area. We do have records for managed areas. I have attached a shape file for managed areas that include state wildlife areas, nature preserves, parks and forests, national wildlife refuges, county metro parks, as well as sites owned by non-profit groups. Please be aware that the managed areas layer may not be complete.

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

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 614-265-6452 if I can be of further assistance.

Sincerely,

Greg Schneider, Administrator
Ohio Natural Heritage Program
APPENDIX D

AREAS OF ECOLOGICAL CONCERN, WETLAND DELIINATION, AND STREAM ASSESSMENT REPORT
NOTTINGHAM SWITCH PROJECT
AREAS OF ECOLOGICAL CONCERN, WETLAND DELINEATION, AND STREAM ASSESSMENT REPORT

Prepared for:
American Electric Power Ohio Transmission Company
700 Morrison Road
Gahanna, Ohio 45230

Prepared by:
URS
525 Vine Street, Suite 1800
Cincinnati, Ohio 45202

Project #: 14951489

November 2014
# Areas of Ecological Concern Report

## Table of Contents

1.0 PROJECT DESCRIPTION ................................................................. 1
2.0 METHODS .................................................................................. 1
   2.1 Special Status Ecological Areas .............................................. 1
   2.2 Wetland Assessment ............................................................ 2
   2.3 Stream and River Crossings .................................................. 3
3.0 RESULTS .................................................................................. 3
   3.1 Special Status Ecological Areas .............................................. 3
   3.2 Wetland Assessment ............................................................ 4
   3.3 Stream and River Crossings .................................................. 5
4.0 PONDS .................................................................................... 5
5.0 SUMMARY ............................................................................. 5
6.0 CONCLUSION ........................................................................ 5
7.0 REFERENCES ......................................................................... 6

## Tables

| Number | TABLE 1 | WETLANDS IDENTIFIED WITHIN THE SURVEY AREA | 4 |

## Figures

(follow text)

| Number | FIGURE 1 | ECOLOGICAL SURVEY RESULTS |

## Attachments

(follow figure)

| Number | ATTACHMENT A | PHOTOGRAPHS |
|        | ATTACHMENT B | WETLAND FORMS |
1.0 PROJECT DESCRIPTION

This document presents the results of the wetland delineation and stream assessment conducted by URS Corporation (URS) for American Electric Power Ohio Transco’s (AEP Ohio Transco) proposed Nottingham Switch Project (Project). The Project is required to meet the needs of a specific customer. In response to the customer’s needs, AEP Ohio Transco is proposing to install a new 138 kV switching station to be called Nottingham Switch on a property owned by Consolidated Coal Company adjacent to four existing FirstEnergy 138 kV transmission lines in Harrison County, Ohio.

As part of the Ohio Power Siting Board (OPSB) Letter of Notification (LON) requirements, AEP Ohio Transco is required to describe the investigation concerning the presence or absence of areas of ecological concern as stated in Ohio Administrative Code (OAC) Rule 4906-15-11-01(E)(2). This rule states:

(E) Environmental data. Describe the environmental impacts of the proposed project. This description shall include the following information:

(2) 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 areas likely to be disturbed by the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.

AEP Ohio Transco retained URS to review areas of ecological concern, as defined above, within the proposed Project vicinity and conduct a field survey of wetlands and streams within the limits of the proposed switching station. The ecological study area extended well beyond the proposed construction limits of the preliminary switching station pad. This report will be used to assist AEP Ohio Transco’s efforts to avoid impacts to areas of ecological concern present in the study area during construction.

2.0 METHODS

2.1 Special Status Ecological Areas

URS reviewed maps and GIS data in order to identify national and state forests and parks, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries in the Project vicinity. GIS data sources included the ODNR Biodiversity Database and federal land and parks layers available from Environmental Systems Research Institute (ESRI). Property ownership within 1,000 feet of the Project was reviewed to identify parcels that may have special status. URS also noted land use during the field reconnaissance conducted on October 27, 2014.

Floodplains were evaluated based on the Federal Emergency Management Agency’s (FEMA) Flood Map Viewer (https://hazards.fema.gov/wps/portal/mapviewer).
2.2 Wetland Assessment

National Wetland Inventory (NWI) wetlands are areas of potential wetland that have been identified from U.S. Fish and Wildlife Service (USFWS) aerial photo-interpretation and which have typically not been field verified. Forested and heavy scrub/shrub wetlands are often difficult to interpret on NWI maps without a site visit, as foliage effectively hides the visual signature that indicates the presence of standing water and moist soils from an aerial view. In addition, many NWI-mapped wetlands are not found during field surveys. As a result, NWI maps may not show all the wetlands found in a particular area nor do they necessarily provide accurate wetland boundaries. NWI maps are useful for providing indications of potential wetland areas, which are often supported by soil mapping and hydrologic predictions, based upon topographical analysis using USGS topographic maps.

The Project area was reviewed for the presence of wetlands using the procedures outlined in the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (1987 Manual) (Environmental Laboratory, 1987) in conjunction with the procedures outlined in the 2012 USACE Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Regional Supplement).

The Regional Supplement was released in January 2012 by the USACE to address regional wetland characteristics and improve the accuracy and efficiency of wetland delineation procedures. The 1987 Manual and Regional Supplement define wetlands as areas that have positive evidence of three environmental parameters: hydric soils, wetland hydrology, and hydrophytic vegetation. Wetland boundaries are placed where one or more of these parameters give way to upland characteristics.

URS utilized the routine delineation method described in the 1987 Manual and Regional Supplement that consisted of a pedestrian site reconnaissance, including identifying the vegetation communities, soils identification, a geomorphologic assessment of hydrology, and notation of observed disturbance.

URS biologists identified wetlands through a pedestrian reconnaissance of the site, including identifying the vegetation communities, soils identification where necessary, conducting a geomorphologic assessment of hydrology, and notation of disturbance. Identified wetland boundaries were noted where one or more of these criteria gave way to upland characteristics. The wetland boundaries were recorded with a handheld Trimble GeoXH GPS unit.

