

Large Filing Separator Sheet

Case Number: 17-328-GA-BLN

File Date: 4/4/2017

Section: 1 of 3

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Description of Document: Letter of
Notification



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Columbus, Ohio, 43215

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RECEIVED DOCKETING DIV

2017 APR -4 PM 3: 28

April 4, 2017

PUCO

Ms. Barcy McNeal
PUCO Docketing Division
180 East Broad Street, 11th Floor
Columbus, OH 43215-3716

Re: ¹⁷~~16~~-328-GA-BLN, Duke Energy Ohio, Inc.'s Letter of Notification for the Line D000B
Natural Gas Pipeline Replacement Project

Dear Ms. McNeal:

In accordance with Ohio Administrative Code Rules 4906-5-02 and 4906-11-01, Duke Energy Ohio, Inc., submits the attached Letter of Notification, for expedited approval. A check in the amount of \$2,000 for expedited processing is included. The requested start date of construction is May 5, 2017.

As required by the rules, Duke Energy Ohio has sent a copy of the Letter of Notification to officials. Please find attached copies of cover letters that have been forwarded to the Cincinnati Public Library, the Mayor of Cincinnati, and the offices of the Hamilton County Commissioners.

Respectfully submitted,

Jeanne W. Kingery
Associate General Counsel

This is to certify that the images appearing are an
accurate and complete reproduction of a case file
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*Duke Energy Ohio, Inc.
139 East Fourth Street
Cincinnati, Ohio 45201*

April 4, 2017

The Public Library of Cincinnati and Hamilton County
800 Vine Street
Cincinnati, Ohio 45202

Via electronic mail

**Letter of Notification
Line D000B Natural Gas Pipeline Replacement Project**

Dear Sir or Madam:

Please find attached a link to an electronic copy of a Letter of Notification that Duke Energy Ohio, Inc. has submitted to the Ohio Power Siting Board regarding the planned construction of an approximately 3.3-mile replacement of a natural gas pipeline. The Letter of Notification submittal is required in accordance with Chapter 4906 of the Ohio Administrative Code (OAC). The north-western terminus of the Project begins southeast of Duke Energy Ohio's natural gas distribution center at the Cincinnati's East End Facility property. The pipeline will run in a south-southeast direction and will be bound by U.S. 52 to the east and the Ohio River to the southwest. The replacement pipeline will terminate near, and northwest of, the confluences of the Little Miami and Ohio Rivers.

In accordance with OAC 4906-1-01 Appendix A, we are required to prepare this Letter of Notification for the Ohio Power Siting Board and in compliance with OAC 4906-11-01(D)(4), we are hereby providing you with an electronic copy.

Cordially,
Duke Energy Ohio, Inc.

Kelsey M. Pace
Lead Transmission Siting Lead

*Duke Energy Ohio, Inc.
139 East Fourth Street
Cincinnati, Ohio 45201*

April 4, 2017

Mayor John Cranley
Mayor of City of Cincinnati, Ohio
801 Plum St.
Cincinnati, Ohio 45202

Via electronic mail

**Letter of Notification
Line D000B Natural Gas Pipeline Replacement Project**

Dear Mayor Cranley:

Please find attached a link to an electronic copy of a Letter of Notification that Duke Energy Ohio, Inc. has submitted to the Ohio Power Siting Board regarding the planned construction of an approximately 3.3-mile replacement of a natural gas pipeline. The Letter of Notification submittal is required in accordance with Chapter 4906 of the Ohio Administrative Code (OAC). The north-western terminus of the Project begins southeast of Duke Energy Ohio's natural gas distribution center at the Cincinnati's East End Facility property. The pipeline will run in a south-southeast direction and will be bound by U.S. 52 to the east and the Ohio River to the southwest. The replacement pipeline will terminate near, and northwest of, the confluences of the Little Miami and Ohio Rivers.

In accordance with OAC 4906-1-01 Appendix A, we are required to prepare this Letter of Notification for the Ohio Power Siting Board and in compliance with OAC 4906-11-01(D)(4), we are hereby providing you with an electronic copy.

Cordially,
Duke Energy Ohio, Inc.

Kelsey M. Pace
Lead Transmission Siting Lead

*Duke Energy Ohio, Inc.
139 East Fourth Street
Cincinnati, Ohio 45201*

April 4, 2017

Matthew Shad
Zoning Administrator
801 Plum St.
Cincinnati, Ohio 45202

Via electronic mail

**Letter of Notification
Line D000B Natural Gas Pipeline Replacement Project**

Dear Mr. Shad:

Please find attached a link to an electronic copy of a Letter of Notification that Duke Energy Ohio, Inc. has submitted to the Ohio Power Siting Board regarding the planned construction of an approximately 3.3-mile replacement of a natural gas pipeline. The Letter of Notification submittal is required in accordance with Chapter 4906 of the Ohio Administrative Code (OAC). The north-western terminus of the Project begins southeast of Duke Energy Ohio's natural gas distribution center at the Cincinnati's East End Facility property. The pipeline will run in a south-southeast direction and will be bound by U.S. 52 to the east and the Ohio River to the southwest. The replacement pipeline will terminate near, and northwest of, the confluences of the Little Miami and Ohio Rivers.

In accordance with OAC 4906-1-01 Appendix A, we are required to prepare this Letter of Notification for the Ohio Power Siting Board and in compliance with OAC 4906-11-01(D)(4), we are hereby providing you with an electronic copy.

Cordially,
Duke Energy Ohio, Inc.

Kelsey M. Pace
Lead Transmission Siting Lead

*Duke Energy Ohio, Inc.
139 East Fourth Street
Cincinnati, Ohio 45201*

April 4, 2017

Todd Portune
President
Hamilton County, Ohio Commissioners
138 E. Court St., 603
Cincinnati, Ohio 45223

Via electronic mail

**Letter of Notification
Line D000B Natural Gas Pipeline Replacement Project**

Dear Mr. Portune:

Please find attached a link to an electronic copy of a Letter of Notification that Duke Energy Ohio, Inc. has submitted to the Ohio Power Siting Board regarding the planned construction of an approximately 3.3-mile replacement of a natural gas pipeline. The Letter of Notification submittal is required in accordance with Chapter 4906 of the Ohio Administrative Code (OAC). The north-western terminus of the Project begins southeast of Duke Energy Ohio's natural gas distribution center at the Cincinnati's East End Facility property. The pipeline will run in a south-southeast direction and will be bound by U.S. 52 to the east and the Ohio River to the southwest. The replacement pipeline will terminate near, and northwest of, the confluences of the Little Miami and Ohio Rivers.

In accordance with OAC 4906-1-01 Appendix A, we are required to prepare this Letter of Notification for the Ohio Power Siting Board and in compliance with OAC 4906-11-01(D)(4), we are hereby providing you with an electronic copy.

Cordially,
Duke Energy Ohio, Inc.

Kelsey M. Pace
Lead Transmission Siting Lead

*Duke Energy Ohio, Inc.
139 East Fourth Street
Cincinnati, Ohio 45201*

April 4, 2017

Denise Driehaus
Vice President
Hamilton County, Ohio Commissioners
138 E. Court St., 603
Cincinnati, Ohio 45223

Via electronic mail

**Letter of Notification
Line D000B Natural Gas Pipeline Replacement Project**

Dear Ms. Driehaus:

Please find attached a link to an electronic copy of a Letter of Notification that Duke Energy Ohio, Inc. has submitted to the Ohio Power Siting Board regarding the planned construction of an approximately 3.3-mile replacement of a natural gas pipeline. The Letter of Notification submittal is required in accordance with Chapter 4906 of the Ohio Administrative Code (OAC). The north-western terminus of the Project begins southeast of Duke Energy Ohio's natural gas distribution center at the Cincinnati's East End Facility property. The pipeline will run in a south-southeast direction and will be bound by U.S. 52 to the east and the Ohio River to the southwest. The replacement pipeline will terminate near, and northwest of, the confluences of the Little Miami and Ohio Rivers.

In accordance with OAC 4906-1-01 Appendix A, we are required to prepare this Letter of Notification for the Ohio Power Siting Board and in compliance with OAC 4906-11-01(D)(4), we are hereby providing you with an electronic copy.

Cordially,
Duke Energy Ohio, Inc.

Kelsey M. Pace
Lead Transmission Siting Lead

*Duke Energy Ohio, Inc.
139 East Fourth Street
Cincinnati, Ohio 45201*

April 4, 2017

Chris Monzel
Hamilton County, Ohio Commissioners
138 E. Court St., 603
Cincinnati, Ohio 45223

Via electronic mail

**Letter of Notification
Line D000B Natural Gas Pipeline Replacement Project**

Dear Mr. Monzel:

Please find attached a link to an electronic copy of a Letter of Notification that Duke Energy Ohio, Inc. has submitted to the Ohio Power Siting Board regarding the planned construction of an approximately 3.3-mile replacement of a natural gas pipeline. The Letter of Notification submittal is required in accordance with Chapter 4906 of the Ohio Administrative Code (OAC). The north-western terminus of the Project begins southeast of Duke Energy Ohio's natural gas distribution center at the Cincinnati's East End Facility property. The pipeline will run in a south-southeast direction and will be bound by U.S. 52 to the east and the Ohio River to the southwest. The replacement pipeline will terminate near, and northwest of, the confluences of the Little Miami and Ohio Rivers.

In accordance with OAC 4906-1-01 Appendix A, we are required to prepare this Letter of Notification for the Ohio Power Siting Board and in compliance with OAC 4906-11-01(D)(4), we are hereby providing you with an electronic copy.

Cordially,
Duke Energy Ohio, Inc.

Kelsey M. Pace
Lead Transmission Siting Lead

**LETTER OF NOTIFICATION FOR THE
LINE D000B NATURAL GAS PIPELINE REPLACEMENT PROJECT**

PUCO Case Number ¹⁷~~16~~-328-GA-BLN

Submitted pursuant to O.A.C. 4906-6

Duke Energy Ohio, Inc.

April 4, 2017



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CASE NO. 16-328-GA-BLN
LINE D000B NATURAL GAS PIPELINE REPLACEMENT
CINCINNATI, HAMILTON COUNTY, OHIO

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CINCINNATI, HAMILTON COUNTY, OHIO

This Letter of Notification (LON) has been prepared by Duke Energy Ohio, Inc., (Duke Energy Ohio) in accordance with the procedures set forth in Ohio Administrative Code (O.A.C.) Chapter 4906-6 Accelerated Certificate Application Requirements of the Rules and Regulations of the Ohio Power Siting Board (OPSB or Board).

4906-6-05 APPLICATION REQUIREMENTS

4906-06-05(B)(1)(a): Name of the Project and Applicant's Reference Number

Duke Energy Ohio is proposing to construct a natural gas pipeline identified as the Line D000B Pipeline Replacement Project (the Project) in Cincinnati's East End, Hamilton County, Ohio. The internal project reference number is 8075968.

4906-06-05(B)(1)(b): Brief Description of the Project

Duke Energy Ohio proposes to replace approximately 17,466 feet (3.31 miles) of existing single 20- and 24-inch spiral welded, coated steel, natural gas pipeline originally installed in 1948 with new 20- and 24-inch diameter, corrosion protected steel pipe. The pipeline easement is at maximum 50 feet in width, with up to another 20 to 50 feet of additional temporary workspace where required and available. Approximately 2.54 miles or 13,394 feet of the replacement pipeline is proposed to be co-located within the existing pipeline right-of-way (ROW), while the remaining 0.77 mile (4,072 feet) of replacement pipeline will be located within new D000B pipeline ROW. The entire length of the proposed new D000B pipeline ROW will be located in previously disturbed areas including existing road rights-of-way and the asphalt parking lots of Rivertowne Marina, Cameo Nightclub, and Cincinnati Interiors LTD. The new pipeline will have a normal

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operating pressure of approximately 200 pounds per square inch gage ("psig"). The north-western terminus of the Project begins southeast of Duke Energy Ohio's natural gas distribution center at the Cincinnati's East End Facility property. The pipeline will run in a south-southeast direction and will be bound by U.S. 52 to the east and the Ohio River to the southwest. The replacement pipeline will terminate near, and northwest of, the confluences of the Little Miami and Ohio Rivers. Access to the replacement pipeline workspace will be accomplished through the use of existing public and private roads, and the Duke Energy Ohio ROW. The existing pipeline is proposed to be abandoned in-place once the Project is in operation.

4906-06-05(B)(1)(c): Why the Project Meets the Requirements for a Letter of Notification

The project qualifies as a Letter of Notification filing because it meets the criteria of O.A.C. Rule 4906-1-01, Appendix B, that provides for (1) new construction, extension, relocation, upgrade, or replacement (except with a like facility) of gas pipelines or pipeline segments (b) greater than one mile in length but not greater than five miles in length. This project is a replacement project, involving the installation of a 20- and 24-inch diameter pipe having an approximate length of 3.31 miles.

4906-06-05(B)(2): Statement of Need for the Proposed Facility

The Project is needed to replace the aging single 20- and 24-inch diameter, coated steel, natural gas pipeline that was constructed in 1948, which supplies various distribution pipelines and subsequent end users in the Project area. The Project is

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designed to assist in continuing to meet supply and demand, while ultimately maintaining the safety and integrity of the pipeline system.

4906-06-05(B)(3): Location of the Project

The location of this Project is illustrated on Figures 1 and 2 in Attachment 1. Figure 1 shows the general Project vicinity illustrated on a U.S. Geological Survey (USGS) quadrangle map. Figures 2 and 3 illustrate the proposed replacement pipeline and the existing pipeline that is proposed to be abandoned in-place overlain on an aerial base map.

4906-06-05(B)(4): Alternatives Considered

As stated in Section 4906-06-05(B)(1)(b), above, Duke Energy Ohio proposes to replace approximately 17,466 feet (3.31 miles) of existing single 20- and 24-inch, coated steel, spiral welded, natural gas pipeline with new 20- and 24-inch diameter, corrosion protected, steel pipe. Given that the project's purpose is to replace an existing pipeline, Duke Energy Ohio's primary siting objective was to locate the proposed replacement pipeline within the existing pipeline easement, to the extent practical. As a result of land use changes along the existing pipeline easement since the original pipeline was installed, and to further reduce potential land-use impacts of the Project, Duke Energy Ohio proposes to deviate from the existing easement at two separate locations as shown on Figures 2 and 3.

The first proposed deviation from the existing pipeline easement begins at the intersection of U.S. 52 and Wilmer Avenue and continues south-southeast to the

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intersection of Gassaway and Anchorage Roads. The proposed replacement pipeline is planned to be installed within U.S. 52 and Gassaway Road ROW as to avoid interfering with continued operations at the Martin Marietta Materials aggregate mining operation at the Kellogg Avenue Yard and the Peddlers Flea Market on Anchorage Road.

The second proposed deviation from the existing pipeline easement begins at the intersection of U.S. 52 and Anchorage Road and continues south to a location approximately 250 feet north of where the existing easement crosses Stites Road. The proposed replacement pipeline is planned to be installed within a new easement, offset 15 feet to the west of U.S. 52 road ROW, so as to avoid interfering with operations at the Cameo night club building and the adjoining swimming pool. The replacement pipeline will parallel the west side of U.S. 52 for approximately 1,100 feet in a south-southeast direction. At the Rivertowne Marina driveway, the replacement pipeline begins paralleling the west side of the driveway in a southerly direction for approximately 360 feet, and then continues west-southwest paralleling the north side of the driveway for an additional approximately 470 feet, before returning to the existing D000B easement. This change will serve to further minimize potential construction impacts at the Rivertowne Marina.

4906-06-05(B)(5): Description of Public Information Program

All affected property owners were contacted in October 2016 so that Company personnel could brief them on the Project. In addition, the Company had numerous individual contacts with the few property owners from whom new easements were necessary.

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Within seven days following the filing of this Letter of Notification, affected property owners and tenants will be notified, as required by O.A.C. 4906-6-08(B). In addition, the Company is holding an informational meeting in late April 2017, in order to ensure that neighbors are fully informed about the Project and to allow them to ask any questions they may have.

4906-06-05(B)(6): Anticipated Construction Schedule and Proposed In-Service Date

Construction is anticipated to begin on May 8, 2017. The Project is anticipated to be completed and in-service by October 7, 2017.

4906-06-05(B)(7): Project Area Map with Aerial Image

Project area maps with an aerial image at 1:7,200 scale, showing roads and major watercourses, are included as Figures 2 and 3 in Attachment 1.

4906-06-05(B)(8): Property Owner List

A list of the affected properties for which Duke Energy Ohio has obtained easements, options, and/or land use agreements is given in Attachment 2. Easements have been obtained from all affected property owners.

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4906-06-05(B)(9): Technical Features

4906-06-05(B)(9)(a): Operating Characteristics, Required Structures, and Right-of-Way and/or Land Requirements

The following information summarizes the operating characteristics and construction specifications for the proposed replacement 20- and 24-inch diameter pipeline:

- ***Pipe Material:*** 20-inch diameter ERW steel, X60, and 24-inch diameter ERW steel, X60
- ***Normal Operating Pressure:*** 200 psi
- ***Pipe Wall Thickness and Yield Strength:*** 0.375 inch thickness with a yield strength of 60,000 psi
- ***Coating Type:*** Externally coated with 14-16 Mils of Fusion Bonded Epoxy (FBE)
- ***Cathodic Protection:*** Rectifiers
- ***Structures:*** No additional structures will be required for the new pipeline.
- ***ROW and/or Land Requirement:*** The pipeline easement is at maximum 50 feet in width, with up to another 20 to 50 feet of additional temporary workspace where required. All additional workspaces were considered and evaluated for ecological and cultural resources.

4906-06-05(B)(9)(b): Electric and Magnetic Fields

This Project involves the construction of a natural gas pipeline; therefore, this section is not applicable.

4906-06-05(B)(9)(c): Estimated Capital Cost of the Project

The capital cost of this Project is estimated to be approximately \$11,000,000.

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4906-06-05(B)(10): Social and Ecological Impacts of the Project

4906-06-05(B)(10)(a): Land Use

The proposed Project is located in Cincinnati's East End, southeast Hamilton County, Ohio. Historically a manufacturing district, current land use in the vicinity of the proposed project varies considerably and includes Schmidt Sports Complex and the Turkey Ridge Recreational Area, the Ohio River trail, Riverview East Academy School, a variety of commercial and industrial businesses along U.S. 52 including Kinder Morgan Queen City Terminal and Martin Marietta Materials aggregate mining operation at the Kellogg Avenue Yard, Kellogg Avenue Park, and several marinas near the southern terminus of the Project. Seven (7) single-family residences and one (1) multi-family residence are located within 100 feet of the proposed pipeline replacement centerline. Four (4) of the single-family residences are located on the north side of U.S. 52, near its intersection with Tennyson Street, while the remaining three (3) residences are located near the intersection of Gassaway and Anchorage Roads. The one (1) multi-family residence is located south-southwest of the intersection of U.S. 52 and Wilmer Avenue. No new residences are located within 100 feet of the two proposed pipeline replacement route deviations discussed in the Alternatives Considered section (4906-06-05(B)(4)) of this Letter of Notification. Forested land cover along the Project length is generally limited to the fragmented woodlot between Schmidt Sports Complex and the Turkey Ridge Recreational Area, and the forested tract at the south-eastern end of the Project near the confluence of the Little Miami and Ohio Rivers.