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

**Wetland Classifications:** For this study, wetlands were classified based on the naming convention found in Classification of Wetlands and Deepwater Habitats of the United States (Cowardin et al, 1979).
The six wetlands identified within the survey area were all classified as freshwater, Palustrine systems, which include nontidal wetlands dominated by trees, shrubs, emergents, mosses, or lichens. The class of these wetlands was identified as Palustrine emergent (PEM). Emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

**Ohio Rapid Assessment Method v. 5.0:** The Ohio Environmental Protection Agency's (Ohio EPA) Ohio Rapid Assessment Method (ORAM) for Wetlands Version 5.0 was developed to determine the relative ecological quality and level of disturbance of a particular wetland in order to meet requirements under Section 401 of the Clean Water Act. Wetlands are scored on the basis of hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. Each of these subject areas is further divided into subcategories resulting in a score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into “Category 1,” 30 to 59.9 are “Category 2,” and 60 to 100 are “Category 3.” Transitional zones exist between “Categories 1 and 2” from 30 to 34.9 and between “Categories 2 and 3” from 60 to 64.9. However, according to the Ohio EPA, if the wetland score falls into the transitional range, it must be given the higher Category unless scientific data can prove it should be in a lower Category (Mack, 2001). The ORAM scores for the wetlands that were delineated are discussed in Section 3.2 of this report.

### 2.3 Stream and River Crossings

Regulatory activities under the Clean Water Act provide authority for states to issue water quality standards and “designated uses” to all “Waters of the U.S.” upstream to the highest reaches of the tributary streams. In addition, the Clean Water Act (CWA) of 1972 and its 1977 and 1987 amendments require knowledge of the potential fish or biological communities that can be supported in a stream or river, including upstream headwaters. Streams were identified by the presence of a defined bed and bank, and evidence of an ordinary high water mark (OHWM).

### 3.0 RESULTS

#### 3.1 Special Status Ecological Areas

URS conducted a review of published resources and agency consultations to identify national or state forests and parks designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, wildlife sanctuaries and floodplains crossed by and in the immediate vicinity of the Project. No national forests or parks designated or proposed wilderness areas, national wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, or wildlife sanctuaries were identified within 1,000 feet of the proposed Project.

According to the Federal Emergency Management Agency (FEMA) National Flood Hazard Layer (NFHL) (GIS shapefile), the Project is not located within any 100-year flood zones. The project is located on Panel 39067C0310D (effective May 4, 2009), and is entirely located within Flood Zone X, an area with minimal flood hazard. No changes in flood elevations are anticipated as a result of the Project.
3.2  Wetland Assessment

**Preliminary Soils Evaluation:** According to the USDA/NRCS Web Soil Survey for Harrison County, Ohio (USDA, 2014), there are six mapped soil map units in the survey area, and include: Aaron silty clay loam, 6 to 15 percent slopes, eroded (AbC2), Gilpin silt loam, 15 to 25 percent slopes (GnD), Lowell silt loam, 8 to 15 percent slopes (LnC), Lowell silty clay loam, 15 to 25 percent slopes, eroded (LoD2), Morristown channery silty clay loam, 8 to 25 percent slopes, stony (MoD), Morristown channery silt loam, 25 to 70 percent slopes, bouldery (MrF). According to the NRCS Hydric Soils List of Ohio, none of the soils are identified as hydric soils, although two of the soil map units reportedly contain a small proportion of soil inclusions that meet the criteria of hydric soils (NRCS, 2014). The two soil map units with hydric inclusions include Morristown channery silty clay loam, 8 to 25 percent slopes, stony (MoD) and Morristown channery silt loam, 25 to 70 percent slopes, boulder (MrF). MoD and MrF reportedly contain approximately 5% and 10% hydric inclusions in poorly drained soils, respectively.

**National Wetland Inventory Map Review:** According to the NWI map of the Flushing, Ohio quadrangle, the Project area does not include any mapped NWI wetlands.

**Wetland Delineation:** URS identified six wetlands within the Project ecological survey area, ranging in size from 0.01 to 0.48 acres, as shown in Table 1. The identified wetlands are not within the preliminary footprint of the switching station pad. The six wetlands are of the same wetland habitat type: palustrine emergent (PEM). Wetlands 1a, 1b, 1c, and 1d were located along the same drainage swale along the base of a hill, but were separated by upland areas. The wetlands are all Category 2 wetlands with ORAM scores ranging from 23.5 to 26.5. These wetlands exhibit limited plant community development and had habitat and hydrology in the early stages of recovering from assumed previous manipulations as a result of former strip-mining, tree/shrub removal, mowing, and other disturbances.

The location and approximate extents of the wetlands, as delineated within the Project survey area are shown on Figure 1. Color photographs taken of the wetlands are provided in Attachment A. Completed USACE wetland delineation and ORAM forms are provided in Attachment B.

### TABLE 1
**DELINEATED WETLANDS WITHIN THE NOTTINGHAM SWITCH STUDY AREA**

<table>
<thead>
<tr>
<th>Wetland Name</th>
<th>Cowardin Wetland Typea</th>
<th>NWI Classificationb</th>
<th>ORAM Score</th>
<th>ORAM Category</th>
<th>Acreage within Study Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wetland 1a</td>
<td>PEM</td>
<td>NC</td>
<td>23.5</td>
<td>Category 1</td>
<td>0.02</td>
</tr>
<tr>
<td>Wetland 1b</td>
<td>PEM</td>
<td>NC</td>
<td>23.5</td>
<td>Category 1</td>
<td>0.48</td>
</tr>
<tr>
<td>Wetland 1c</td>
<td>PEM</td>
<td>NC</td>
<td>23.5</td>
<td>Category 1</td>
<td>0.01</td>
</tr>
<tr>
<td>Wetland 1d</td>
<td>PEM</td>
<td>NC</td>
<td>23.5</td>
<td>Category 1</td>
<td>0.19</td>
</tr>
<tr>
<td>Wetland 2</td>
<td>PEM</td>
<td>NC</td>
<td>24.5</td>
<td>Category 1</td>
<td>0.08</td>
</tr>
<tr>
<td>Wetland 3</td>
<td>PEM</td>
<td>NC</td>
<td>26.5</td>
<td>Category 1</td>
<td>0.37</td>
</tr>
<tr>
<td><strong>Total: 6</strong></td>
<td><strong>PEM: 6</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>1.15</strong></td>
</tr>
</tbody>
</table>

*Cowardin Wetland Typea: PEM = palustrine emergent*

*NWI Classificationb: NC (not classified as a NWI wetland)*
3.3 Stream and River Crossings

No streams were identified within the Project survey area.

4.0 PONDS

No ponds were identified within the Project survey area.

5.0 SUMMARY

No national forests or parks designated or proposed wilderness areas, National or State Wild and Scenic Rivers, wildlife areas, wildlife refuges, wildlife management areas, or wildlife sanctuaries were identified within 1,000 feet of the proposed Project.

The Project is not located within any 100-year flood zones. The project is entirely located within Flood Zone X, an area with minimal flood hazard. No changes in flood elevations are anticipated as a result of the Project.

During the field survey, six PEM, Category 1 wetlands totaling 1.15 acre were identified. These wetlands are not within the preliminary switching station footprint.

6.0 CONCLUSION

This report will be used to assist AEP Ohio Transco's efforts to avoid special status ecological areas, wetlands, and streams to the extent possible during construction of the Project, thereby minimizing impacts to these features identified within the Project area. Based on the preliminary Project footprint and identified features, no construction activity within streams or wetlands is anticipated. Erosion control methods including silt fencing are expected to be used where appropriate to minimize runoff-related impacts to stream channels. As a consequence, significant impacts to these "Waters of the U.S." are not anticipated. Notification or permit applications under Sections 401 and/or 404 of the Clean Water Act are not expected to be required by either the Ohio EPA or the USACE for this Project.
REFERENCES


Rankin, Edward T. 2006. Methods for Assessing Habitat in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI). Ohio EPA Ecological Assessment Section, Division of Surface Water, Columbus, Ohio.


ATTACHMENT A

PHOTOGRAPHS
# PHOTOGRAPHIC RECORD

## Wetlands

<table>
<thead>
<tr>
<th>Client Name:</th>
<th>AEP Ohio Transco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Location:</td>
<td>Nottingham Switch Project</td>
</tr>
<tr>
<td>Project No.</td>
<td>14951489</td>
</tr>
</tbody>
</table>

### Photo No. 1

**Date:**
October 27, 2014

**Description:**
- Wetland 1a
- PEM Wetland
- Facing West
- Category 1 Wetland

### Photo No. 2

**Date:**
October 27, 2014

**Description:**
- Wetland 1a
- PEM Wetland
- Facing Northeast
- Category 1 Wetland

Note: Hydrophytic vegetation in center foreground.
### Photo No. 3

**Date:**
October 27, 2014

**Description:**
- Wetland 1b
- PEM Wetland
- Facing Southwest
- Category 1 Wetland

Note: Significant cattle trampling and a cow path along right side of photo.

### Photo No. 4

**Date:**
October 27, 2014

**Description:**
- Wetland 2
- PEM Wetland
- Facing North
- Category 1 Wetland

Note: Dense wetland grass cover defines wetland area.
<table>
<thead>
<tr>
<th>Photo No.</th>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>October 27, 2014</td>
<td>Wetland 3, PEM Wetland, Facing South, Category 1 Wetland</td>
</tr>
<tr>
<td>6</td>
<td>October 27, 2014</td>
<td>Wetland 3, PEM Wetland, Facing Southwest, Category 1 Wetland</td>
</tr>
</tbody>
</table>
ATTACHMENT B

WETLAND FORMS
**WETLAND DETERMINATION DATA FORM -- Eastern Mountains and Piedmont Region**

<table>
<thead>
<tr>
<th>Project/Site:</th>
<th>Nottingham Station</th>
</tr>
</thead>
<tbody>
<tr>
<td>City/County:</td>
<td>Harrison County</td>
</tr>
<tr>
<td>State:</td>
<td>OH</td>
</tr>
<tr>
<td>Sampling Date:</td>
<td>27-Oct</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Investigator(s):</th>
<th>Ben Otto, Betsy Ewoldt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section, Township, Range:</td>
<td>S018W, 012W / T9N / R5W</td>
</tr>
<tr>
<td>Landform (hillslope, terrace, etc.):</td>
<td>swale</td>
</tr>
<tr>
<td>Local relief (concave, convex, none):</td>
<td>concave</td>
</tr>
<tr>
<td>Slope (%):</td>
<td>40.1961</td>
</tr>
<tr>
<td>Long:</td>
<td>-81.0349</td>
</tr>
<tr>
<td>Datum:</td>
<td>NAD83</td>
</tr>
<tr>
<td>Soil Map Unit Name:</td>
<td>Lowrey silty clay loam, 15 to 25 percent slopes, eroded (LoD2), Lowell silt loam, 8 to 15 percent slopes (LnC)</td>
</tr>
<tr>
<td>NWI classification:</td>
<td>n/a</td>
</tr>
</tbody>
</table>

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

**Hydrophobic Vegetation Present?** Yes X No
**Hydric Soil Present?** Yes X No
**Wetland Hydrology Present?** Yes X No

**Is the Sampled Area**
**within a Wetland?** Yes X No

**Remarks:** PEM wetland located within pasture area. Reclaimed mining area. Wetland is a depressional swale, toe of slope, highly disturbed by cattle.

**HYDROLOGY**

<table>
<thead>
<tr>
<th>Wetland Hydrology Indicators:</th>
<th>Secondary Indicators (minimum of two required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Indicators (minimum of one is required; check all that apply)</td>
<td>Secondary Indicators (minimum of two required)</td>
</tr>
<tr>
<td>x Surface Water (A1)</td>
<td>__ Water-Stained Leaves (B9)</td>
</tr>
<tr>
<td>High Water Table (A2)</td>
<td>__ Aquatic Fauna (B13)</td>
</tr>
<tr>
<td>x Saturation (A3)</td>
<td>__ True Aquatic Plants (B14)</td>
</tr>
<tr>
<td>Water Marks (B1)</td>
<td>__ Hydrogen Sulfide Odor (C1)</td>
</tr>
<tr>
<td>x Sediment Deposits (B2)</td>
<td>x Oxidized Rhizospheres on Living Roots (C3)</td>
</tr>
<tr>
<td>Drift Deposits (B3)</td>
<td>__ Presence of Reduced Iron (C4)</td>
</tr>
<tr>
<td>x Algal Mat or Crust (B4)</td>
<td>__ Recent Iron Reduction in Tilled Soils (C6)</td>
</tr>
<tr>
<td>x Iron Deposits (B5)</td>
<td>__ Thin Muck Surface (C7)</td>
</tr>
<tr>
<td>x Inundation Visible on Aerial Imagery (B7)</td>
<td>__ Other (Explain in Remarks)</td>
</tr>
</tbody>
</table>