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4906-06-05(B)(10)(b): Agricultural Land

The proposed Project does not cross any land that is currently used for agricultural purposes and is not located within any Agricultural District lands as defined by Chapter 929 of the Ohio Revised Code.

4906-06-05(B)(10)(c): Archeological and Cultural Resources

On June 1-3 and July 18-20, 2016, Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) conducted a Phase I archaeological survey of the Project. The Phase I report is provided under separate cover. The Area of Potential Effect (APE) encompasses an area that is approximately 3.4 miles long and 100 feet wide, totaling approximately 41 acres in size. Data was compiled for resources identified pursuant to evaluating them according to their National Register of Historic Places (NRHP) eligibility status. Field investigations included visual inspection of the APE, shovel test probes, and backhoe trenching to test portions of the project area that were determined to have a high potential for intact buried historic archaeological sites based on archival research. A total of three historic archaeological sites were identified as a result of this Phase I survey – 33Ha860, 33Ha861, and 33Ha866. Specific site locations are given in the Phase I Report and are not provided in the following discussion.

Site 33Ha860 was identified in Humbert Avenue based on the 1929 Sanborn Fire Insurance Map as a Dance Pavilion. Based on the historic mapping, this site was not in existence for an extended period of time and was likely destroyed in the flood of 1937. Cultural material recovered from this site indicated that a wooden structure was once in

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this location that was constructed on concrete piers. Based on the limited amount of cultural material recovered and no cultural features encountered within the area tested, the portion of Site 33Ha860 within the proposed ROW is not recommended NRHP eligible. Portions of the site outside the ROW were not assessed. Duke Energy Ohio proposes to protect portions of Site 33Ha860 that are located outside of the proposed ROW. Construction impacts will be restricted to the proposed pipeline corridor which will be approximately 25 feet from the edge of Site 33Ha860. The project will not impact portions of the site located outside of the ROW. Due to the proximity of the proposed pipeline centerline to areas untested outside of the ROW, Site 33Ha860 will be protected by orange construction fencing along the edge of the proposed ROW, and silt fence and orange construction fence will be placed along the northern and southern edge of the proposed ROW beginning 15 meters (50 feet) west and terminating 15 meters (50 feet) east of the site boundary to protect Site 33Ha860. As such, no further work was recommended by Amec Foster Wheeler on Site 33Ha860.

Site 33Ha861 was located in a side lot along Humbert Avenue. Cultural materials recovered from this site included kitchen, architectural and personal refuse. Sanborn Fire Insurance Maps from 1904, 1917, 1922, 1929 and 1950 all indicate a domestic residence in this lot. In fact, archival research indicates a house was located on this lot before Sanborn Fire Insurance Maps were available. The cultural material recovered indicates that the dwelling was built and occupied by the late nineteenth century. Based on the results of Amec Foster Wheeler's Phase I survey and artifact analysis, Site 33Ha861 is the yard of a historic residence dating from the nineteenth century. The presence of a

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variety of historic cultural material coupled with historic research suggests that an African American family may have lived in this home initially but preliminary deed research indicates the house has changed hands many times over the years. Due to the depth that the artifacts were recovered and the high frequency of domestic debris recovered; truncated features may exist. Site 33Ha861 could not be assigned to a specific individual living at this house with the information at hand. Site 33Ha861 is recommended as potentially eligible for the NRHP. Additional Phase II work would be recommended on Site 33Ha861, if the site were not planned to be avoided and protected. The area surveyed within the boundary of Site 33Ha861, will be protected during construction. Construction impacts will be restricted to the proposed pipeline corridor which will be approximately 25 feet from the edge of Site 33Ha861. No ground disturbance, spoil piles, or the placement of construction equipment will occur outside of the proposed ROW within Humbert Avenue during construction. Also, during construction, silt fence and orange construction fence will be placed along the northern and southern edge of the proposed ROW beginning 15 meters (50 feet) west and terminating 15 meters (50 feet) east of the site boundary to protect Site 33Ha861.

Site 33Ha866 was also located along Humbert Avenue. Site 33Ha866 was identified on the 1929 Sanborn Fire Insurance Map as a Lunch Room west of Site 33Ha860 (the Dance Hall Pavilion). Based on the historic mapping, this site was not in existence for an extended period of time and was likely destroyed in the flood of 1937. Cultural material recovered from this site indicated that a wooden structure was once in this location that was likely constructed on concrete piers. Based on the limited amount of cultural

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material recovered and no cultural features encountered within the area tested, the portion of Site 33Ha866 within the proposed ROW is not recommended NRHP eligible. Site 33Ha866 is proposed to be protected outside of the proposed ROW. Construction impacts will be restricted to the proposed pipeline corridor which will be approximately 25 feet from the edge of Site 33Ha861. The proposed replacement pipeline route will not impact the site outside of the proposed ROW. Due to the proximity of the pipeline route to areas untested outside of the ROW, Site 33Ha866 will be protected by orange construction fencing along the edge of the proposed ROW, and silt fence and orange construction fence will be placed along the northern and southern edge of the proposed ROW beginning 15 meters (50 feet) west and terminating 15 meters (50 feet) east of the site boundary to protect Site 33Ha866. As such, no further work is recommended on Site 33Ha866. As such, no further work was recommended by Amec Foster Wheeler on Site 33Ha866.

The viewsheds of potential historic structures will not be permanently affected by this Project since the Project components will be underground and potential construction impacts will be temporary in nature. In addition, three architectural surveys (1988, 1989, and 2004) have been completed within the proposed Project area. As such, no architectural viewshed survey work was completed for the Project.

On September 7, 2016, the completed Ohio Historic Preservation Office (OHPO) Section 106 review form and the Phase I archaeological survey report were transmitted to the OHPO for review and concurrence that no additional archaeological investigations are required for the Project as proposed. A Project response letter, dated October 3,

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CINCINNATI, HAMILTON COUNTY, OHIO

2016, was received from the OHPO and is included as Attachment 4. The OHPO concurred with the findings of the Phase I report, dated August 25, 2016, and affirmed that the Project will not affect historic properties provided the recommended avoidance and protection measures are implemented with respect to site 33 HA 861. The OHPO stated that no further coordination is required unless the Project changes or additional archaeological remains are discovered during the course of the Project.

Following receipt of the OHPO response letter, minor adjustments were made to the proposed replacement pipeline centerline that resulted in the need to conduct additional archaeological survey on areas that were not previously included in the June and July 2016 surveys. The results of the additional archaeological survey will be provided to the OHPO and OPSB once it is received.

906-06-05(B)(10)(d): Local, State, and Federal Governmental Agencies That Have Requirements That Must be Met by the Project

The following governmental agencies have requirements that must be met at various times by this Project:

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**LINE D000B NATURAL GAS PIPELINE REPLACEMENT
 CINCINNATI, HAMILTON COUNTY, OHIO**

TABLE 1. GOVERNMENTAL AGENCIES THAT HAVE PROJECT APPLICABLE REQUIREMENTS, AUTHORIZATIONS OR PERMITS	
AGENCY	DOCUMENT TO BE SUBMITTED
U.S. Army Corps of Engineers – Huntington District	Jurisdictional Determination Request and Wetland & Waterbody Delineation Report
U.S. Fish & Wildlife Service	Rare, Threatened, and Endangered Species Consultation
Ohio Department of Natural Resources	Rare, Threatened, and Endangered Species Consultation
Ohio Historic Preservation Office	Section 106 Coordination
Ohio Environmental Protection Agency	NOI for General Construction Stormwater Permit
City of Cincinnati	Excavation and Fill and Floodplain Development Permit
	MSD Water Withdrawal and Discharge Authorization for Hydrostatic testing
	Stormwater Pollution Prevention Plan
	Phase I Environmental Site Assessment (ESA) (not required but recommended)

4906-06-05(B)(10)(e): Federal and State Designated Species

In May 2016, Civil & Environmental Consultants, Inc. (CEC), on behalf of Duke Energy Ohio, conducted a threatened and endangered species habitat assessment of the Project area for federally listed species known to occur within Hamilton County, Ohio. According to the USFWS's County Distribution List of Federally-Listed Threatened, Endangered, Proposed, and Candidate Species for Hamilton County, Ohio, the following species were identified as occurring, or potentially occurring in the Project area: the Indiana bat (*Myotis sodalis*, endangered), northern long-eared bat (*Myotis septentrionalis*, threatened), fanshell mussel (*Cyprogenia stegaria* (= *C. irrorata*), endangered), pink

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CINCINNATI, HAMILTON COUNTY, OHIO

mucket pearlymussel (*Lampsilis abrupta*, endangered), rayed bean mussel (*Villosa fabalis*, endangered), sheepnose mussel (*Plethobasus cyphus*, endangered), snuffbox mussel (*Epioblasma triquetra*, endangered), and the running buffalo clover (*Trifolium stoloniferum*, endangered).

In addition to reviewing the USFWS's County Distribution List, the ODNR Division of Wildlife's County Distribution List of State Listed Wildlife Species was consulted for Federally-listed endangered or threatened species as occurring, or potentially occurring, in Hamilton County. The ODNR's County Distribution List identified the Indiana bat, northern long-eared bat, the running buffalo clover, as well as the five mussel species that were noted by the USFWS. The ODNR also identified purple cat's paw mussel (*Epioblasma obliquata obliquata*, endangered), northern riffleshell mussel (*Epioblasma torulosa rangiana*, endangered), clubshell mussel (*Pleurobema clava*, endangered), and the rabbitsfoot mussel (*Quadrula cylindrica cylindrica*, threatened).

The Project area was evaluated by a team of two biologists from Civil & Environmental Consultants, Inc., on May 16, 18, and 19, 2016, to document existing vegetation communities, hydrologic conditions, and other habitat characteristics. Each type of habitat present within the Project area was qualitatively evaluated for its potential to be suitable habitat for the running buffalo clover, Indiana bat, northern long-eared bat, and the aforementioned mussel species. The habitat assessment revealed potentially suitable habitat for the running buffalo clover, Indiana bat, and the northern long-eared bat. Potentially suitable freshwater mussel habitat was not identified, based on the absence of streams and lakes within the Project area. The Threatened and Endangered

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Species Habitat Assessment Report and Running Buffalo Clover Report are included as Attachments 7 and 8, respectively.

Running Buffalo Clover

The running buffalo clover (RBC) habitat survey revealed approximately 5.06 acres or about 6 percent of the total Project area met the habitat considerations as potential RBC habitat. The remaining areas within the Project study corridor do not provide suitable habitat conditions for the RBC based on one or more of the following habitat considerations: extent of disturbance, solar exposure, soil saturation, and/or a dense understory. CEC subsequently conducted a RBC survey on the potential habitat that was identified in the Project area. No RBC individuals or populations were observed during the survey. The survey was conducted following standard methods and guidelines for endangered plant surveys, as approved by the USFWS, which included a species-specific survey within the potentially suitable habitat during the flowering period, using a known local population, to allow for positive identification of the species.

Indiana and Northern Long-Eared Bats

Living or dead trees with shedding or peeling bark or cavities may serve as roosting trees for the Indiana bat and/or northern long-eared bat. The field review that was completed by CEC identified 17 potential roost trees (PRT) for the Indiana and/or northern long-eared bats within the variable width limit of disturbance for the Project. Ten of those PRTs were located within pre-existing Duke Energy Ohio easements are

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were removed, between October 1 and March 31, as part of ordinary right-of-way maintenance. The other seven PRTs will not be removed.

Duke Energy Ohio submitted written requests for findings to the USFWS and the ODNR regarding any adverse effect to any federally listed, threatened, or endangered species in the Project area. The USFWS and ODNR response letters are included as Attachments 9 and 10, respectively. In a letter response, dated October 26, 2016, the USFWS identified the Indiana bat, northern long-eared bat, and the running buffalo clover as being within the range of the Project. The USFWS recommended that removal of any trees ≥ 3 inches diameter breast height (dbh) only occur between October 1 and March 31. Seasonal clearing is recommended to avoid adverse effects to Indiana bats and northern long-eared bats. The USFWS affirmed that no significant impacts are expected to the running buffalo clover as a result of the Project, based on the findings of the presence/absence survey that was conducted within the areas of suitable habitat within the Project area.

The ODNR also responded with records and comments in a letter, dated December 15, 2016. The ODNR Natural Heritage Database identified 11 records within a one-mile radius of the Project area. None of these 11 records are anticipated to be adversely affected by the Project. In addition to these 11 records, the ODNR identified the Indiana bat as occurring within the range of the Project. The ODNR reported that if suitable habitat occurs within the Project area and trees must be cut, the ODNR recommends the cutting occur between October 1 and March 31. The ODNR also reported that the Project is within the range of several other protected species. However, based on the project

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location, absence of in-water work in streams, and the types of habitat that are crossed by the Project, the Project is not likely to impact these species.

4906-06-05(B)(10)(f): Areas of Ecological Concern

There are no national and state forests or parks, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, refuges, management areas, and sanctuaries in the Project area. The Project crosses three City of Cincinnati-owned parks including Schmidt Sports Complex, Turkey Ridge Recreation Area, and Kellogg Recreation Area. The proposed replacement pipeline is located within the existing Duke Energy Ohio easement at each of these three locations. The full extent of the Project area is located within the Federal Emergency Management Agency (FEMA) 100-year floodplain.

In May 2016, CEC conducted a wetland and waterbody delineation and assessment within a 200-foot wide study corridor for the Project. Six wetlands within the study area, totaling approximately 3.27 acres, were identified and delineated. These six wetlands varied considerably in quality and consisted of two different vegetation community types: emergent and forested (Attachment 5). No streams or open water aquatic resources were identified within the study corridor. Construction of the Project is proposed to temporarily impact the emergent portion of Wetland 2, totaling approximately 0.07 acre. The remaining five wetlands are proposed to be avoided by the project through limiting the Project workspace at the south-eastern end of the Project route.

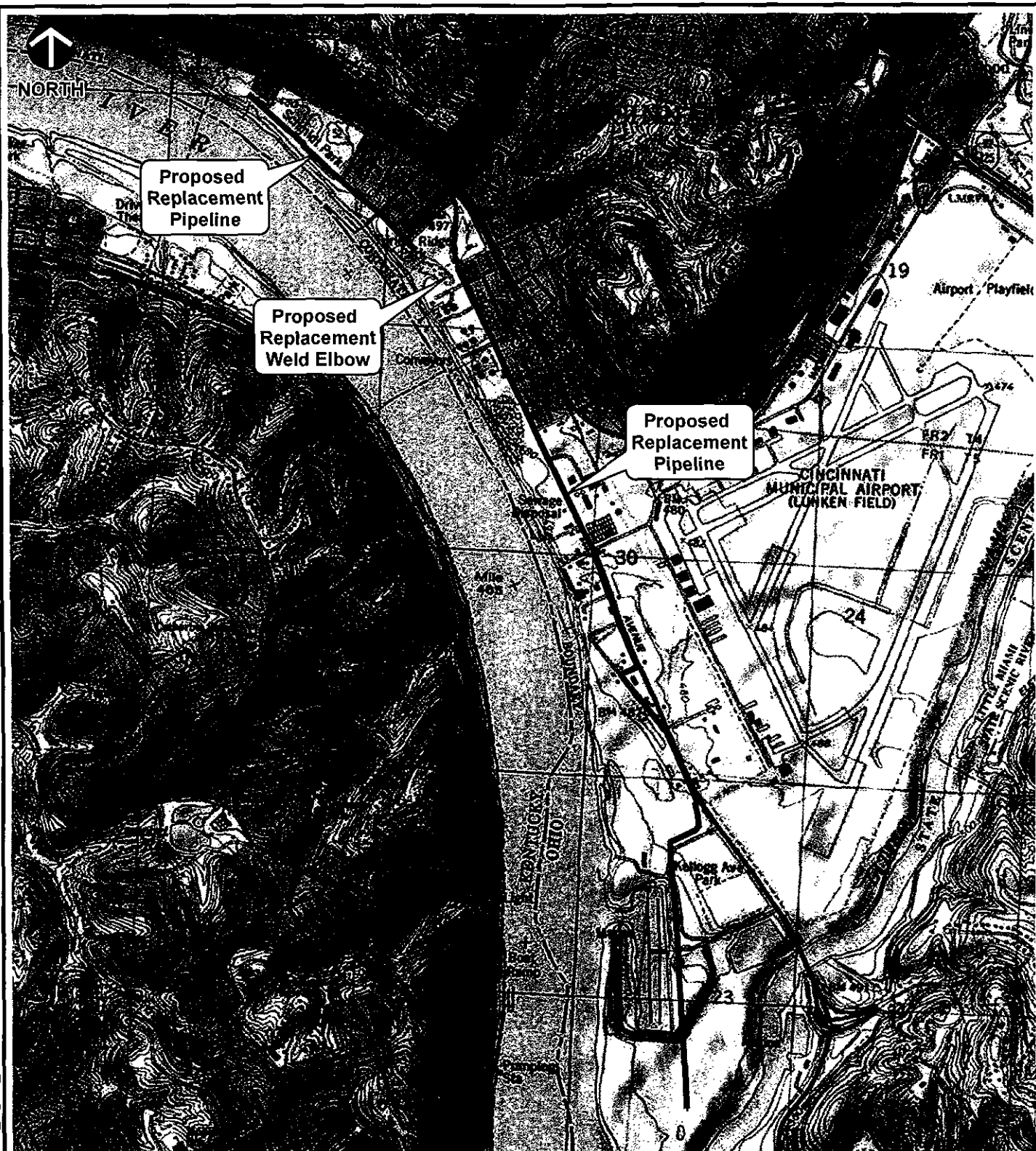
CASE NO. ¹⁷~~16~~-328-GA-BLN
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CINCINNATI, HAMILTON COUNTY, OHIO

**4906-06-05(B)(10)(g): Any Unusual Conditions Resulting in Significant Environmental,
Social, Health, or Safety Impacts**

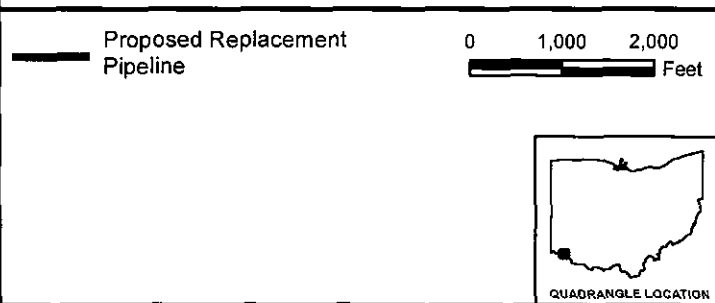
A Phase I Environmental Site Assessment (ESA) was completed for the Project in September 2016. The report findings are reflective of the historic and current land uses in this urban area. The report indicated that there are no known unusual conditions or circumstances associated with this Project that will result in significant environmental, social, health, or safety impacts.