**Field Observations:**

| Surface Water Present? | Yes X No |
| Water Table Present? | Yes X No |
| Saturation Present? | Yes X No |

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

**Remarks:**
### Sampling Point: 1

#### Absolute Dominant Indicator

<table>
<thead>
<tr>
<th>Tree Stratum</th>
<th>(Plot size: ft. )</th>
<th>% Cover</th>
<th>Species?</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Dominance Test Worksheet:**

- Number of Dominant Species That Are OBL, FAC, or FAC: 3 (A)
- Total Number of Dominant Species Across All Strata: 3 (B)
- Percent of Dominant Species That Are OBL, FAC, or FAC: 100% (A/B)

#### Prevalence Index Worksheet:

- Total % Cover of: [Multiply by:]
  - OBL species 55 \( \times 1 = 55 \)
  - FACW species 85 \( \times 2 = 170 \)
  - FAC species 10 \( \times 3 = 30 \)
  - FACU species 0 \( \times 4 = 0 \)
  - UPL species 0 \( \times 5 = 0 \)
- Column Totals: 150 (A) 255 (B)
- Prevalence Index = B/A = 1.70

#### Hydrophytic Vegetation Indicators:

- [X] Rapid Test for Hydrophytic Vegetation
- [X] Dominance Test is >50%
- [X] Prevalence Index is ≤ 3.0

**Morphological Adaptations**: (Provide supporting data in Remarks or on a separate sheet)

**Problematic Hydrophytic Vegetation**: (Explain)

- All indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

### Definitions of Vegetation Strata:

- **Tree** - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/shrub** - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall.
- **Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody vines** - All woody vines greater than 3.28 ft in height.

### Remarks:

(Include photo numbers here or on a separate sheet.)
### SOIL Profile Description:

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14&quot;</td>
<td>10YR 4/2</td>
<td>%</td>
<td>7.5YR 4/4</td>
<td>10</td>
</tr>
</tbody>
</table>

**Type:**
- C = Concentration
- D = Depletion
- RM = Reduced Matrix
- MS = Masked Sand Grains

**Location:**
- PL = Pore Lining
- M = Matrix

**Indicators for Problematic Hydric Soils:**
- Histosol (A1) Dark Surface (S7)
- Histic Epipedon (A2) Polyvalue Below Surface (S8) (MLRA 147, 148)
- Black Histic (A3) Thin Dark Surface (S9) (MLRA 147, 148)
- Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2)
- Stratified Layers (A5) X Depleted Matrix (F3)
- 2 cm Muck (A10) (LRR N) Redox Dark Surface (F6)
- Depleted Below Dark Surface (A11) Depleted Dark Surface (F7)
- Thick Dark Surface (A12) Redox Depressions (F8)
- Sandy Mucky Mineral (S1) Iron-Manganese Masses (F12) (LRR N, MLRA 147, 148)
- Sandy Gleyed Matrix (S4) Umbriic Surface (F13) (MLRA 136, 122)
- Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 148)
- Stripped Matrix (S6) Red Parent Material (F21) (MLRA 127, 147)

**Restrictive Layer (if observed):**
- Type: (none)
- Depth (inches):

**Hydric Soil Present?** Yes X No

**Remarks:**
Soils highly disturbed. Previously strip-mined.
### Metric 1. Wetland Area (size).

<table>
<thead>
<tr>
<th>Size Class</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;50 acres (&gt;20.2ha) (6 pts)</td>
<td></td>
</tr>
<tr>
<td>25 to &lt;50 acres (10.1 to &lt;20.2ha) (5 pts)</td>
<td></td>
</tr>
<tr>
<td>10 to &lt;25 acres (4 to &lt;10.1ha) (4 pts)</td>
<td></td>
</tr>
<tr>
<td>3 to &lt;10 acres (1.2 to &lt;4ha) (3 pts)</td>
<td></td>
</tr>
<tr>
<td>0.3 to &lt;3 acres (0.12 to &lt;1.2ha) (2 pts)</td>
<td></td>
</tr>
<tr>
<td>0.1 to &lt;0.3 acres (0.04 to &lt;0.12ha) (1 pt)</td>
<td></td>
</tr>
<tr>
<td>&lt;0.1 acres (0.04ha) (0 pts)</td>
<td></td>
</tr>
</tbody>
</table>

**Select one size class and assign score.**

**Subtotal:** 0.7 acres

---

### Metric 2. Upland buffers and surrounding land use.

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

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

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

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

**Subtotal:** 6.0

---

### Metric 3. Hydrology.

3a. **Sources of Water. Score all that apply.**

- High pH groundwater (5)
- Other groundwater (3)
- Precipitation (1)
- Seasonal/intermittent surface water (3)
- Perennial surface water (lake or stream) (5)

3b. **Connectivity. Score all that apply.**

- 100 year floodplain (1)
- Between stream/lake and other human use (1)
- Part of wetland/upland (e.g. forest), complex (1)
- Part of riparian or upland corridor (1)

3c. **Maximum water depth. Select one.**

- 0.7 (27.6in) (3)
- 0.4 to 0.7m (15.7 to 27.6in) (2)
- <0.4m (<15.7in) (1)

3d. **Duration inundation/saturation. Score one or dbl check.**

- Semi- to permanently inundated/saturated (4)
- Regularly inundated/saturated (3)
- Seasonally inundated (2)
- Seasonally saturated in upper 30cm (12in) (1)

**Subtotal:** 5.5

---

### Metric 4. Habitat Alteration and Development.

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

- None or none apparent (4)
- Recovered (3)
- Recovering (2)
- Recent or no recovery (1)

4b. **Habitat development. Select only one and assign score.**

- Excellent (7)
- Very good (6)
- Good (5)
- Moderately good (4)
- Fair (3)
- Poor to fair (2)
- Poor (1)

4c. **Habitat alteration. Score one or double check and average.**

- None or none apparent (9)
- Recovered (6)
- Recovering (3)
- Recent or no recovery (1)

**Subtotal:** 23.5

---

**ORAM v. 5.0 Field Form Quantitative Rating**

---
Metric 5. Special Wetlands.
Check all that apply and score as indicated.

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

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Score all present using 0 to 3 scale.

Aquatic bed
Emergent
Shrub
Forest
Mudflats
Open water
Other

6b. Horizontal (plan view) Interspersion.
Select only one.