ATTACHMENT 1

FIGURES

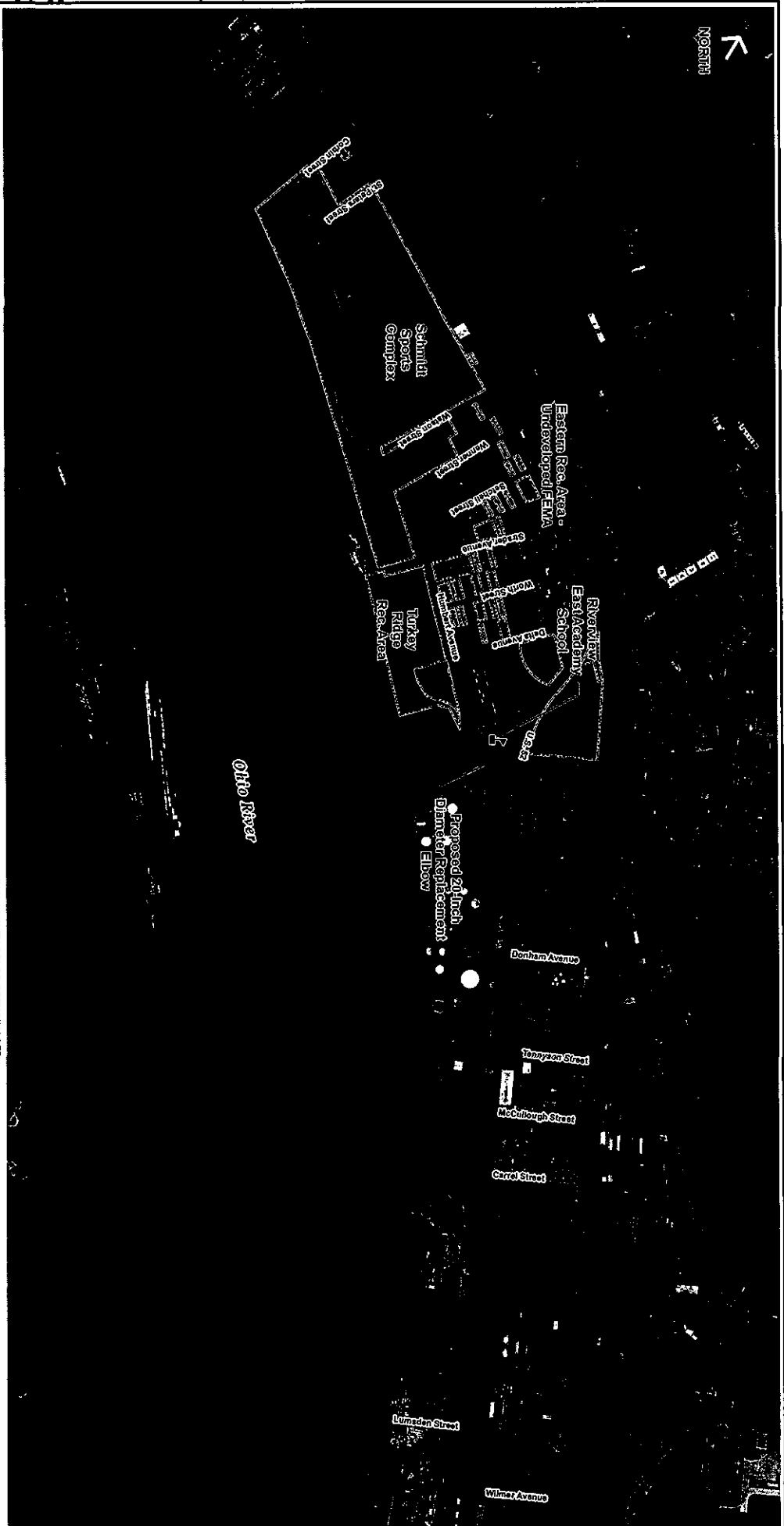


SOURCE: PORTION OF THE USGS 7.5-MINUTE SERIES TOPOGRAPHIC QUADRANGLE MAP OF NEWPORT, KENTUCKY-OHIO - 1984.

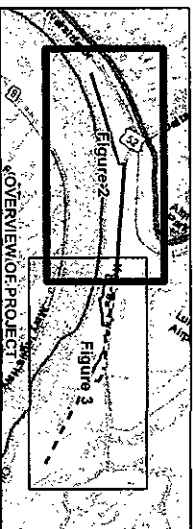


DUKE ENERGY
LINE D000B PIPELINE REPLACEMENT PROJECT
CINCINNATI, HAMILTON COUNTY, OHIO

FIGURE 1:
PROJECT LOCATION MAP

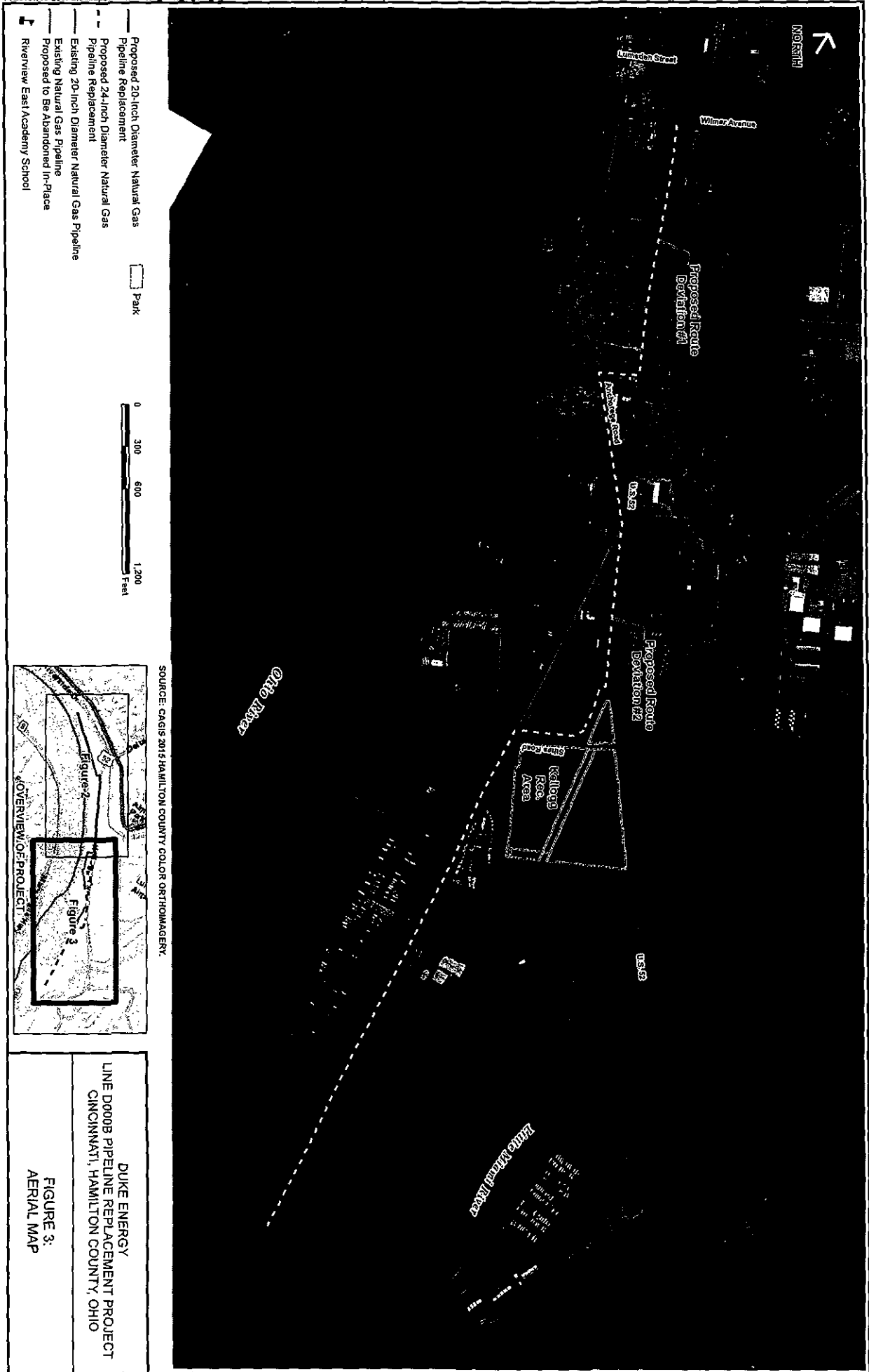


SOURCE: CAGIS 2015 HAMILTON COUNTY COLOR ORTHOIMAGERY.



DUKE ENERGY
LINE D0008 PIPELINE REPLACEMENT PROJECT
CINCINNATI, HAMILTON COUNTY, OHIO

FIGURE 2:
AERIAL MAP



ATTACHMENT 2

LANDOWNERS OF PERMANENT AND TEMPORARY EASEMENTS

LANDOWNERS OF PERMANENT & TEMPORARY EASEMENTS

Parcel ID	Owner	Owner Addresses		
		Physical Address	Mailing Address	
001100030001	MAN LLC	2057 BEECHMONT AVE	2057 BEECHMONT AVE	CINCINNATI OH 45230
001200020030	SMM INVESTMENTS LLC	3504 NINE MILE RD	3504 NINE MILE RD	CINCINNATI OH 45255
001200020034	KELLOGG PROPERTIES	4505 KELLOGG AVE	4505 KELLOGG AVE	CINCINNATI OH 45226
001200020036	KANE PAUL W TR	602 MAIN ST	PO BOX 8040	FORT WAYNE IN 46898
001200040002	UNITED DAIRY FARMERS INC	3955 MONTGOMERY RD	3955 MONTGOMERY RD	CINCINNATI OH 45212
001200040007	BILTER PROPERTIES LLC	4343 KELLOGG AVE	4343 KELLOGG AVE	CINCINNATI OH 45226
001200040008	BILTER PROPERTIES LLC	4343 KELLOGG AVE	4343 KELLOGG AVE	CINCINNATI OH 45226
001200040013	GEORGETON PETER T	6591 KENTUCKY VIEW	6591 KENTUCKY VIEW	CINCINNATI OH 45230
001200040015	STEFANI GREGORY DANIEL	5381 WOOSTER PIKE	5381 WOOSTER PIKE	CINCINNATI OH 45226
001200040023	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST	CINCINNATI OH 452025704
001200040029	BILTER PROPERTIES LLC	4343 KELLOGG AVE	4343 KELLOGG AVE	CINCINNATI OH 45226
001200040032	GEORGETON PETER T	6591 KENTUCKY VIEW	6591 KENTUCKY VIEW	CINCINNATI OH 45230
001300010103	GOTHAM INC	3806 KELLOGG AVE	PO BOX 4372	HOUSTON TX 77210
001300050017	SCHNEIDER BYRON J & HELEN	2971 OLD LINE LN	2971 OLD LINE LN	HAMILTON OH 45011
001300050018	SCHNEIDER BYRON J & HELEN	2971 OLD LINE LN	2971 OLD LINE LN	HAMILTON OH 45011
001300050019	SCHNEIDER BYRON J & HELEN	2971 OLD LINE LN	2971 OLD LINE LN	HAMILTON OH 45011
001300050045	ELB INC	4167 KELLOGG AVE	4167 KELLOGG AVE	CINCINNATI OH 45226
001300050046	ELB INC	4167 KELLOGG AVE	4167 KELLOGG AVE	CINCINNATI OH 45226
001300050047	4241 KELLOGG AVE LLC	9242 WEST RD	9242 WEST RD	CLEVELS OH 450029722
001300050049	BOARD OF HAMILTON COUNTY COMMS	1600 GEST ST	1600 GEST ST	CINCINNATI OH 45204
001300050050	BOARD OF HAMILTON COUNTY COMMS	1600 GEST ST	1600 GEST ST	CINCINNATI OH 45204
001300050051	BOARD OF HAMILTON COUNTY COMMS	1600 GEST ST	1600 GEST ST	CINCINNATI OH 45204
001300050052	GUINN PRENTICE L	167 JUDD RD	167 JUDD RD	AMELIA OH 45102
001300050068	BOARD OF HAMILTON COUNTY COMMS	1600 GEST ST	1600 GEST ST	CINCINNATI OH 45204
001300050071	ERNST JEROME L	4167 KELLOGG AVE	4167 KELLOGG AVE	CINCINNATI OH 45226
001200020038	MARTIN MARIETTA MATERIALS INC	9277 CENTRE POINTE DR	PO BOX 8040	FORT WAYNE IN 46898
001100030005	ANCHORAGE ROAD PROPERTIES LLC	6178 WOODLARK DR	6178 WOODLARK DR	CINCINNATI OH 45230
001100030011	HAWKSTONE ASSOCIATES INC	9171 DRY FORK RD	9171 DRY FORK RD	HARRISON OH 45030
001200020002	KRONE PAUL W TR	602 MAIN ST	PO BOX 8040	FORT WAYNE IN 46898
001200020003	KRONE PAUL W TR	602 MAIN ST	PO BOX 8040	FORT WAYNE IN 46898
001200020004	KRONE PAUL W TR	602 MAIN ST	PO BOX 8040	FORT WAYNE IN 46898
001300010013	GOTHAM INC	3806 KELLOGG AVE	PO BOX 4372	HOUSTON TX 77210
001300010014	GOTHAM INC	3806 KELLOGG AVE	PO BOX 4372	HOUSTON TX 77210
001300010015	GOTHAM INC	3806 KELLOGG AVE	PO BOX 4372	HOUSTON TX 77210
001300010016	GOTHAM INC	3806 KELLOGG AVE	PO BOX 4372	HOUSTON TX 77210

LANDOWNERS OF PERMANENT & TEMPORARY EASEMENTS

Parcel ID	Owner	Owner Addresses		
		Physical Address	Mailing Address	
002900010030	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002900020024	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI OH 45226	PO BOX 4372
002900020025	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI OH 45226	PO BOX 4372
002900020026	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI OH 45226	PO BOX 4372
002900020027	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI OH 45226	PO BOX 4372
002900020028	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI OH 45226	PO BOX 4372
002900020029	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI OH 45226	PO BOX 4372
002900020030	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI OH 45226	PO BOX 4372
002900020031	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI OH 45226	PO BOX 4372
002900020032	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI OH 45226	PO BOX 4372
002900020033	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI OH 45226	PO BOX 4372
002900020034	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI OH 45226	PO BOX 4372
002900020117	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI OH 45226	PO BOX 4372
002900030003	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	CINCINNATI OH 45226	PO BOX 4372
002800010002	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	HOUSTON TX 77210
002800010003	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010004	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010007	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010008	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010009	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010010	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010011	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010012	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010013	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010014	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010061	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010062	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010063	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010064	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010065	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010066	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010067	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010068	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010069	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704
002800010070	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704	CINCINNATI OH 45202-5704

LANDOWNERS OF PERMANENT & TEMPORARY EASEMENTS

Parcel ID	Owner	Owner Addresses	
		Physical Address	Mailing Address
002800010071	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704
002800010121	OHIO RIVER LAUNCH CLUB	7609 TRAIL WIND DR	801 PLUM ST
002800010122	CINCINNATI CITY OF	801 PLUM ST	449 FAIRVIEW PL
002800010156	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704
002800020035	BYWATER DEVELOPMENT LP	200 WALNUT HILL AVE	801 PLUM ST
003100010001	DUKE ENERGY OHIO INC C/O TAX DEPARTMENT	550 TRYON ST	200 WALNUT HILL AVE
003100010002	DUKE ENERGY OHIO INC C/O TAX DEPARTMENT	550 TRYON ST	HILLSBORO TX 76645
002800020163	CINCINNATI CITY OF	801 PLUM ST	CHARLOTTE NC 28201
003100010100	DUKE ENERGY OHIO INC C/O TAX DEPARTMENT	550 TRYON ST	CHARLOTTE NC 28201
002800030184	CINCINNATI BOARD OF EDUCATION	PO BOX 5384	CHARLOTTE NC 28201
002800030201	CINCINNATI BOARD OF EDUCATION	PO BOX 5384	CINCINNATI OH 45201-5384
002800030237	CINCINNATI CITY OF	801 PLUM ST	PO BOX 5384
002800030238	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45201-5384
000700010002	TO WNE PROPERTIES ASSET MANAGEMENT COMPANY	1055 ST PAUL PL	801 PLUM ST
003100010103	CINCINNATI CITY OF	801 PLUM ST	CINCINNATI OH 45202-5704
003100020004	CINCINNATI CITY OF	801 PLUM ST	1055 ST PAUL PL
003100020056	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
002800010005	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
003100010016	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
002800010001	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
003100020026	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
003100020057	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
003100020048	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
003100020052	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
003100020003	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
003100020050	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
003100020049	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
003100020054	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
003100020051	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
003100020027	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
002900020119	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	801 PLUM ST
003100020001	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
003100020028	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
002900020001	LIQUID TRANSFER TERMINALS OHIO INC	6001-21 ARGYLE FOREST BLV	801 PLUM ST
002800030255	CINCINNATI BOARD OF EDUCATION	PO BOX 5384	6001-21 ARGYLE FOREST BLV
			CINCINNATI OH 45201-5384

LANDOWNERS OF PERMANENT & TEMPORARY EASEMENTS

Parcel ID	Owner	Owner Addresses	
		Physical Address	Mailing Address
0028000300256	CINCINNATI BOARD OF EDUCATION	PO BOX 5384	PO BOX 5384
0007000100003	TOWNE PROPERTIES ASSET MANAGEMENT COMPANY	1055 ST PAUL PL	1055 ST PAUL PL
0007000100004	TOWNE PROPERTIES ASSET MANAGEMENT COMPANY	1055 ST PAUL PL	1055 ST PAUL PL
0011000300066	4601 KELLOGG LLC	4601 KELLOGG AVE	4601 KELLOGG AVE
0011000300017	WOODSEDOE PROPERTIES II LLC	1139 FEHL LN	1139 FEHL LN
0011000300018	4601 KELLOGG LLC	4581 KELLOGG AVE	4581 KELLOGG AVE
0011000300019	KELLOGG PROPERTIES LLC	420 UNITED CT	420 UNITED CT
0011000300021	BECK ROBERT R & JUDITH R	4213 WEST FORK RD	4213 WEST FORK RD
0011000300022	KELLOGG GROUP LLC	4601 KELLOGG AVE	4601 KELLOGG AVE
0011000300023	KELLOGG GROUP LLC	4601 KELLOGG AVE	4601 KELLOGG AVE
0012000200001	MARTIN MARIETTA MATERIALS	9277 CENTRE POINTE DR	PO BOX 8040
0012000400038	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
0029000300007	GOTHAM INC	3806 KELLOGG AVE	PO BOX 4372
0029000300012	QUEEN CITY TERMINALS INC	3806 KELLOGG AVE	PO BOX 4372
0031000200106	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
0013000500048	4241 KELLOGG AVE LLC	9242 WEST RD	9242 WEST RD
0031000100022	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
0031000100018	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
0028000100006	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
0031000100021	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
0031000200002	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
0031000200053	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
0011000300013	HAWKSTONE ASSOCIATES INC	9171 DRY FORK RD	9171 DRY FORK RD
0011000300020	HAWKSTONE ASSOCIATES INC	9171 DRY FORK RD	9171 DRY FORK RD
0031000100015	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
0031000100020	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST
0031000100017	CINCINNATI CITY OF	801 PLUM ST	801 PLUM ST

ATTACHMENT 3

LANDOWNER NOTIFICATION LETTER



Duke Energy
139 East Fourth Street
Cincinnati, OH 45202

April XX, 2017

<Mailing Name>
<Mailing Address 1>
<Mailing Address 2>
<Mailing City>, <Mailing State> < Zip >

Important information on a Duke Energy Ohio natural gas distribution line project in your area: East End Replacement Project

Dear Property Owner or Tenant:

Duke Energy is investing in a safe and reliable energy future for our 400,000 natural gas customers in Ohio. As part of our modernization efforts, we have proposed a natural gas replacement pipeline to increase the reliability of the natural gas delivery system in southwestern Ohio.