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

6c. Coverage of invasive plants. Refer Table 1 ORAM long form for list. Add or deduct points for coverage

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 hummocks/tussucks
Coarse woody debris >15cm (6in)
Standing dead >25cm (10in) dbh
Amphibian breeding pools

23.5 GRAND TOTAL (max 100 pts)
**WETLAND DETERMINATION DATA FORM -- Eastern Mountains and Piedmont Region**

**Project/Site:** Nottingham Station  
**City/County:** Harrison County  
**Applicant/Owner:** AEP  
**State:** OH  
**Sampling Date:** 27-Oct  
**Investigator(s):** Ben Otto, Betsy Ewoldt  
**Section, Township, Range:** S018W / T9N / R5W  
**Slope (%):** 40.1995  
**Local relief (concave, convex, none):** concave  
**Soil Map Unit Name:** Morristown channery silt loam, 25 to 70 percent slopes, bouldery (MrF)  
**Datum:** NAD83  

**HYDROLOGY**

<table>
<thead>
<tr>
<th>Wetland Hydrology Indicators:</th>
<th>Secondary Indicators (minimum of two required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Indicators (minimum of one is required; check all that apply)</td>
<td>Secondary Indicators (minimum of two required)</td>
</tr>
<tr>
<td>Surface Water (A1)</td>
<td>Water-Stained Leaves (B9)</td>
</tr>
<tr>
<td>High Water Table (A2)</td>
<td>Aquatic Fauna (B13)</td>
</tr>
<tr>
<td>Saturation (A3)</td>
<td>True Aquatic Plants (B14)</td>
</tr>
<tr>
<td>Water Marks (B1)</td>
<td>Hydrogen Sulfide Odor (C1)</td>
</tr>
<tr>
<td>Sediment Deposits (B2)</td>
<td>Oxidized Rhizospheres on Living Roots (C3)</td>
</tr>
<tr>
<td>Drift Deposits (B3)</td>
<td>Presence of Reduced Iron (C4)</td>
</tr>
<tr>
<td>Algal Mat or Crust (B4)</td>
<td>Recent Iron Reduction in Tilled Soils (C6)</td>
</tr>
<tr>
<td>Iron Deposits (B5)</td>
<td>Thin Muck Surface (C7)</td>
</tr>
<tr>
<td>Inundation Visible on Aerial Imagery (B7)</td>
<td>Other (Explain in Remarks)</td>
</tr>
<tr>
<td><strong>Field Observations:</strong></td>
<td><strong>Wetland Hydrology Present?</strong> Yes</td>
</tr>
<tr>
<td>Surface Water Present?</td>
<td>Yes</td>
</tr>
<tr>
<td>Water Table Present?</td>
<td>Yes</td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Remarks:</strong></td>
<td>Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:</td>
</tr>
</tbody>
</table>

PEM located in reclaimed mining area. Wetland is depressional and located on a hilltop.
### Dominance Test Worksheet:

<table>
<thead>
<tr>
<th>Number of Dominant Species That Are OBL, FACW, or FAC:</th>
<th>3 (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Number of Dominant Species Across All Strata</td>
<td>3 (B)</td>
</tr>
<tr>
<td>Percent of Dominant Species That Are OBL, FACW, or FAC:</td>
<td>100% (A/B)</td>
</tr>
</tbody>
</table>

### Prevalence Index Worksheet:

| Total % Cover of: Multiply by: |
|----------------|--------------|
| OBL species | 75 x 1 = 75 |
| FACW species | 40 x 2 = 80 |
| FAC species | 10 x 3 = 30 |
| FACU species | 0 x 4 = 0 |
| UPL species | 10 x 5 = 50 |
| Column Totals: | 135 (A) 235 (B) |
| Prevalence Index = B/A = | 1.74 |

### Hydrophytic Vegetation Indicators:

- Rapid Test for Hydrophytic Vegetation: X
- X: Prevalence Index is ≤ 3.0

### Definitions of Vegetation Strata:

- **Tree** - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/shrub** - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall.
- **Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody vines** - All woody vines greater than 3.28 ft in height.

### Remarks:

Include photo numbers here or on a separate sheet.

---

**Eleocharis acicularis**

**Symphyotrichum puniceum**

**Polygonum sp.**

**Solidago sp.**

---

**Juncus effusus**

**Carex linda**

**Scirpus atrovirens**

**Scirpus cyperinus**

**Sympotrichum puniceum**

**Polygnum sp.**

**Solidago sp.**
<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix Color (moist)</th>
<th>Redox Features Color (moist)</th>
<th>Type</th>
<th>Location</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14&quot;</td>
<td>10YR 4/2</td>
<td>7.5YR 4/6</td>
<td>C</td>
<td>M</td>
<td>silty clay loam</td>
<td>Pore linings observed as well</td>
</tr>
</tbody>
</table>

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Location: PL=Pore Lining, M=Matrix.

### Hydric Soil Indicators:
- 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)

### Redox Features:
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

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

### Hydric Soil Present?

- Yes □
- No □

**Remarks:**
Soils highly disturbed. Previously strip-mined.
Metric 1. Wetland Area (size).

w-bao-102714-2

Select one size class and assign score.

- >50 acres (>20.2ha) (6 pts)
- 26 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)

Metric 2. Upland buffers and surrounding land use.

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

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

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

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

Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- High pH groundwater (5)
- Other groundwater (3)
- Precipitation (1)
- Seasonal/intermittent surface water (3)
- Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- 100 year floodplain (1)
- Between stream/lake and other human use (1)
- Part of wetland/upland (e.g. forest), complex (1)

3c. Maximum water depth. Select one.

- >0.7 (27.6in) (3)
- 0.4 to 0.7m (15.7 to 27.6in) (2)
- <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or double check.

- Semi- to permanently inundated/saturated (4)
- Regularly inundated/saturated (3)
- Seasonally inundated (2)
- Seasonally saturated in upper 30cm (12in) (1)

Metric 4. Habitat Alteration and Development.

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

- None or none apparent (4)
- Recovered (3)
- Recovering (2)
- Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- Excellent (7)
- Very good (6)
- Good (5)
- Moderately good (4)
- Fair (3)
- Poor to fair (2)
- Poor (1)

4c. Habitat alteration. Score one or double check and average.