Natural gas has been available in the Cincinnati area since 1837, when our predecessor company, Cincinnati Gas Light and Coke Company, went into business to illuminate the downtown streets. Statistics show that natural gas pipelines are the safest mode of energy transportation; providing you with safe, reliable natural gas is a responsibility we at Duke Energy take very seriously. This pipeline will help ensure natural gas reliability for decades to come in Hamilton County.

Project details

The East End Replacement Project runs south-southeast, between U.S. Route 52 and the Ohio River, starting near Corbin Street and ending near the confluence of the Little Miami and Ohio Rivers. Duke Energy Ohio is proposing to replace approximately 18,200 feet of an existing natural gas main along this route, in order to mitigate risks associated with the age of the pipeline and to proactively increase the safety and reliability of the system. The existing natural gas main is a 20- and 24-inch spiral-welded, coated steel main that was installed in 1948. It will be replaced with new, corrosion-protected steel main of the same sizes, with a normal operating pressure of approximately 200 pounds per square inch gage. Approximately 13,303 feet of the replacement line is proposed to be located within the existing pipeline right of way. The remaining 3,857 feet is expected to be within existing roadway easement or new pipeline right of way. A map of the replacement project area is included with this letter.

A Letter of Notification to construct, operate, and maintain this facility is now pending before the Ohio Power Siting Board (OPSB) in Columbus, Ohio. Interested persons may participate in the process by filing comments in the docket, or by seeking permission to formally intervene in the case. You also may request notification of the filing documents in the case, by signing up with

the OPSB for electronic notice of filings, or by sending a letter to the OPSB to indicate your interest. The case may be found on the OPSB's website, identified as Case No. 17-328-GA-BLN. The OPSB can be reached by email at: contactOPSB@puc.state.oh.us, by phone, 866.270.6772, or by mail addressed to: The Ohio Power Siting Board, 180 East Broad Street, Columbus OH 43215.

A copy of the application is available for public inspection at the main office of Duke Energy Ohio, 139 E. Fourth Street, Cincinnati, Ohio, and at the offices of the OPSB, 180 East Broad Street, Columbus, Ohio 43215. It also is available on the Duke Energy Ohio website: www.duke-energy.com/eastendreplacement, and on the Ohio Power Siting Board's website: www.opsb.ohio.gov.

We will be holding an information session on this project. It will be held:

Wednesday, April 26, 2017

Duke Energy Operations Center, 4612 Kellogg Ave, Cincinnati, OH 45226

Information session will go from 6 p.m. - 7 p.m.

The format of this information session will be a presentation about the project with time for questions following the presentation. We look forward to seeing you there.

Please forward this information to any tenants that may be occupying properties referenced in this notification.

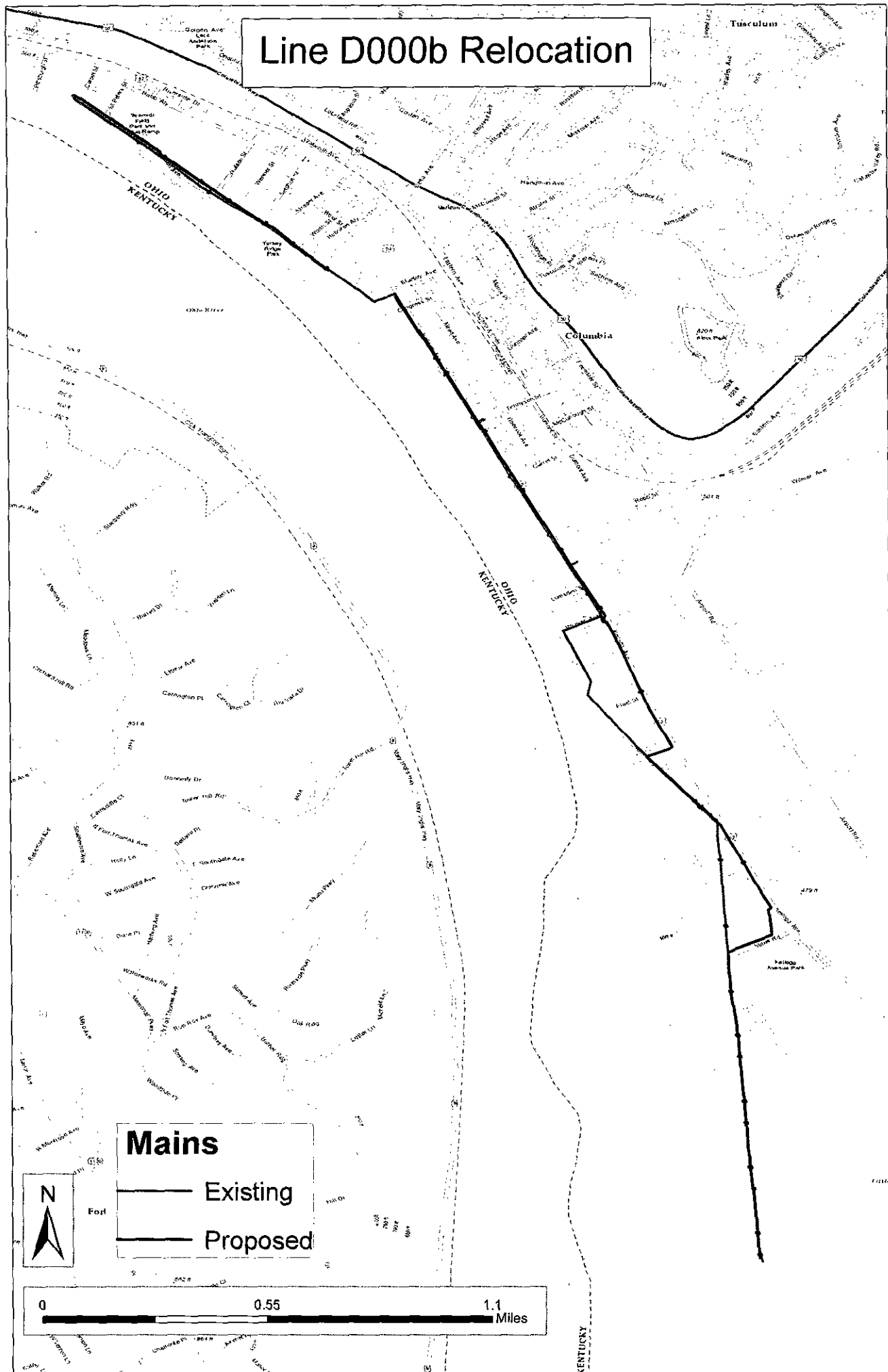
Thank you for working with us as we move forward with this important replacement project to meet your energy needs.

Sincerely,

Kelsey Pace

Duke Energy Ohio Project Engineer

Line D000b Relocation



ATTACHMENT 4

**OHIO HISTORIC PRESERVATION OFFICE (OHPO)
AGENCY COORDINATION RESPONSE LETTER**



In reply refer to
2016-HAM-35242-2

October 3, 2016

Henry S. McKelway, PhD
Amcc Foster Wheeler
690 Commonwealth Center
11003 Bluegrass Parkway
Louisville, KY 40299

Dear Dr. McKelway:

RE: Duke Energy D000B Line Replacement, Cincinnati, Hamilton County, Ohio

This is in response to the receipt, on September 8, 2016, of *Phase I Archaeological Survey for the Proposed Line D000B Replacement Project, City of Cincinnati, Hamilton County, Ohio*. The comments of the State Historic Preservation Office are submitted in accordance with the provisions of Section 106 of the National Historic Preservation Act of 1966, as amended.

Subsurface testing, surface collection and intensive visual inspection of the project area resulted in the identification of three previously unrecorded archaeological sites. Site 33 HA 860 is a small artifact scatter associated with a 19th/20th century dancehall. Site 33 HA 866 is a small artifact scatter associated with a 19th/20th century lunch counter. The portions of these sites in the construction corridor appear to have limited potential for in situ artifacts or archaeological features. Site 33 HA 861 is a 19th/20th century artifact scatter. I concur with the opinion that additional testing or avoidance is needed at 33 HA 861. Provided that site 33 HA 861 is avoided and protected, I concur with the opinion that this project will not affect historic properties. No further coordination is required unless the project changes or additional archaeological remains are discovered during the course of the project. In such a situation, this office should be contacted as per 36 CFR 800.13.

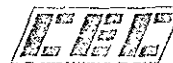
If you have any questions, please contact me at (614) 298-2000, or by email at nyoung@ohiohistory.org.

Sincerely,

Nathan J. Young, Project Reviews Manager
Resource Protection and Review

ATTACHMENT 5

WETLAND AND WATERBODY DELINATION REPORT



Civil & Environmental Consultants, Inc.

August 25, 2016

Mr. Steve Lane, CPESC, AICP, PMP
Senior Environmental Scientist/Planner
Duke Energy Corporation
139 East Fourth Street, Room EM740
Cincinnati, OH 45202

Dear Steve:

Subject: Wetland and Waterbody Delineation Report
Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230

Civil & Environmental Consultants, Inc. (CEC) is pleased to present the attached wetland and waterbody delineation report for the Duke Energy Corporation (Duke Energy) Line D000B Natural Gas Pipeline Replacement Project, located in Cincinnati, Hamilton County, Ohio. CEC's services were provided in accordance with the Master Consulting Services Agreement, effective June 1, 2015, between Duke Energy and CEC, and our revised proposal dated February 1, 2016. We appreciate the opportunity to be of service to Duke Energy on this project. Please call us if you have any questions regarding the attached report.

Sincerely,

CIVIL & ENVIRONMENTAL CONSULTANTS, INC.

Dustin M. Giesler
Staff Scientist

Joseph A. Van Skaik
Project Manager

Attachment – Wetland and Waterbody Delineation Report

P:\2015\153-230\Final Documents\WWD\153-230 FINAL Line D000B WWD Report.docx

WETLAND AND WATERBODY DELINEATION REPORT

**LINE D000B PIPELINE REPLACEMENT PROJECT
CINCINNATI, HAMILTON COUNTY, OHIO**

**PREPARED FOR:
DUKE ENERGY CORPORATION
139 EAST FOURTH STREET
CINCINNATI, OHIO 45202**

**PREPARED BY:
CIVIL & ENVIRONMENTAL CONSULTANTS, INC.
CINCINNATI, OHIO**

CEC Project 153-230

August 25, 2016



Civil & Environmental Consultants, Inc.

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1.0 INTRODUCTION

1.1 GENERAL INFORMATION

This report presents the findings of a wetland and waterbody delineation conducted by Civil & Environmental Consultants, Inc. (CEC) for the Duke Energy Corporation (Duke Energy) within the Line D000B Pipeline Replacement study corridor, located in Cincinnati's East End, Hamilton County, Ohio. CEC understands that Duke is proposing to replace approximately 3.45 miles (18,200 feet) of a single existing 20- and 24-inch spiral welded bare steel high pressure natural gas pipeline with a new 24-inch corrosion protected steel pipe. The variable width Project study corridor, averaging 200-foot wide, is approximately 3.45 miles in length and totals approximately 84.2 acres and was extended beyond the pipeline easement and associated workspace. The pipeline easement is at maximum 50 feet in width, with another 20 to 50 feet of additional temporary workspace where available.

Civil & Environmental Consultants, Inc. (CEC) conducted the field reconnaissance portion of the jurisdictional waters delineation on May 16, 18 and 19, 2016.

1.2 ROUTE DESCRIPTION

The northern terminus of the project begins southeast of Duke Energy's natural gas distribution center in the East End, and is bound by Riverside Drive to the north, Schmidt Park and the Ohio River Trail to the east and southeast, and the Ohio River to the south. The replacement pipeline route proceeds in a southeast direction across Schmidt Park, following Duke's existing ROW in the vicinity of Humbert Avenue and the Ohio River Trail. The route leaves Schmidt Park beginning near the southern terminus of Wenner Street, and continues paralleling the Ohio River Trail for approximately 475 feet. Near the intersection of Strader and Humbert Streets, the replacement pipeline route departs from the Ohio River Trail and is collocated with Humbert Street for approximately 630 feet, until the convergence of Humbert Street and Delta Avenue. The route continues in a southeast direction, crossing onto Riverview East Academy property, a Cincinnati Public School, and then subsequently crosses and parallels the Ohio River Trail for

approximately 470 feet before arriving at the western terminus of Congress Avenue. From Congress Avenue, the route follows the south side of the road in an east-northeast direction for approximately 200 feet to the intersection of Congress and Kellogg Avenues. The replacement pipeline then turns south-southeast and is collocated with the west side of Kellogg Avenue for approximately 1.2 miles (6,270 feet). Approximately 150 feet south of the Martin Marietta Materials Kellogg Yard property, the replacement pipeline route departs from Kellogg Avenue ROW and veers west-southwest paralleling the south side of an existing private drive for approximately 275 feet, and then continues following the private drive in a southeast direction for an additional 1,150 feet, before connecting with Kellogg Avenue road ROW again. The replacement route continues in a southerly direction along the west side of Kellogg Avenue for approximately 1,260 feet. The replacement route subsequently departs from Kellogg Avenue ROW and travels in a south-southwest direction, collocated with existing private roads for an additional 1,060 feet. From this location, the replacement pipeline route rejoins the existing Duke pipeline ROW and continues due south for approximately 3,800 feet to the southern interconnect location, near the Little Miami and Ohio Rivers confluence.

1.3 METHODOLOGY

This report identifies delineated wetlands, streams (ephemeral, intermittent, and perennial), and other potentially regulated waters within the Project study corridor. The methodology for conducting the wetland and waterbody delineation is presented below.

1.3.1 Wetlands

The wetland delineation was conducted using the routine on-site determination method described in the United States Army Corps of Engineers (USACE) 1987 Corps Manual (USACE Manual) and the USACE (2012) *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0* (Eastern Mountains and Piedmont Regional Supplement). The wetland boundaries, where present, were delineated using the routine onsite determination method described in the USACE Manual and Eastern Mountains and Piedmont Regional Supplement, supplemented by the *National Wetland Plant List*:

2016 Wetland Ratings (Lichvar 2016) and the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (USDA 2013). CEC conducted the following scope of services to identify and delineate wetland boundaries within the Project study corridor:

1. Office Data Review: Prior to the site reconnaissance, a review was conducted of publicly available data resources, associated with topography and historically mapped soils and wetlands, in the vicinity of the Project study corridor, in order to identify potential wetland areas. General site topography was assessed using the U.S. Geological Survey (USGS) topographic quadrangle map of Newport Kentucky-Ohio (Figure 1). Soils information for Hamilton County, Ohio is available online from the Web Soil Survey through the USDA NRCS. Soils information in the vicinity of the Project study corridor is displayed on Figures 2 and 3.

NWI maps, prepared by the United States Fish and Wildlife Service, are based on high altitude infrared aerial photography and limited ground truthing. NWI designated areas depict wetlands and deep water habitats and are classified according to the system developed by Cowardin et al. (1979). Accordingly, NWI data reflect conditions during the specific year and season in which the aerial photography was acquired and all wetlands may not be indicated. Similarly, the Ohio Wetlands Inventory (OWI) is based on analysis of satellite data and is intended solely as an indicator of wetland sites for which field review should be conducted. The OWI was developed in cooperation with the Ohio Department of Natural Resources (ODNR), Division of Wildlife and the USDA NRCS to provide a statewide inventory of wetlands. The Ohio Wetland Inventory is useful in general planning and environmental analyses. The wetland areas shown do not necessarily meet the definition of a regulatory wetland. Mapped NWI and OWI wetlands in the vicinity of the Project study corridor are shown on Figures 4 and 5.

2. Site Reconnaissance: The site reconnaissance portion of the wetland and waterbody delineation was performed on May 16, 18 and 19, 2016. First, plant communities present within the Project area were identified. The dominant plant species within each community were identified and a determination was made on whether the plant community was dominated by hydrophytic (wetland) plants. If areas that appeared to be dominated by hydrophytic plants were identified within the Project area, a representative test site was located within the plant community and soils were sampled using a spade shovel to determine if hydric soil indicators were present. Lastly, the test site was inspected to determine if indicators of wetland hydrology (ponding, soil saturation, etc.) were present. If a test site was determined to be within a wetland, further testing was to be performed to locate the wetland/non-wetland boundary and a second test site was to be established outside the wetland boundary to document conditions in the non-wetland area. If found, the boundaries of areas having the three necessary criteria were to be marked in the field with vinyl flagging and subsequently located using a sub-meter accuracy Trimble Geo-XT Global Positioning System (GPS) unit.
3. Data Collection: CEC photographed the test site location and vegetation communities located within the Project study corridor. Representative photographs of these locations

are included in Appendix A. Regional Supplement wetland determination data forms for the onsite determination method were prepared for potential wetland areas that were observed within the Project area. The wetland determination data forms provide a record of the vegetation, soils, and hydrology observations used in making the wetland determinations. Completed wetland determination data forms are provided in Appendix B.

4. Functional Assessment of Wetland Areas: CEC conducted a functional assessment on the delineated wetlands that were identified within the Project study corridor using the Ohio Rapid Assessment Method (ORAM version 5.0) for wetlands (Mack 2001). The ORAM characterizes wetlands into one of three categories (Category 1, 2, or 3) based upon their functions, value, and overall quality. Category 1 wetlands typically have minimal functions and low quality, are often dominated by invasive species, and are often hydrologically isolated. Category 2 wetlands typically have moderate or intermediate functions and quality. Category 3 wetlands typically have superior functions and quality and may include wetlands which provide habitat for threatened and endangered species or contain unique habitats. Although the ORAM only lists three categories of wetlands, some wetlands fall into “gray zones” that exist between the categories. These wetlands must be further assessed by using either another technique or professional judgment. Completed ORAM forms are provided in Appendix C.

1.3.2 Streams

In addition to the identification of wetlands, CEC identified streams within the Project study corridor that would likely be considered jurisdictional by the USACE and/or the Ohio Environmental Protection Agency (Ohio EPA). Using professional judgment and field indicators such as flow, substrate composition, embeddedness, defined bed and bank, vegetation, and benthic macroinvertebrates, CEC classified on-site stream segments into one of three stream types: ephemeral, intermittent, and perennial. The following descriptions are provided to clarify the different stream classifications.

- Ephemeral Stream – An ephemeral stream has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for this stream flow regime.

- Intermittent Stream – An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. Typically these streams flow regularly during the spring and fall when ground water tables are elevated. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for this stream flow regime.
- Perennial Stream – A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for this stream flow regime.

The uppermost limit of an ephemeral stream is determined at the point where the stream loses its defined "bed and bank" or ordinary high water mark (OHWM) and a predominance of upland vegetation occurs in the channel. Under natural, undisturbed conditions, streams generally originate as headwater ephemeral drainages along the tops of ridges, transition into intermittent stream systems, and eventually transition into perennial stream systems.

The interpreted limits of each stream segment within the Project study corridor, was recorded in the field using a Trimble GeoXT GPS unit. CEC also conducted a habitat evaluation of the on-site streams using the Ohio EPA Headwater Habitat Evaluation Index ([HHEI] Ohio EPA 2012) and/or Qualitative Habitat Evaluation Index ([QHEI] Ohio EPA 2006), depending upon the watershed size and/or predominant natural pool depths. For on-site primary headwater habitat (PHWH) streams (those with drainage areas equal to or less than one square mile or predominant natural pools that are equal to or less than 15.75 inches in depth), the HHEI classifies the streams into one of three categories: ephemeral (PHWH Class I), intermittent (PHWH Class II/III), or perennial (PHWH Class II/III). The stream receives a "Modified" designation from the HHEI assessment if the stream is recovering from historic stream channel modification or exhibits recent or no recovery from past modification.

For larger streams that exceed the maximum pool depths or drainage area criteria set forth by the HHEI methodology, the QHEI assessment classifies streams into general narrative ranges based on the total score and also provides a general indication on the aquatic life habitat use designation. The narrative ratings and corresponding QHEI scoring ranges are provided below in Table 1.

TABLE 1		
GENERAL NARRATIVE RANGES ASSIGNED TO QHEI SCORES		
Narrative Rating	QHEI Scoring Range	
	Headwaters	Larger Streams
Excellent	≥70	≥75
Good	55 to 69	60 to 74
Fair	43 to 54	45 to 59
Poor	30 to 42	30 to 44
Very Poor	<30	<30

Ohio Water Quality Standards (OAC 3745-1) are designed to provide a basis for protecting and restoring surface waters for a variety of uses, including protection and propagation of aquatic life. Aquatic life protection criteria consist of tiered aquatic life uses which are defined in OAC 3745-1-07. These include Warmwater Habitat (WWH), Exceptional Warmwater Habitat (EWH), Coldwater Habitat (CWH), Seasonal Salmonid Habitat (SSH) and Limited Resource Waters (LRW), which is linked with Modified Warm Water Habitats (MWH).

The WWH use designation defines the “typical” warmwater assemblage of aquatic organisms for Ohio rivers and streams. This use represents the principal restoration target for the majority of water resource management efforts in Ohio.

The EWH use designation is reserved for waters that support “unusual and exceptional” assemblages of aquatic organisms which are characterized by a high species diversity, particularly those which are intolerant and/or rare, threatened, endangered, or special status (i.e., declining species). This designation represents a protection goal for Ohio’s water resources.

The MWH designation applies to highly modified habitats that support the semblance of a warmwater biological community, but where the community falls short of attaining the WWH biological criteria because of functional and structural alterations of the macro-habitat. Examples include streams that have been channelized, straightened and/or heavily impounded and streams that are experiencing heavy sedimentation. MWH habitats are commonly low in dissolved oxygen (DO), elevated in ammonia, and/or nutrient enriched.

The LRW use designation applies to small streams and other water courses which have been irretrievably altered to the extent that no appreciable assemblage of aquatic life can be supported. Such waterways generally include small streams in urbanized areas, those which lie in watersheds with extensive drainage modifications and those which completely lack water on a recurring basis.

1.3.3 Open Water Bodies

The locations of ponds, lakes, or other open water bodies, where present within the Project area, were recorded using a Trimble Geo-XT GPS unit during the site reconnaissance.

2.0 FINDINGS

2.1 HYDROLOGY

The Project study corridor is situated in the Town of Newport – Ohio River [hydrologic unit code (HUC) 050902030201] and the Clough Creek - Little Miami River [hydrologic unit code (HUC) 050902021406] watersheds. Elevations within the Project study corridor are mapped to range from approximately 470 feet to 515 feet above mean sea level (AMSL). Drainage within the Project area is to the Little Miami and Ohio Rivers. The full extent of the Project study corridor is located within the Federal Emergency Management Agency (FEMA) 100-year floodplain (Figures 6-21).

2.2 SOILS

The NRCS (USDA 2013) identifies nine soil types within the Project study corridor (Table 2, Figures 2 and 3). None of the nine NRCS mapped soil types are classified as hydric. Two of the soil types, Genesee loam, occasionally flooded (Gn) and Huntington silt loam, occasionally flooded (Hu), are identified as non-hydric soils having hydric inclusions.

**TABLE 2
SOILS INFORMATION**

Soil Map Unit Symbol	Soil Mapping Unit Name	Drainage Class	NRCS Hydric Designation
CNWXFF	Chagrin-Nelse-Wheeling complex, 2 to 75 percent slopes, frequently flooded	Well drained	Not hydric
Gn	Genesee loam, occasionally flooded	Well drained	Hydric inclusions
Hu	Huntington silt loam, occasionally flooded	Well drained	Hydric inclusions
Pb	Pits, borrow	Not listed	Not hydric
Pg	Pits, gravel	Not listed	Not hydric
UMHXAO	Urban land-Molliac Udarents-Huntington complex, 0 to 2 percent slopes, occasionally flooded	Well drained	Not hydric
UrUXC	Urban land-Udorthents complex, 0 to 12 percent slopes	Not listed	Not hydric
UrUXCO	Urban land-Udorthents complex, 0 to 12 percent slopes, occasionally flooded	Not listed	Not hydric
UUWXFF	Urban land-Udorthents-Wheeling complex, 2 to 75 percent slopes, frequently flooded	Well drained	Not hydric

2.3 NATIONAL AND STATE WETLAND INVENTORY MAPS

2.3.1 NATIONAL WETLAND INVENTORY MAP

Two mapped NWI wetlands were identified within the Project study corridor at the southern terminus of the Project area at the time that this report was prepared (Figures 4 and 5). One of the two NWI designated areas is classified as palustrine (P), forested (FO), broad-leaved deciduous (1), seasonally flooded (C) wetland (PFO1C), and was identified as a palustrine forested wetland community during the site reconnaissance, as shown on Figures 20 and 21. The second NWI area is classified as a PFO1, temporarily flooded (A) wetland (PFO1A). This area did not meet the criteria to be designated as a wetland during the site reconnaissance, as shown on Figure 21.

2.3.2 OHIO WETLAND INVENTORY MAP

One mapped OWI wetland was identified within the Project study corridor at the southern terminus of the Project area at the time that this report was submitted (Figures 4 and 5). This OWI designated area is classified as a shallow marsh. The site reconnaissance revealed that this area does not meet the criteria to be considered a jurisdictional wetland. This OWI designated area is currently part of the Four Seasons Marina parking lot and Ohio River backwater area.

2.4 VEGETATION

The vegetation found within the wetland determination test sites have been detailed in the individual wetland determination data forms provided in Appendix B. Representative photographs the vegetation types found within the wetland determination test sites are included in Appendix A. Dominant plant species comprising these plant communities were identified and the USFWS wetland plant indicator status was determined according to Lichvar (2016). The USFWS has defined five wetland plant indicator categories, which include:

- Obligate Wetland (OBL – has >99% probability of occurring in wetlands);
- Facultative Wetland (FACW – has 66% to 99% chance of occurring in wetlands);
- Facultative (FAC – has 33% to 66% chance of occurring in wetlands);
- Facultative Upland (FACU – has 1 to 33% chance of occurring in wetlands); and,
- Upland (UPL – has <1% chance of occurring in wetlands).

Plants classified as OBL, FACW, or FAC are considered to be wetland plants (hydrophytes) by the USFWS and USACE.

2.5 WETLANDS

Six wetlands (Wetlands 1, 2, 3, 4, 5, and 6) were identified and delineated within the Project study corridor (Figures 6 through 21). Descriptions of each wetland can be found in Table 2

below. All six wetlands are located entirely within the FEMA 100-year floodplains of the Ohio and Little Miami Rivers.

Twenty-seven (27) wetland determination sample points were evaluated by CEC within the Project study corridor using the on-site wetland determination method described above in Section 1.2.1. The wetland determination data forms for these 27 sites are provided in Appendix B. The location of these sample sites were recorded using a Trimble Geo-XT GPS unit and are shown on Figures 6 through 21. Representative photographs of the wetland determination sample point locations can be found in Appendix A.

TABLE 3. WETLAND CHARACTERISTICS

Wetland Identifier	USFWS Classification ^{1,2,3}	ORAM ⁴		Sample Point (SP) Location	Interpreted Hydrological Status ⁵	Approximate Area within Project Study Corridor (Acres)
		Score	Category			
1	PEM	76.5	3	2,9	Connected/Adjacent	0.06
	PFO			1,3,5,6,7,8,9		1.74
2	PEM	52.5	2	18	Connected/Adjacent	0.07
	PFO			17		0.58
3	PEM	17.5	1	20	Connected/Adjacent	0.04
4	PFO	43	2	22	Connected/Adjacent	0.42
5	PFO	42.5	2	25	Connected/Adjacent	0.27
6	PEM	18	1	26	Connected/Adjacent	0.09
Total						3.27

¹ As interpreted from *Classification of Wetlands and Deep Water Habitats of the United States*. Cowardin, L. M., V. Carter, and F. C. Golet. 1979.

² Palustrine Emergent (PEM) Wetland

³ Palustrine Forested (PFO) Wetland

⁴ Ohio Rapid Assessment for Wetlands (ORAM)

⁵ The determinations of hydrologically connected/adjacent and isolated wetlands outlined in this report are preliminary, based on the boundary delineations and have not been formally approved by the USACE.

Wetland 1, totaling approximately 1.8 acres within the study corridor, is located at the southern terminus of the Project area near the confluence of the Little Miami and Ohio Rivers (Figures 20 and 21). CEC classified this wetland as a palustrine (P), emergent (EM) and palustrine (P) forested (FO) wetland (PEM/PFO) (Cowardin 1979). The PEM portion of this wetland is an existing utility right-of-way (ROW) that crosses the wetland in a northwest to southeast

direction. The PEM wetland community comprises less than 3 percent (0.06 acre) of the total wetland area for Wetland 1 within the Project area. Based on an ORAM score of 76.5, this wetland was classified as a Category 3 wetland or high quality wetland (Appendix C). The forested vegetation community is dominated by silver maple (*Acer saccharinum*, FACW), cottonwood (*Populus deltoids*, FAC), and box elder (*Acer negundo*, FAC), while the emergent plant community is dominated by creeping jenny (*Lysimachia nummularia*, FACW) and false nettle (*Boehmeria cylindrica*, FACW). The soil profiles from the wetland determination sample point locations exhibited a depleted matrix or a redox dark surface. Positive wetland hydrology indicators included surface water, high water table, saturation, drift deposits, inundation and/or visible on aerial imagery, water marks, water-stained leaves, sparsely vegetated concave surface, drainage patterns, geomorphic position, stunted or stressed plants, microtopographic relief, and a positive FAC-neutral test.

Wetland 2, totaling approximately 0.65 acre within the study corridor, is located near the southern terminus of the Project area, adjacent to the east of Four Seasons Marina (Figures 19 and 20). CEC classified this wetland as a palustrine (P), emergent (EM) and palustrine (P) forested (FO) wetland (PEM/PFO) (Cowardin 1979). The PEM portion of this wetland, totaling 0.07 acre, is located within the existing, maintained Duke utility ROW. Based on an ORAM score of 52.5, this wetland was classified as a Category 2 wetland (Appendix C). The forested vegetation community is dominated by American sycamore (*Platanus occidentalis*, FACW), cottonwood, silver maple, and box elder, while the emergent plant community is dominated by Gray's sedge (*Carex grayi*, FACW), creeping jenny, and poison ivy (*Toxicodendron radicans*, FAC). The soil profiles from the two wetland determination sample point locations exhibited a depleted matrix and redox dark surface, respectively. Positive wetland hydrology indicators included sediment deposits, sparsely vegetated concave surface, drainage patterns, geomorphic position, and a positive FAC-neutral test.

Wetland 3, totaling 0.04 acre, is a PEM wetland located within a roadside ditch adjacent to the north of Stites Road. Based on an ORAM score of 17.5, this wetland was classified as a Category 1 wetland (Appendix C). The emergent vegetation is dominated by common threesquare (*Schoenoplectus pungens*, OBL), curly dock (*Rumex crispus*, FAC), common blue

violet (*Viola sororia*, FAC), and poison hemlock (*Conium maculatum*, FACW). The soil profile exhibited a redox dark surface. Positive wetland hydrology indicators included drainage patterns, geomorphic position, and a positive FAC-neutral test.

Wetland 4, totaling approximately 0.42 acre within the study corridor, is a PFO wetland located adjacent to the east of Kellogg Avenue, and is bound by Derrick Heat Treating Blasting Painting to the north and Bob's Used Auto Parts to the south. Based on an ORAM score of 43, this wetland was classified as a Category 2 wetland (Appendix C). The vegetation is dominated by silver maple. The soil profile exhibited a depleted matrix. Positive wetland hydrology indicators included surface water, high water table, saturation, water marks, inundation and saturation visible on aerial imagery, water-stained leaves, geomorphic position, microtopographic relief, and a positive FAC-neutral test.

Wetland 5, totaling approximately 0.27 acre within the study corridor, is a PFO wetland located adjacent to the east of Kellogg Avenue, and is bound by Kellogg Auto Parts to the north and the Little Miami Wastewater Treatment Plant to the south. Based on an ORAM score of 42.5, this wetland was classified as a Category 2 wetland (Appendix C). Similar to Wetland 4, the vegetation is dominated by silver maple. The soil profile exhibited a redox dark surface. Positive wetland hydrology indicators included surface water, high water table, saturation, water marks, inundation and saturation visible on aerial imagery, drainage patterns, geomorphic position, and a positive FAC-neutral test.

Wetland 6, totaling approximately 0.09 acre within the study corridor, is a PEM wetland located south-southwest of the intersection of Kellogg and Congress Avenues. Wetland 6 is located within the secondary containment berms that were constructed at the Kinder Morgan / Queen City Terminal. The vegetation is dominated by reed canarygrass (*Phalaris arundinacea*, FACW) and whitegrass (*Leersia virginica*, FACW). The soil profile exhibited a redox dark surface. Positive wetland hydrology indicators included saturation, water marks, inundation and saturation visible on aerial imagery, sparsely vegetated concave surface, drainage patterns, geomorphic position, microtopographic relief, and a positive FAC-neutral test.

2.6 STREAMS

No streams were identified within the Project area (Figures 6 through 21). For much of the project length rainfall is directed into storm sewers hence the lack of stream channels.

2.7 OPEN WATER BODIES

No open water bodies, including ponds and lakes, were identified in the Project area (Figures 6 through 21).

3.0 CONCLUSIONS

CEC identified approximately 3.27 acres of wetland within the Project study corridor. The locations of these wetlands are shown on Figures 6 through 21. No streams or open water bodies were identified within the study area.

4.0 LEVEL OF CARE

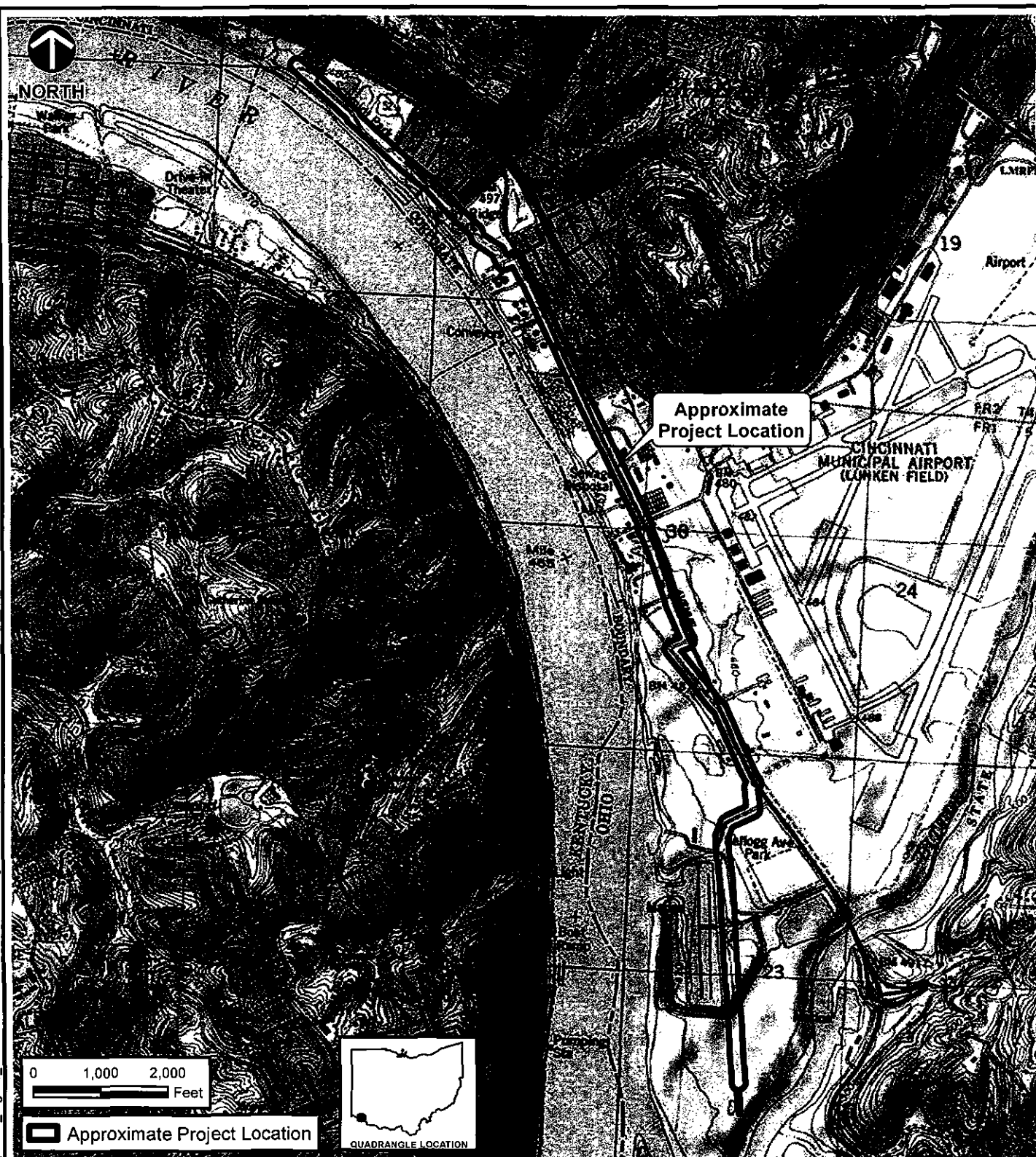
The wetland and stream delineation services performed by CEC were conducted in a manner consistent with the criteria contained in the USACE Manual and Eastern Mountains and Piedmont Regional Supplement and with the level of care and skill ordinarily exercised by members of the environmental consulting profession practicing contemporaneously under similar conditions in the locality of the project. It must be recognized that the jurisdictional waters delineation was based on field observations and CEC's professional interpretation of the criteria in the USACE Manual and Eastern Mountains and Piedmont Regional Supplement at the time of our fieldwork. Wetland and stream determinations may change subsequent to CEC's delineation based on changes in the regulatory criteria, seasonal variations in hydrology, alterations to drainage patterns and other human activities and/or land disturbances.