- None or none apparent (9)
- Recovered (6)
- Recovering (3)
- Recent or no recovery (1)

- mowing
- grazing
- clearcutting
- selective cutting
- woody debris removal
- toxic pollutants

- shrub/sapling removal
- herbaceous/aquatic bed removal
- sedimentation
- dredging
- farming
- nutrient enrichment

ORAM v. 5.0 Field Form Quantitative Rating
Metric 5. Special Wetlands.
Check all that apply and score as indicated.

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

Score: 4

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.
Vegetation Community Cover Scale
0 Absent or comprises <0.1ha (0.2471 acres) contiguous area
1 Present and either comprises small part of wetland's vegetation and is of moderate quality, or comprises a significant part but is of low quality
2 Present and either comprises significant part of wetland's vegetation and is of moderate quality or comprises a small part and is of high quality
3 Present and comprises significant part, or more, of wetland's vegetation and is of high quality

Narrative Description of Vegetation Quality
Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally with presence of rare threatened or endangered spp
A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

6b. horizontal (plan view) Interspersion.
Select only one.
High (5)
Moderately high(4)
Low (1)
None (0)

6c. Coverage of invasive plants. Refer Table 1 ORAM long form for list. Add or deduct points for coverage
Extensive >75% cover (-5)
Moderate 25-75% cover (-3)
Sparse 5-25% cover (-1)
Nearly absent <5% cover (0)
Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.
1 Vegetated hummocks/tussucks
Coarse woody debris >15cm (6in)
Standing dead >25cm (10in) dbh
1 Amphibian breeding pools

Score: 24.5

Total: 24.5

GRAND TOTAL (max 100 pts)

0 20.5 subtotal this page
20.5

0 24.5 subtotal this page
24.5
**HYDROLOGY**

**Wetland Hydrology Indicators:**

<table>
<thead>
<tr>
<th>Primary Indicators (minimum of one is required; check all that apply)</th>
<th>Secondary Indicators (minimum of two required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water (A1)</td>
<td>Surface Soil Cracks (B6)</td>
</tr>
<tr>
<td>x High Water Table (A2)</td>
<td>Sparserly Vegetated Concave Surface (B8)</td>
</tr>
<tr>
<td>x Saturation (A3)</td>
<td>Drainage Patterns (B10)</td>
</tr>
<tr>
<td>x Water Marks (B1)</td>
<td>Moss Trim Lines (B16)</td>
</tr>
<tr>
<td>x Sediment Deposits (B2)</td>
<td>Dry-Season Water Table (C2)</td>
</tr>
<tr>
<td>x Drift Deposits (B3)</td>
<td>Clayfish Burrows (C8)</td>
</tr>
<tr>
<td>x Algal Mat or Crust (B4)</td>
<td>Saturation Visible on Aerial Imagery (C9)</td>
</tr>
<tr>
<td>x Iron Deposits (B5)</td>
<td>Stunted or Stressed Plants (D1)</td>
</tr>
<tr>
<td>x Inundation Visible on Aerial Imagery (B7)</td>
<td>x Geomorphic Position (D2)</td>
</tr>
<tr>
<td></td>
<td>x Shallow Aquitard (D3)</td>
</tr>
<tr>
<td></td>
<td>x Microtopographic Relief (D4)</td>
</tr>
<tr>
<td></td>
<td>x FAC-Neutral Test (D5)</td>
</tr>
</tbody>
</table>

**Field Observations:**

| Surface Water Present? | Yes | No | X | Depth (inches): | N/A |
| Water Table Present? | Yes | x | No | Depth (inches): | 6” |
| Saturation Present? | Yes | x | No | Depth (inches): | surface |

**Remarks:**

PEM located in reclaimed mining area. Wetland is depressional and highly disturbed by cattle.

**WETLAND DETERMINATION DATA FORM -- Eastern Mountains and Piedmont Region**

w-bao-102714-003

Project/Site: Nottingham Station
City/County: Harrison County
Applicant/Owner: AEP
Investigator(s): Ben Otto, Betsy Ewoldt
Landform (hillslope, terrace, etc.): Depressional
Slope (%): 40.1938

Remarks: PEM located in reclaimed mining area. Wetland is depressional and highly disturbed by cattle.

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

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

**HYDROLOGY**

**Wetland Hydrology Indicators:**

<table>
<thead>
<tr>
<th>Primary Indicators (minimum of one is required; check all that apply)</th>
<th>Secondary Indicators (minimum of two required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water (A1)</td>
<td>Surface Soil Cracks (B6)</td>
</tr>
<tr>
<td>x High Water Table (A2)</td>
<td>Sparserly Vegetated Concave Surface (B8)</td>
</tr>
<tr>
<td>x Saturation (A3)</td>
<td>Drainage Patterns (B10)</td>
</tr>
<tr>
<td>x Water Marks (B1)</td>
<td>Moss Trim Lines (B16)</td>
</tr>
<tr>
<td>x Sediment Deposits (B2)</td>
<td>Dry-Season Water Table (C2)</td>
</tr>
<tr>
<td>x Drift Deposits (B3)</td>
<td>Clayfish Burrows (C8)</td>
</tr>
<tr>
<td>x Algal Mat or Crust (B4)</td>
<td>Saturation Visible on Aerial Imagery (C9)</td>
</tr>
<tr>
<td>x Iron Deposits (B5)</td>
<td>Stunted or Stressed Plants (D1)</td>
</tr>
<tr>
<td>x Inundation Visible on Aerial Imagery (B7)</td>
<td>x Geomorphic Position (D2)</td>
</tr>
<tr>
<td></td>
<td>x Shallow Aquitard (D3)</td>
</tr>
<tr>
<td></td>
<td>x Microtopographic Relief (D4)</td>
</tr>
<tr>
<td></td>
<td>x FAC-Neutral Test (D5)</td>
</tr>
</tbody>
</table>

**Field Observations:**

| Surface Water Present? | Yes | No | X | Depth (inches): | N/A |
| Water Table Present? | Yes | x | No | Depth (inches): | 6” |
| Saturation Present? | Yes | x | No | Depth (inches): | surface |

**Remarks:**

PEM located in reclaimed mining area. Wetland is depressional and highly disturbed by cattle.
VEGETATION - Use scientific names of plants.