5.0 REFERENCES

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FIGURES

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SOURCE: PORTION OF THE USGS 7.5-MINUTE SERIES TOPOGRAPHIC QUADRANGLE MAP OF NEWPORT, KENTUCKY-OHIO - 1984.



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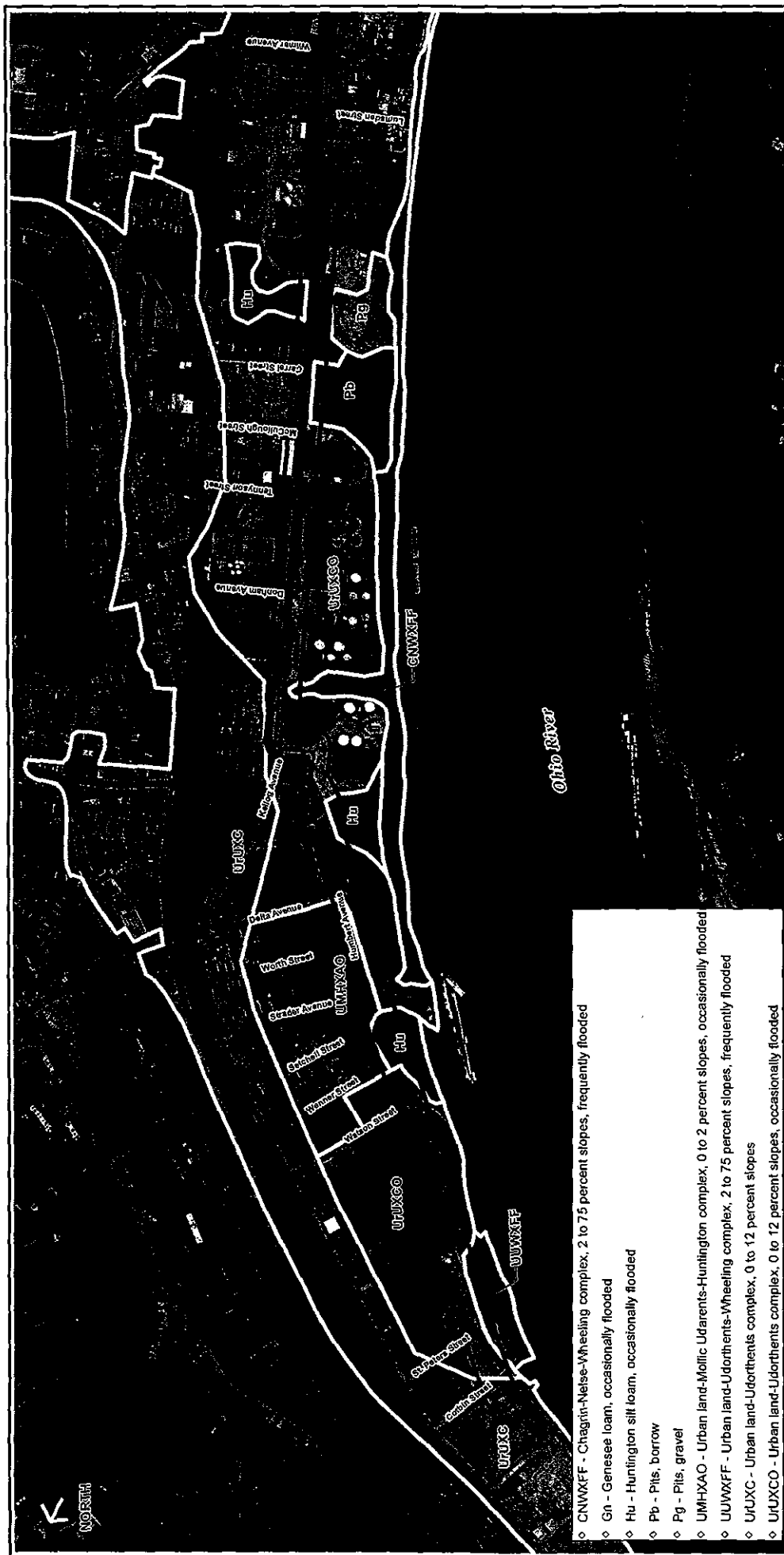
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PROJECT LOCATION MAP

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DATE:	AUGUST 25, 2016	DWG SCALE:	1" = 2,000'	PROJECT NO:	153-230	1

Signature on File *



SOURCE: OHIO GEOGRAPHICALLY REFERENCED IMAGERY PROGRAM (GRIDIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2012

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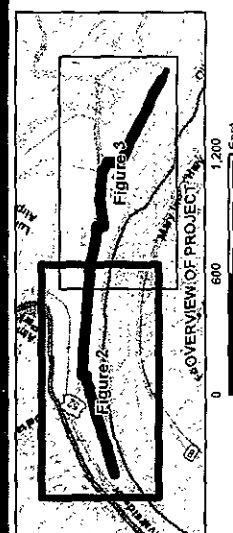
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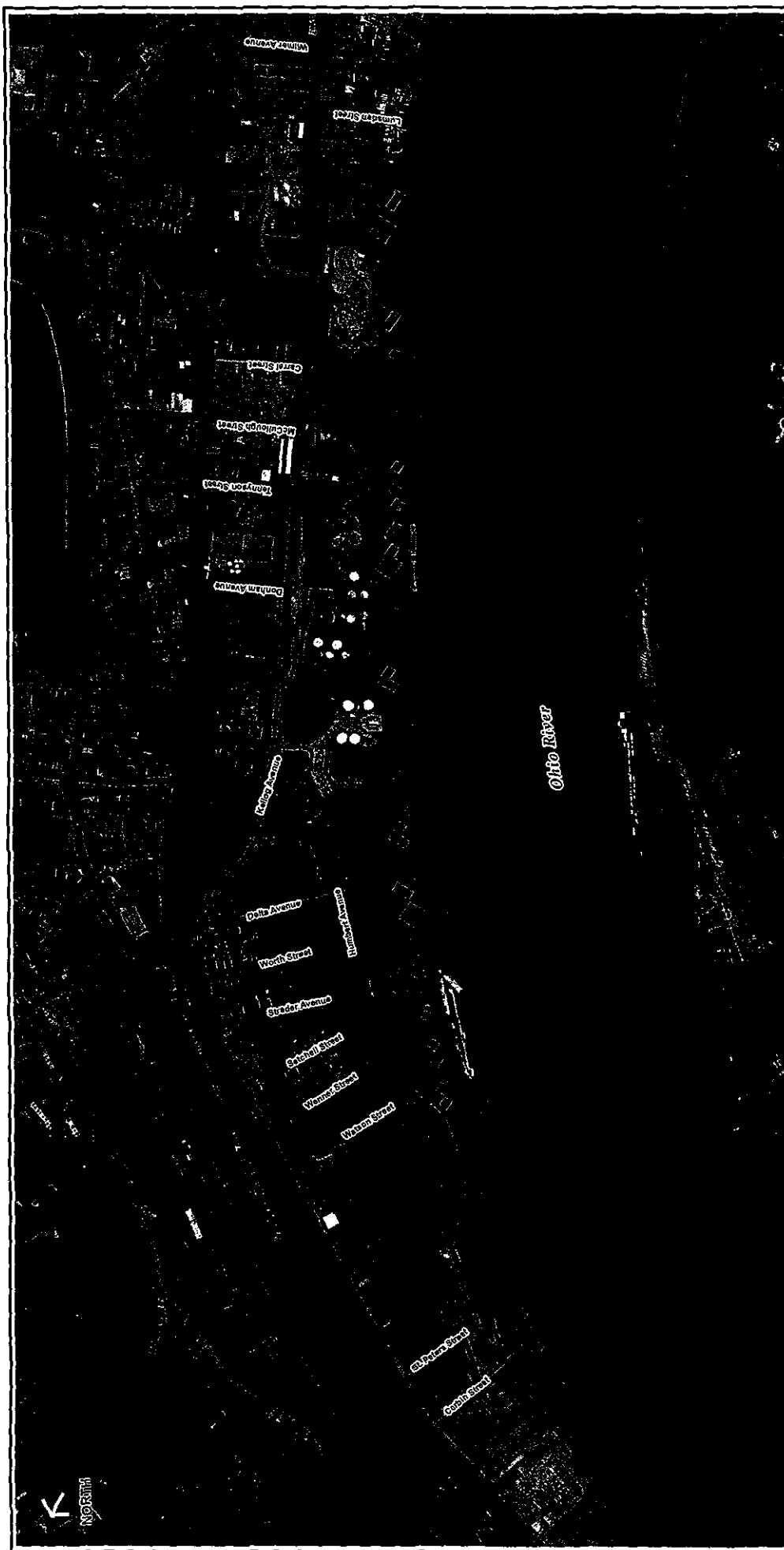
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CINCINNATI, HAMILTON COUNTY

USDA SOILS MAP

DRAWN BY:	DMG	CHECKED BY:	JAV	APPROVED BY:	JAV*	FIGURE NO:
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DRAWN BY:	UMG	CHECKED BY:	JAV	APPROVED BY:	JAV
DATE:	AUGUST 25 2016	DWG SCALE:	1" = 600'	PROJECT NO:	153-230





Variable Width Study Corridor

- National Wetland Inventory (NWI) Designated Area
- Ohio Wetland Inventory (OWI) Designated Area
- Open Water
- Shallow Marsh
- Shrub/Scrub Wetland
- Wet Meadow
- Farmed Wetland

Figure 4: OVERVIEW OF PROJECT

Figure 5

0 600 1,200 Feet

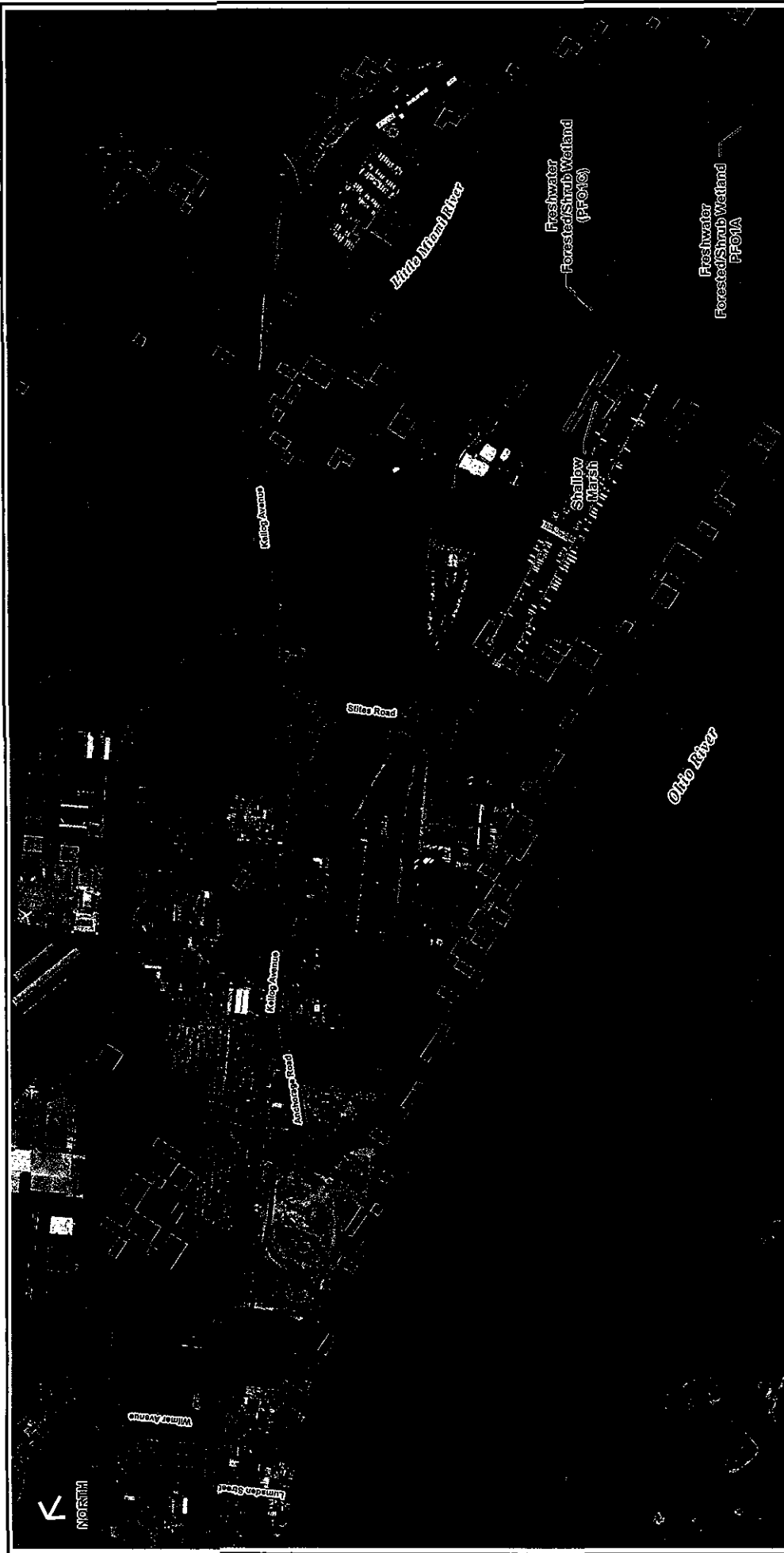
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 NATIONAL (NWI) AND OHIO (OWI)
 WETLAND INVENTORIES MAP


DRAWN BY: DMG
DATE: AUGUST 25, 2016
DMG CHECKED BY: JAV
PROJECT NO: 153-230

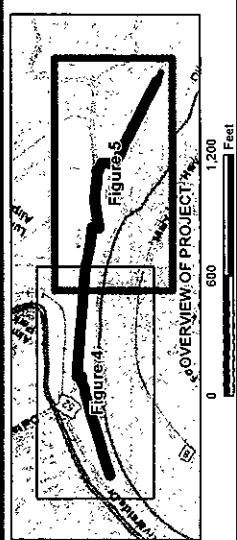
APPROVED BY: JAV
FIGURE NO: 4

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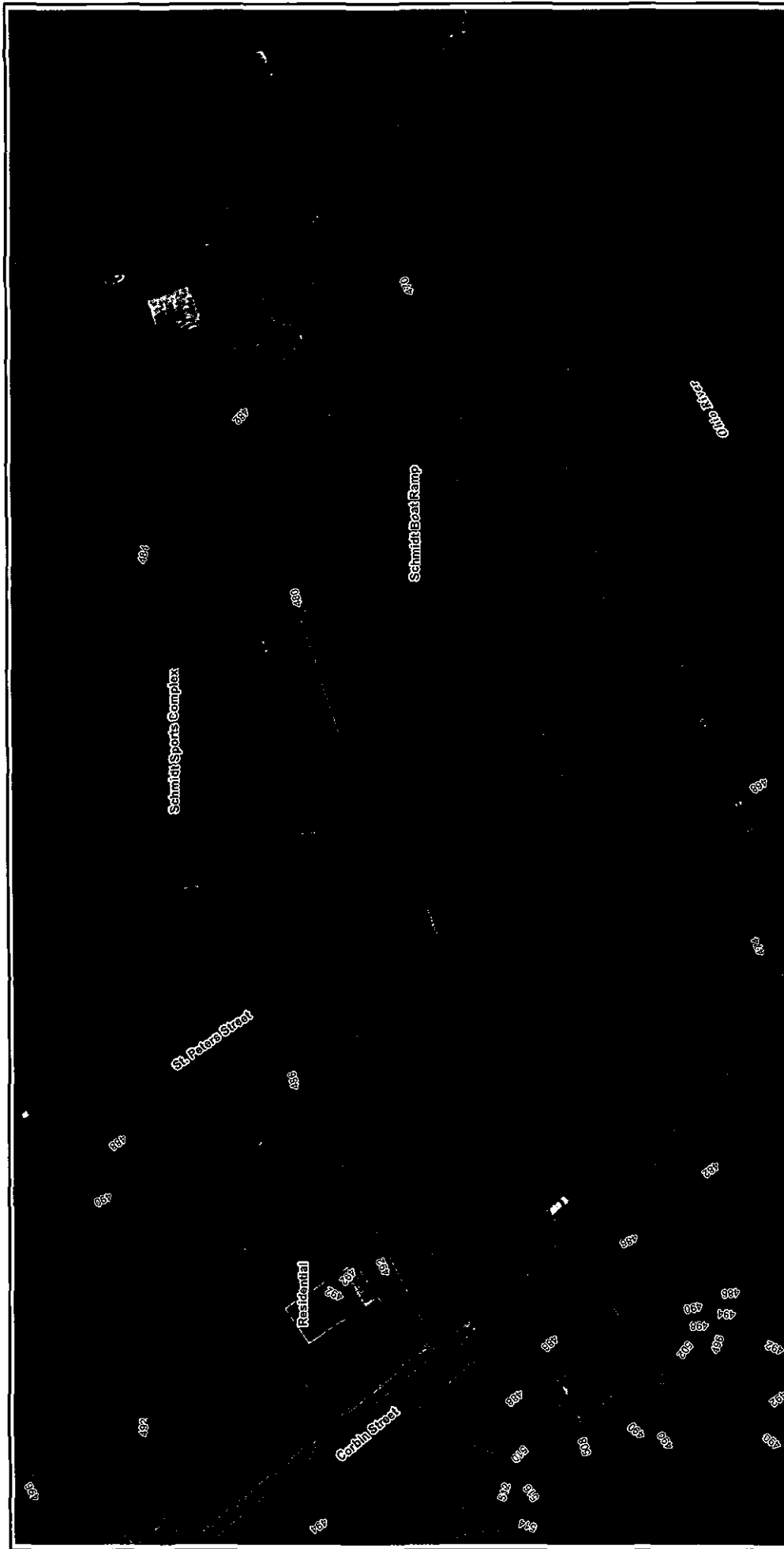


SOURCE: OHIO GEOGRAPHICALLY REFERENCED IMAGERY PROGRAM (GRIPI) HAMILTON COUNTY NOS/NC. IMAGE DATE: 2012
 SOURCES: OHIO WETLAND INVENTORY DATA FOR HAMILTON COUNTY, OHIO AND NATIONAL WETLAND INVENTORY STATEWIDE DATASET FOR OHIO.