<table>
<thead>
<tr>
<th>Tree Stratum (Plot size: ft. )</th>
<th>Absolute % Cover</th>
<th>Dominant Species?</th>
<th>Indicator Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Dominance Test Worksheet:**

- Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
- Total Number of Dominant Species Across All Strata: 3 (B)
- Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

**Prevalence Index worksheet:**

- Total % Cover of: Multiply by:
  - OBL species 30 x 1 = 30
  - FACW species 25 x 2 = 50
  - FAC species 65 x 3 = 195
  - FACU species 0 x 4 = 0
  - UPL species 0 x 5 = 0
- Column Totals: 120 (A) 275 (B)
- Prevalence Index = B/A = 2.29

**Hydrophytic Vegetation Indicators:**

- Rapid Test for Hydrophytic Vegetation: X
- Dominance Test is >50%: X
- Prevalence Index ≤ 3.0: X

- Morphological Adaptations1 (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation1 (Explain)

1Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Vegetation Strata:**

- **Tree** - Woody plants 3 inches (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
- **Sapling/shrub** - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall.
- **Herb** - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
- **Woody vines** - All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes X No

Remarks: (Include photo numbers here or on a separate sheet.)
Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix Color (moist)</th>
<th>Matrix %</th>
<th>Redox Features Color (moist)</th>
<th>Redox Features %</th>
<th>Type 1</th>
<th>Type 2</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14&quot;</td>
<td>7.5YR 4/2</td>
<td>95</td>
<td>7.5YR 5/8</td>
<td>5</td>
<td>C</td>
<td>M</td>
<td>silty clay loam</td>
<td>Pore linings observed as well</td>
</tr>
</tbody>
</table>

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:
- 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)

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

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

Restrictive Layer (if observed):
- Type: (none)
- Depth (inches): 

Hydric Soil Present? Yes X No

Remarks:
Soils highly disturbed. Previously strip-mined.
Site: AEP Nottingham Station  Rater(s): BAO, BAE  Date: 10/27/2014

2 2 Metric 1. Wetland Area (size).  w-bao-102714-3

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)
- 5 to <10 acres (1.2 to <4ha) (3 pts)
- 3 to <3 acres (0.12 to <1.2ha) (2 pts)
- 1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- <0.1 acres (0.04ha) (0 pts)

0.37 acres

11 13 Metric 2. Upland buffers and surrounding land use.

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

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

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

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

5.0 18 Metric 3. Hydrology.

3a. Sources of Water. Score all that apply.

- High pH groundwater (5)
- Other groundwater (3)
- Precipitation (1)
- Seasonal/Intermittent surface water (3)
- Perennial surface water (lake or stream) (5)

3b. Connectivity. Score all that apply.

- Between stream/lake and other human use (1)
- Part of wetland/upland (e.g. forest), complex (1)
- Part of riparian or upland corridor (1)

3c. Maximum water depth. Select one.

- <0.7 (27.6in) (3)
- 0.4 to 0.7m (15.7 to 27.6in) (2)
- <0.4m (<15.7in) (1)

3d. Duration inundation/saturation. Score one or dbl check.

- Seasonally inundated (2)
- Seasonally saturated in upper 30cm (12in) (1)

5.5 23.5 Metric 4. Habitat Alteration and Development.

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

- None or none apparent (4)
- Recovered (3)
- Recovering (2)
- Recent or no recovery (1)

4b. Habitat development. Select only one and assign score.

- Excellent (7)
- Very good (6)
- Good (5)
- Moderately good (4)
- Fair (3)
- Poor to fair (2)
- Poor (1)

4c. Habitat alteration. Score one or double check and average.

- None or none apparent (9)
- Recovered (6)
- Recovering (3)
- Recent or no recovery (1)

Check all disturbances observed

- Mowing
- Grazing
- Clearcutting
- Selective cutting
- Woody debris removal
- Toxic pollutants
- Shrub/sapling removal
- Herbaceous/aquatic bed removal
- Sedimentation
- Dredging
- Farming
- Nutrient enrichment

23.5 subtotal this page  ORAM v. 5.0 Field Form Quantitative Rating
**Metric 5. Special Wetlands.**

Check all that apply and score as indicated.

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

### Total

23.5

---

**Metric 6. Plant communities, interspersion, microtopography.**

#### 6a. Wetland Vegetation Communities.

**Vegetation Community Cover Scale**

<table>
<thead>
<tr>
<th>Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Absent or comprises &lt;0.1ha (0.2471 acres) contiguous area</td>
</tr>
<tr>
<td>1</td>
<td>Present and either comprise small part of wetland's 1 vegetation and is of moderate quality, or comprises a significant part but is of low quality</td>
</tr>
<tr>
<td>2</td>
<td>Present and either comprises significant part of wetland's 2 vegetation and is of moderate quality or comprises a small part and is of high quality</td>
</tr>
<tr>
<td>3</td>
<td>Present and comprises significant part, or more, of wetland's 3 vegetation and is of high quality</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>Narrative Description of Vegetation Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Low spp diversity and/or predominance of nonnative or low disturbance tolerant native species, native spp are dominant component of the vegetation, mod</td>
</tr>
<tr>
<td>1</td>
<td>Moderate (3) Native spp are dominant component of the vegetation, moderate high, but generally low presence of rare threatened or endangered spp</td>
</tr>
<tr>
<td>2</td>
<td>Low (1) Even although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate</td>
</tr>
<tr>
<td>3</td>
<td>None (0) A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp</td>
</tr>
</tbody>
</table>

#### 6b. Horizontal (plan view) Interspersion.

<table>
<thead>
<tr>
<th>Score</th>
<th>Select only one.</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>5</td>
</tr>
<tr>
<td>Moderate high</td>
<td>4</td>
</tr>
<tr>
<td>Moderate</td>
<td>3</td>
</tr>
<tr>
<td>Low</td>
<td>2</td>
</tr>
<tr>
<td>None</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>Percentage of cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extensive</td>
<td>&gt;75% cover (-5)</td>
</tr>
<tr>
<td>Moderate 25-75% cover</td>
<td>(-3)</td>
</tr>
<tr>
<td>Sparse 5-25% cover</td>
<td>(-1)</td>
</tr>
<tr>
<td>Nearly absent &lt;5% cover</td>
<td>(0)</td>
</tr>
</tbody>
</table>

#### 6c. Coverage of invasive plants. Refer Table 1 ORAM long form for list. Add or deduct points for coverage.

<table>
<thead>
<tr>
<th>Score</th>
<th>Extensive coverage (&gt;75%) and/or invasive species</th>
<th>Moderate coverage (25-75%)</th>
<th>Sparse coverage (5-25%)</th>
<th>Nearly absent (&lt;5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extensive</td>
<td>A predominance of invasive species with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>Presence of invasive species, native spp high and/or disturbance tolerant native spp absent or nearly absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sparse</td>
<td>Presence of invasive species, native spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nearly absent</td>
<td>Presence of invasive species, native spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### 6d. Microtopography.

<table>
<thead>
<tr>
<th>Score</th>
<th>Extent of microtopography</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Absent or comprises &lt;0.1ha (0.247 acres)</td>
</tr>
<tr>
<td>1</td>
<td>Low 0.1 to &lt;1ha (0.247 to 2.47 acres)</td>
</tr>
<tr>
<td>2</td>
<td>Moderate 1 to &lt;4ha (2.47 to 9.88 acres)</td>
</tr>
<tr>
<td>3</td>
<td>High 4ha (9.88 acres) or more</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>Microtopography Cover Scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Absent</td>
</tr>
<tr>
<td>1</td>
<td>Present very small amounts or if more common of marginal quality</td>
</tr>
<tr>
<td>2</td>
<td>Present in moderate amounts, but not of highest quality or in small amounts of highest quality</td>
</tr>
<tr>
<td>3</td>
<td>Present in moderate or greater amounts and of highest quality</td>
</tr>
</tbody>
</table>

### Total

26.5

---

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

<table>
<thead>
<tr>
<th>Wetland Hydrology Indicators:</th>
<th>Secondary Indicators (minimum of two required)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Indicators (minimum of one is required; check all that apply)</td>
<td>Surface Soil Cracks (B6)</td>
</tr>
<tr>
<td><em>Surface Water (A1)</em></td>
<td>Water-Stained Leaves (B9)</td>
</tr>
<tr>
<td><em>High Water Table (A2)</em></td>
<td>Aquatic Fauna (B13)</td>
</tr>
<tr>
<td><em>Saturation (A3)</em></td>
<td>True Aquatic Plants (B14)</td>
</tr>
<tr>
<td><em>Water Marks (B1)</em></td>
<td>Hydrogen Sulfide Odor (C1)</td>
</tr>
<tr>
<td><em>Sediment Deposits (B2)</em></td>
<td>Oxidized Rhizospheres on Living Roots (C3)</td>
</tr>
<tr>
<td><em>Drift Deposits (B3)</em></td>
<td>Presence of Reduced Iron (C4)</td>
</tr>
<tr>
<td><em>Algal Mat or Crust (B4)</em></td>
<td>Recent Iron Reduction in Tilled Soils (C6)</td>
</tr>
<tr>
<td><em>Iron Deposits (B5)</em></td>
<td>Thin Muck Surface (C7)</td>
</tr>
<tr>
<td><em>Inundation Visible on Aerial Imagery (B7)</em></td>
<td>Other (Explain in Remarks)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Field Observations:</th>
<th>Wetland Hydrology Present?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface Water Present?</td>
<td>Yes, No, X Depth (inches): N/A</td>
</tr>
<tr>
<td>Water Table Present?</td>
<td>Yes, No, X Depth (inches): N/A</td>
</tr>
<tr>
<td>Saturation Present?</td>
<td>Yes, No, X Depth (inches): N/A</td>
</tr>
<tr>
<td>(includes capillary fringe)</td>
<td></td>
</tr>
</tbody>
</table>

**Remarks:**

(Explain alternative procedures here or in a separate report.)

Upland area is reclaimed mining area that is being grazed by cattle.
**VEGETATION - Use scientific names of plants.**

**Sampling Point:** 1

### Tree Stratum (Plot size: ft. )

<table>
<thead>
<tr>
<th>Number</th>
<th>Species</th>
<th>% Cover</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Number of Dominant Species That Are OBL, FACW, or FAC:** 0 (A)

**Total Number of Dominant Species Across All Strata:** 2 (B)

**Percent of Dominant Species That Are OBL, FACW, or FAC:** 0% (A/B)

### Sapling/Shrub Stratum (Plot size: ft. )

<table>
<thead>
<tr>
<th>Number</th>
<th>Total % Cover of:</th>
<th>Multiply by:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>4.</td>
<td>220</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>350</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>570</td>
<td>6</td>
</tr>
</tbody>
</table>

**Prevalence Index = B/A =** 4.56

### Herb Stratum (Plot size: ft. )

<table>
<thead>
<tr>
<th>Number</th>
<th>Species</th>
<th>% Cover</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Daucus carota</td>
<td>30</td>
<td>Yes</td>
</tr>
<tr>
<td>2.</td>
<td>Trifolium pratense</td>
<td>40</td>
<td>Yes</td>
</tr>
<tr>
<td>3.</td>
<td>Aster sp.</td>
<td>5</td>
<td>No</td>
</tr>
<tr>
<td>4.</td>
<td>Poa sp.</td>
<td>20</td>
<td>No</td>
</tr>
<tr>
<td>5.</td>
<td>Solidago sp</td>
<td>15</td>
<td>No</td>
</tr>
<tr>
<td>6.</td>
<td>Solidago officinale</td>
<td>15</td>
<td>No</td>
</tr>
<tr>
<td>7.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20.</td>
<td>Solidago officinale</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Total Cover = 125 (A)**

### Woody Vine Stratum (Plot size: ft. )

<table>
<thead>
<tr>
<th>Number</th>
<th>% Cover</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Hydrophytic Vegetation Indicators:**

- No Rapid Test for Hydrophytic Vegetation
- No Dominance Test is >50%
- No Prevalence Index is ≤ 3.0
- Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- No Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

### Definitions of Vegetation Strata:

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

**Sapling/shrub** - Woody plants less than 3 inches DBH and greater than 3.28 ft (1 m) tall.

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

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

**Hydrophytic Vegetation Present?** Yes ______ No X

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

---

US Army Corps of Engineers Eastern Mountains and Piedmont - Version 2.0
<table>
<thead>
<tr>
<th>Depth (inches)</th>
<th>Matrix</th>
<th>Redox Features</th>
<th>Texture</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14&quot;</td>
<td>10YR 4/3</td>
<td>100</td>
<td></td>
<td>silt loam</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**
- 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)

**Indicators for Problematic Hydric Soils:**
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

**Restrictive Layer (if observed):**
- Type: (none)
- Depth (inches): __________

**Hydric Soil Present?** Yes _____ No X _____

**Remarks:**
Soils highly disturbed. Previously strip-mined.