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	NATIONAL (NW) AND OHIO (OW) WETLAND INVENTORIES MAP	
DRAWN BY: DMG DATE: AUGUST 25, 2016	CHECKED BY: JAV APPROVED BY: JAV	PROJECT NO: 153-230 FIGURE NO: 5

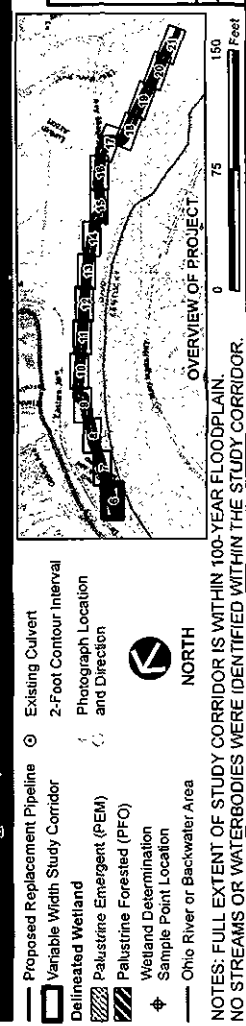


- Variable Width Study Corridor
- National Wetland Inventory (NW) Designated Area
- Ohio Wetland Inventory (OW) Designated Area
- Open Water
- Shallow Marsh
- Shrub/Scrub Wetland
- Wet Meadow
- Farmed Wetland

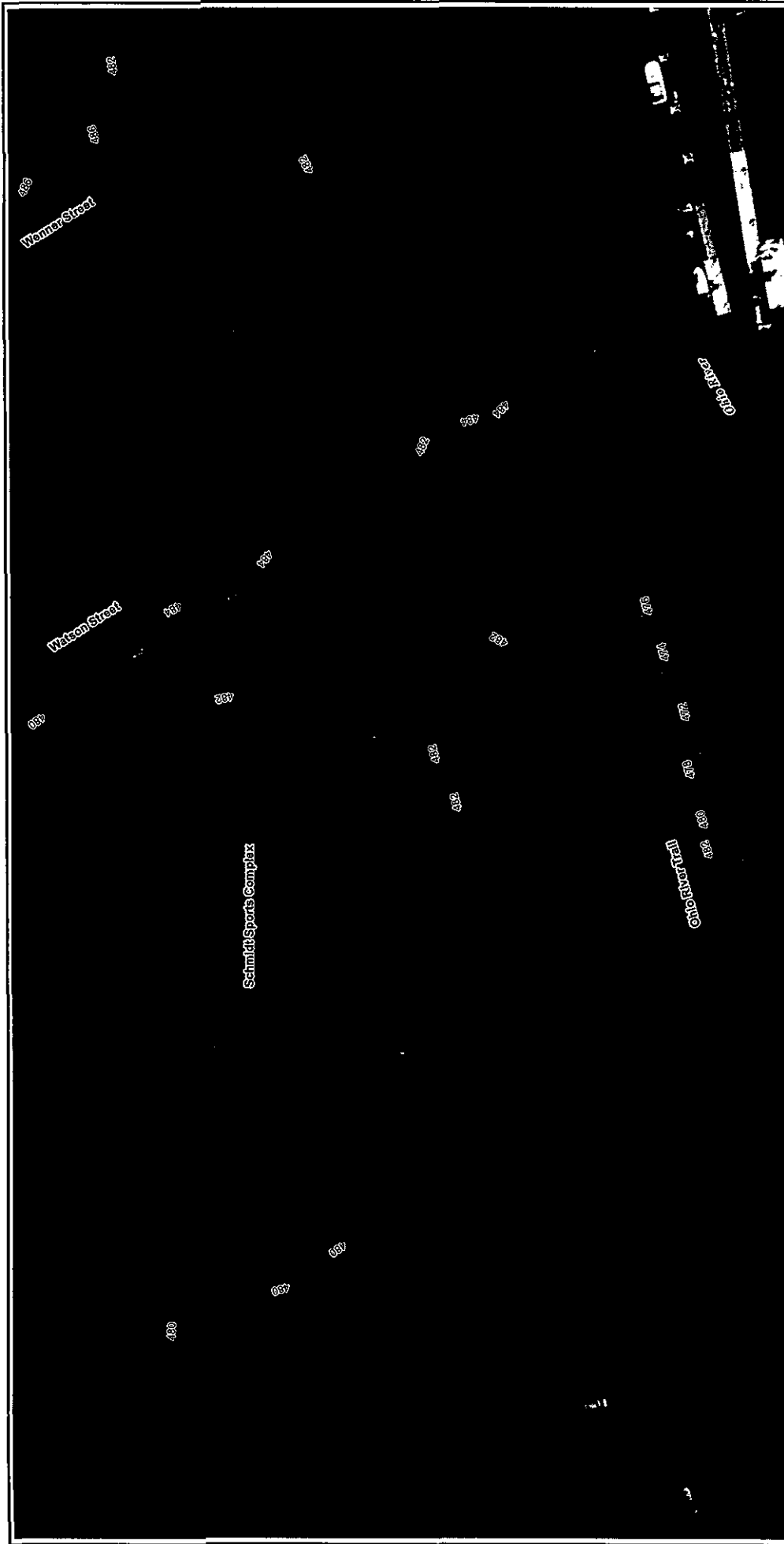


SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC, IMAGE DATE: 2015.
SOURCE: CAGS 2-FOOT INTERVAL ELEVATION CONTOURS.

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WETLAND AND WATERBODY DELINEATION AND PHOTOGRAPH LOCATION MAP		DRAWN BY: JBF DATE: AUGUST 25, 2016 DWG SCALE: 1" = 75' APPROVED BY: JAV PROJECT NO: 153-230 FIGURE NO: 6



- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination
- Sample Point Location
- Ohio River or Backwater Area
- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction
- NORTH



Legend

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination Sample Point Location
- Ohio River or Backwater Area
- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction
- NORTH

OVERVIEW OF PROJECT

0 75 150 Feet

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN. NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

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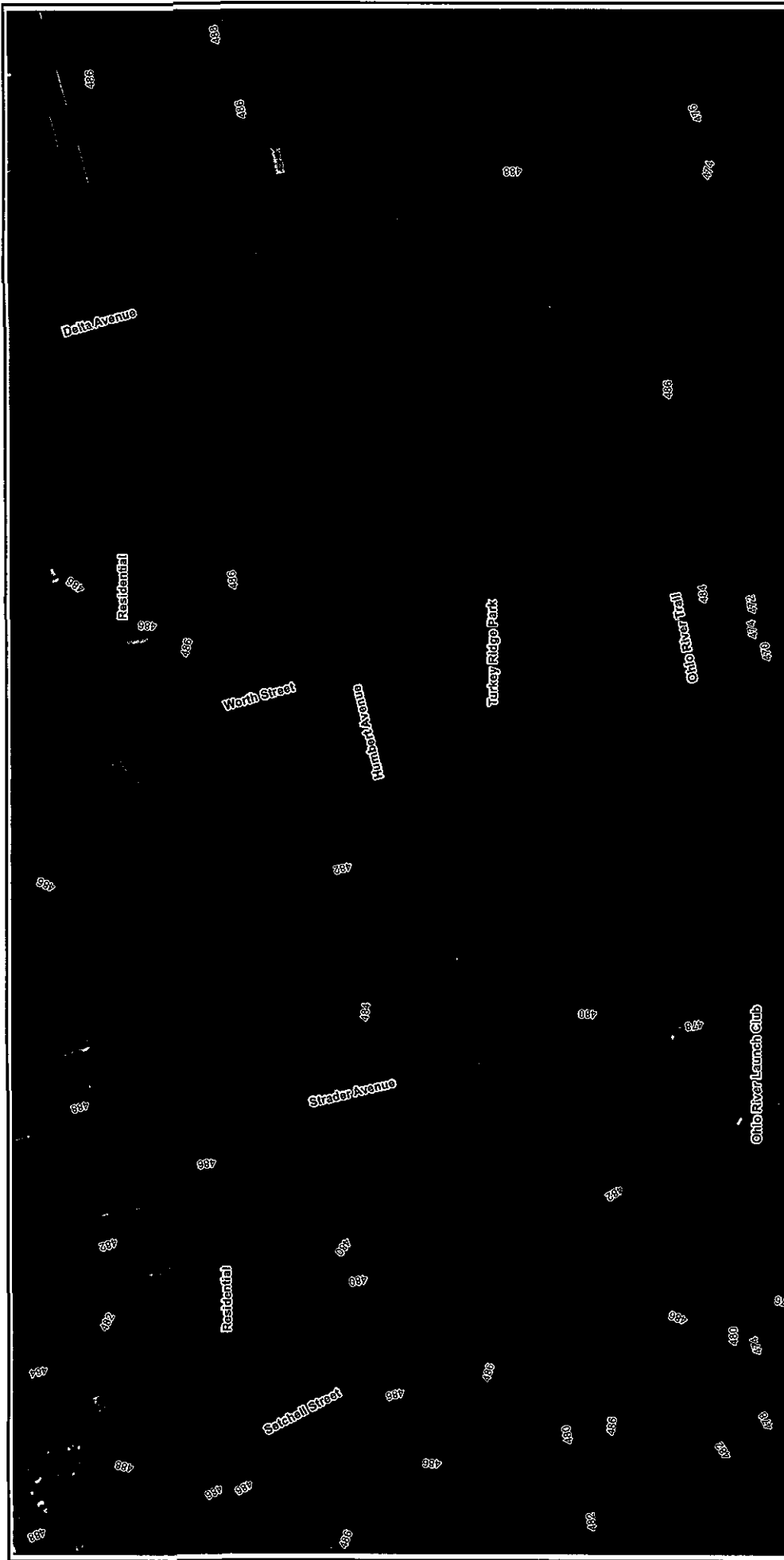
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 CINCINNATI, HAMILTON COUNTY, OHIO
 WETLAND AND WATERBODY DELINEATION
 AND PHOTOGRAPH LOCATION MAP

DRAWN BY: JBF
DATE: AUGUST 25, 2016

CHECKED BY: JAV
DWG SCALE: 1" = 75'

APPROVED BY: JAV
PROJECT NO: 153-230
FIGURE NO: 7

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Legend

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Delineated Wetland
 - Palustrine Emergent (PEM)
 - Palustrine Forested (PFO)
 - Wetland Determination
 - Sample Point Location
- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction
- Ohio River or Backwater Area

OVERVIEW OF PROJECT

0 75 150 Feet

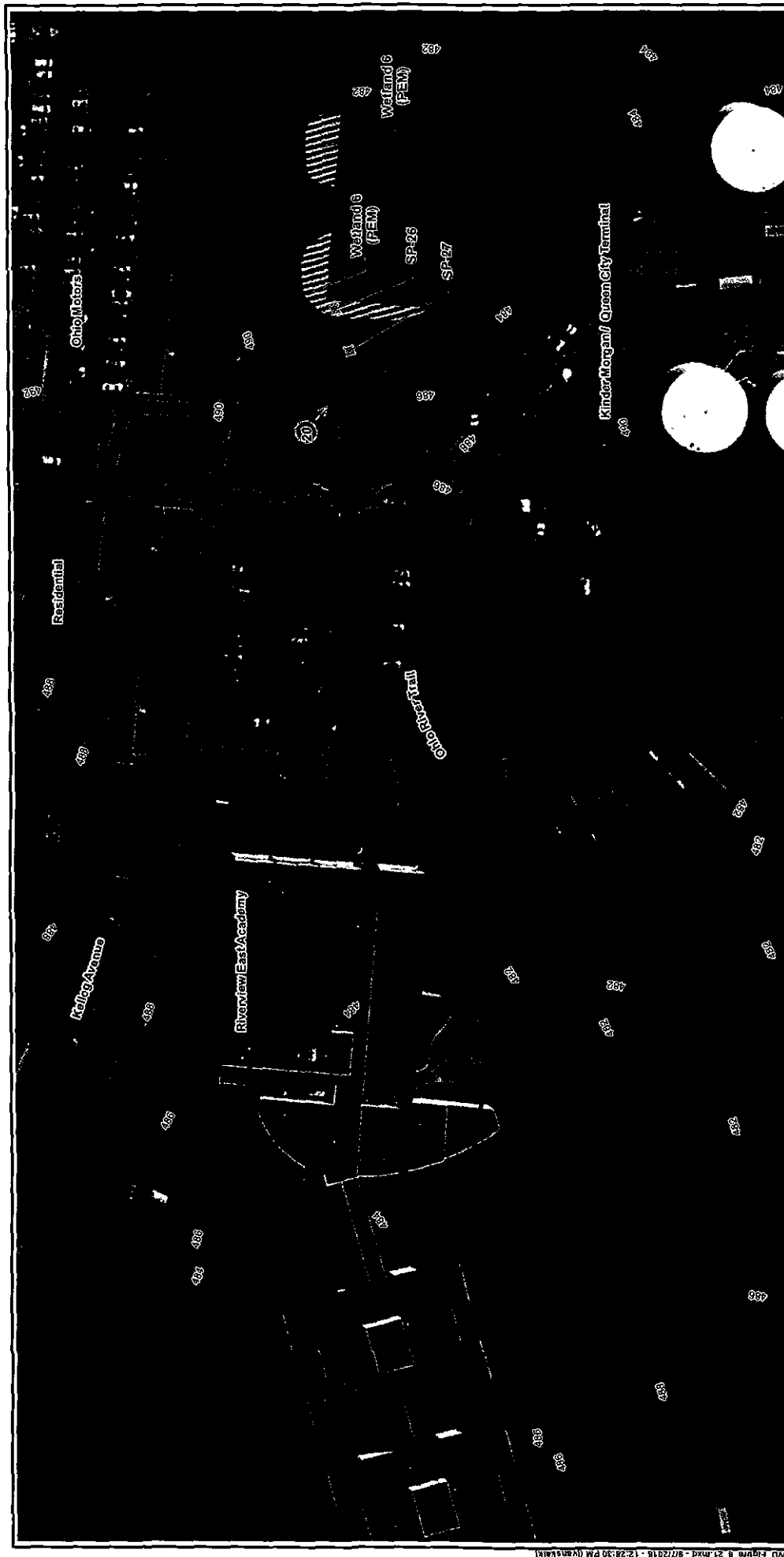
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 WETLAND AND WATERBODY DELINEATION
 AND PHOTOGRAPH LOCATION MAP

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
 NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

APPROVED BY: JAV **FIGURE NO:** 8
CHECKED BY: JBF **PROJECT NO:** 153-230
DATE: AUGUST 25, 2016 **DWG SCALE:** 1" = 75'

Signature on File



Legend

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination Sample Point Location
- Ohio River or Backwater Area
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- 2-Foot Contour Interval
- Photograph Location and Direction

Overview of Project

DUKE ENERGY

LINE D000B PIPELINE REPLACEMENT PROJECT

CINCINNATI, HAMILTON COUNTY, OHIO

WETLAND AND WATERBODY DELINEATION

AND PHOTOGRAPH LOCATION MAP

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Checked By: JAV

Date: AUGUST 25, 2016

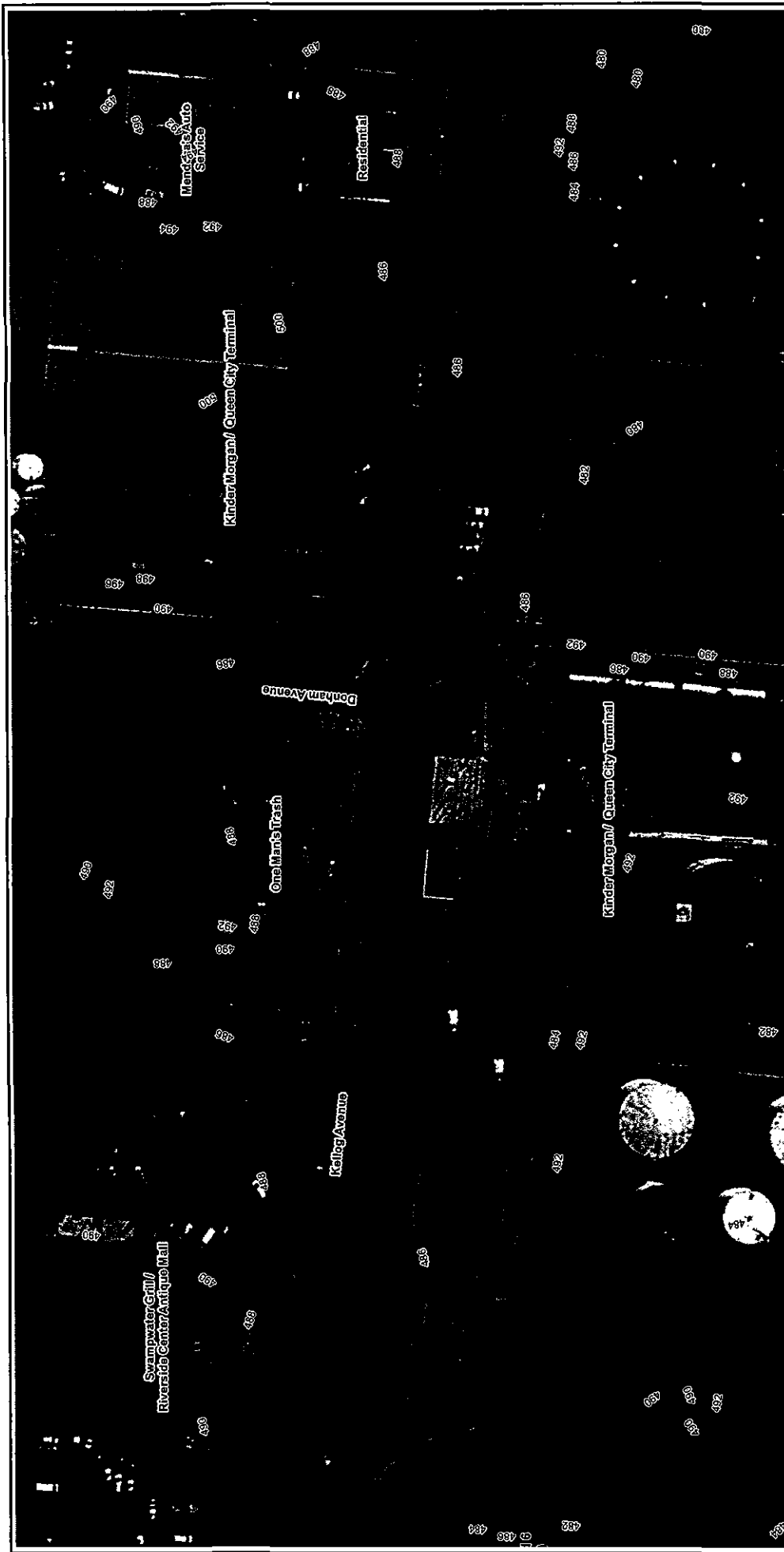
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Approved By: JAV


Project No: 153-230

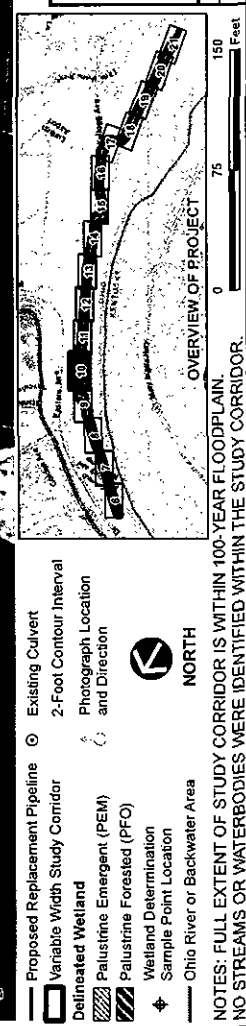
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NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN. NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.



SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.

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	WETLAND AND WATERBODY DELINEATION AND PHOTOGRAPH LOCATION MAP	
DRAWN BY: JBF DATE: AUGUST 25, 2016	CHECKED BY: JAV 1" = 75' DWG SCALE:	APPROVED BY: JAV PROJECT NO: 153-230 FIGURE NO: 10



NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

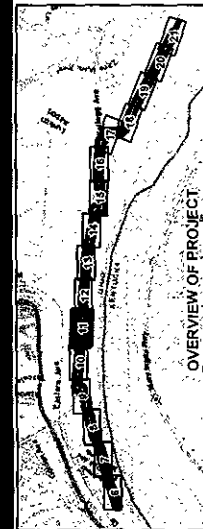


SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
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CINCINNATI, HAMILTON COUNTY, OHIO
WETLAND AND WATERBODY DELINEATION
AND PHOTOGRAPH LOCATION MAP



- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination Sample Point Location
- Ohio River or Backwater Area
- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction
- NORTH

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

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DATE: AUGUST 25, 2016 DWG SCALE: 1" = 75' PROJECT NO: 153-230
FIGURE NO: 11

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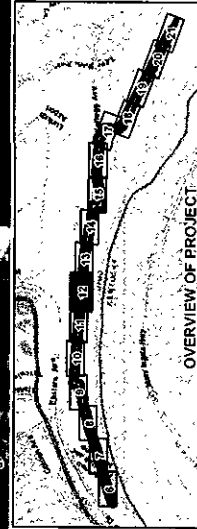


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AND PHOTOGRAPH LOCATION MAP

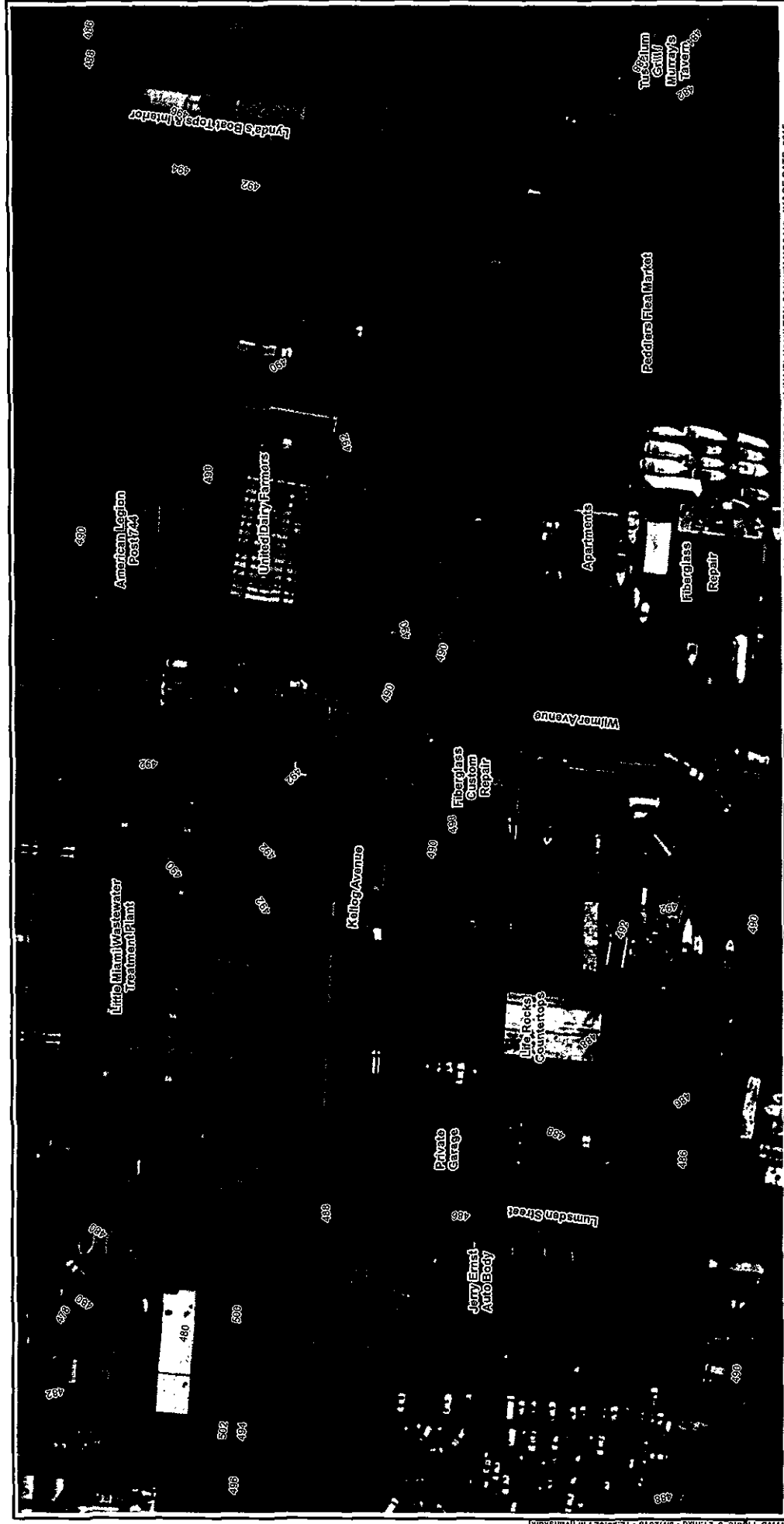


- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Delineated Wetland
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NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

DRAWN BY: JBF CHECKED BY: JAV
DATE: AUGUST 25, 2016 DWG SCALE: 1" = 75'
APPROVED BY: JAV
PROJECT NO: 153-230
FIGURE NO: 12

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 CINCINNATI, HAMILTON COUNTY, OHIO

WETLAND AND WATERBODY DELINEATION
AND PHOTOGRAPH LOCATION MAP

13

FIGURE NO. 153-230

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PROJECT NO: 153-230

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DATE: AUGUST 25, 2016

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SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.

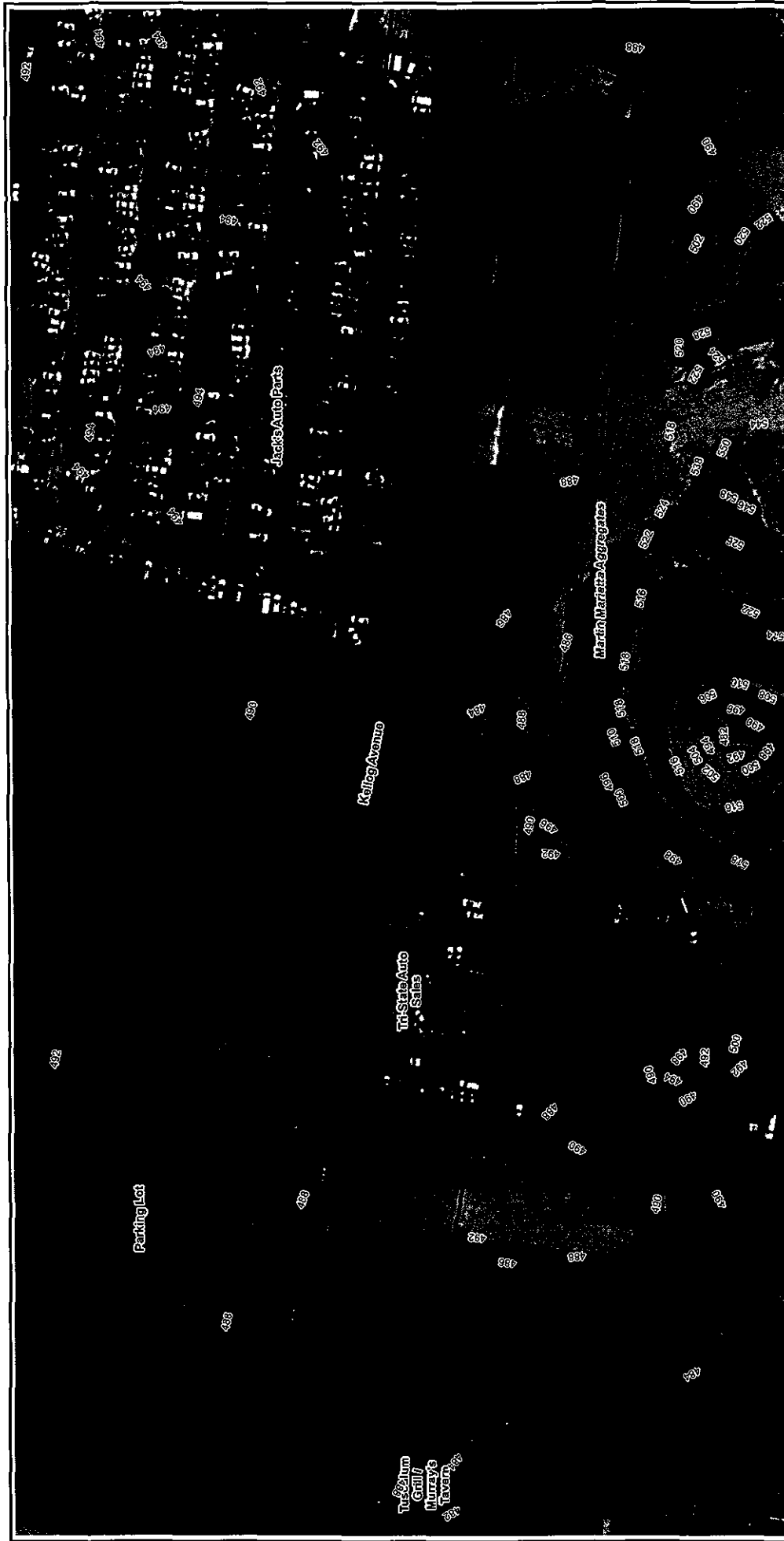
OVERVIEW OF PROJECT

0 75 150 Feet

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

LEGEND

- Proposed Replacement Pipeline
- Variable Width Study Corridor
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- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination Sample Point Location
- Ohio River or Buckwater Area
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- Photograph Location and Direction
- NORTH



Legend

- Proposed Replacement Pipeline
- Variable Width Study Corridor
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- Ohio River or Backwater Area
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- NORTH

OVERVIEW OF PROJECT

0 75 150 Feet

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN. NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

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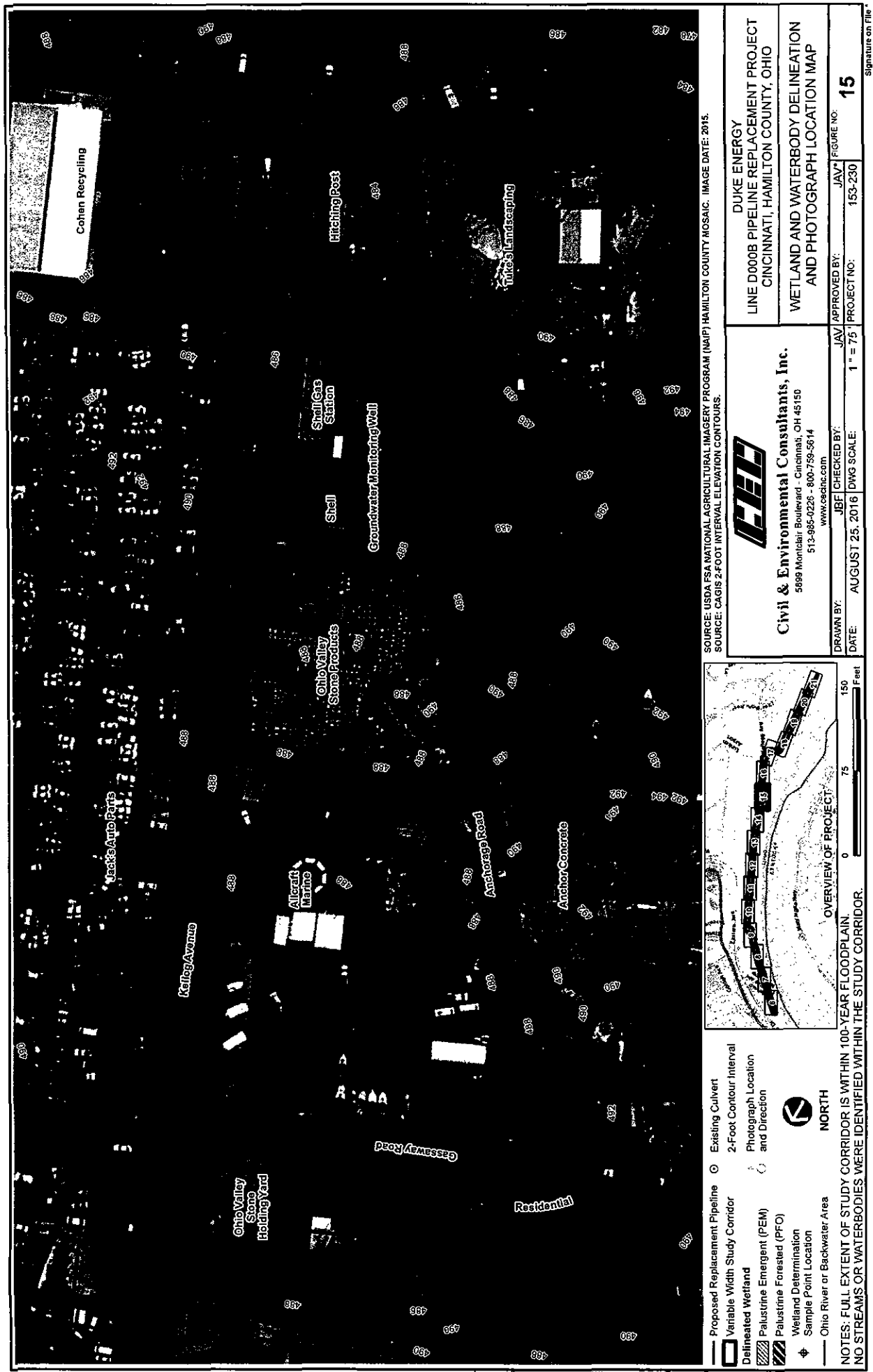
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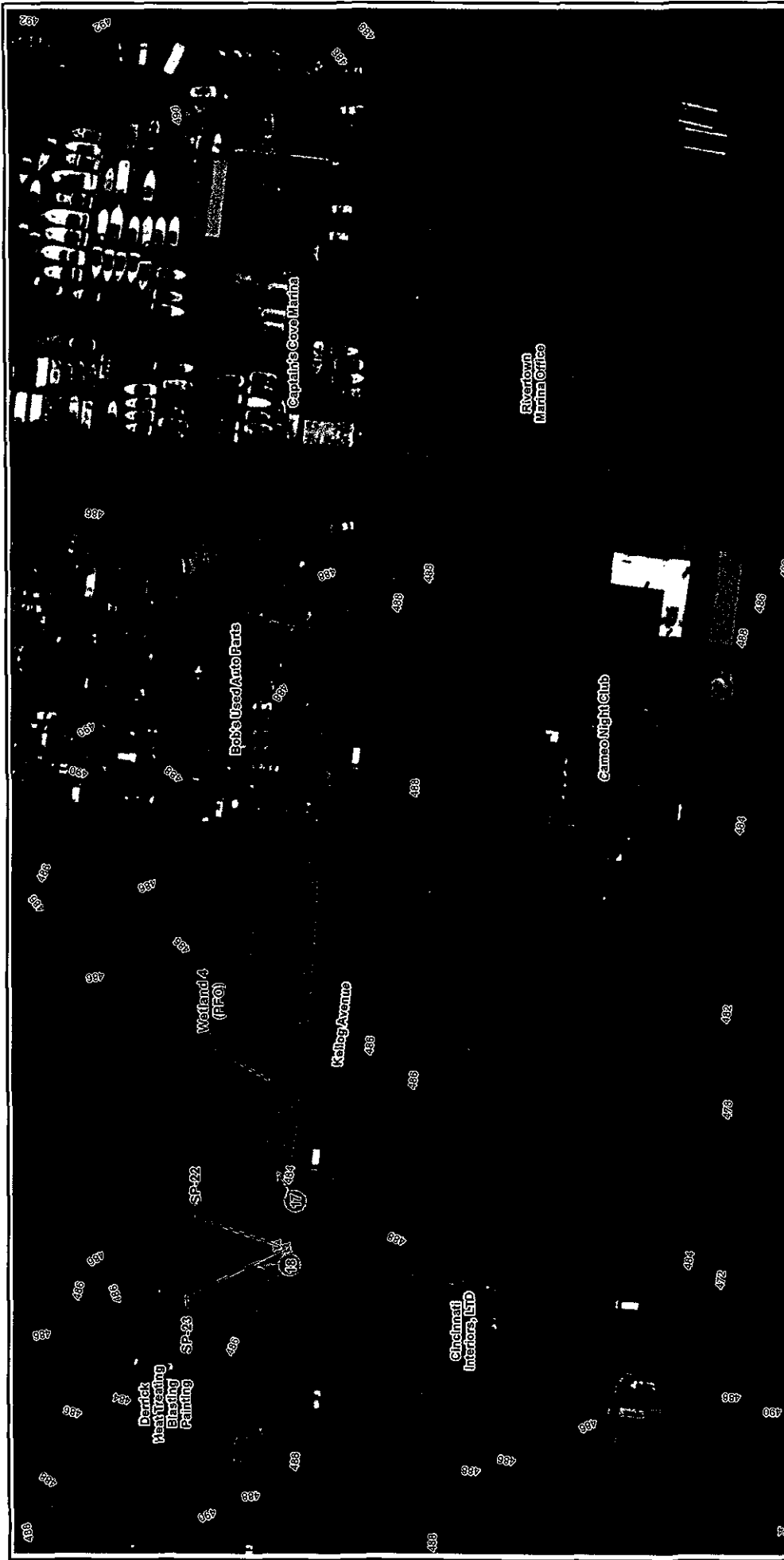
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 DWG SCALE: 1" = 75'

APPROVED BY: JAV
 PROJECT NO: 153-230

FIGURE NO: **14**

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Legend

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination
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OVERVIEW OF PROJECT

0 75 150 Feet

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN. NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

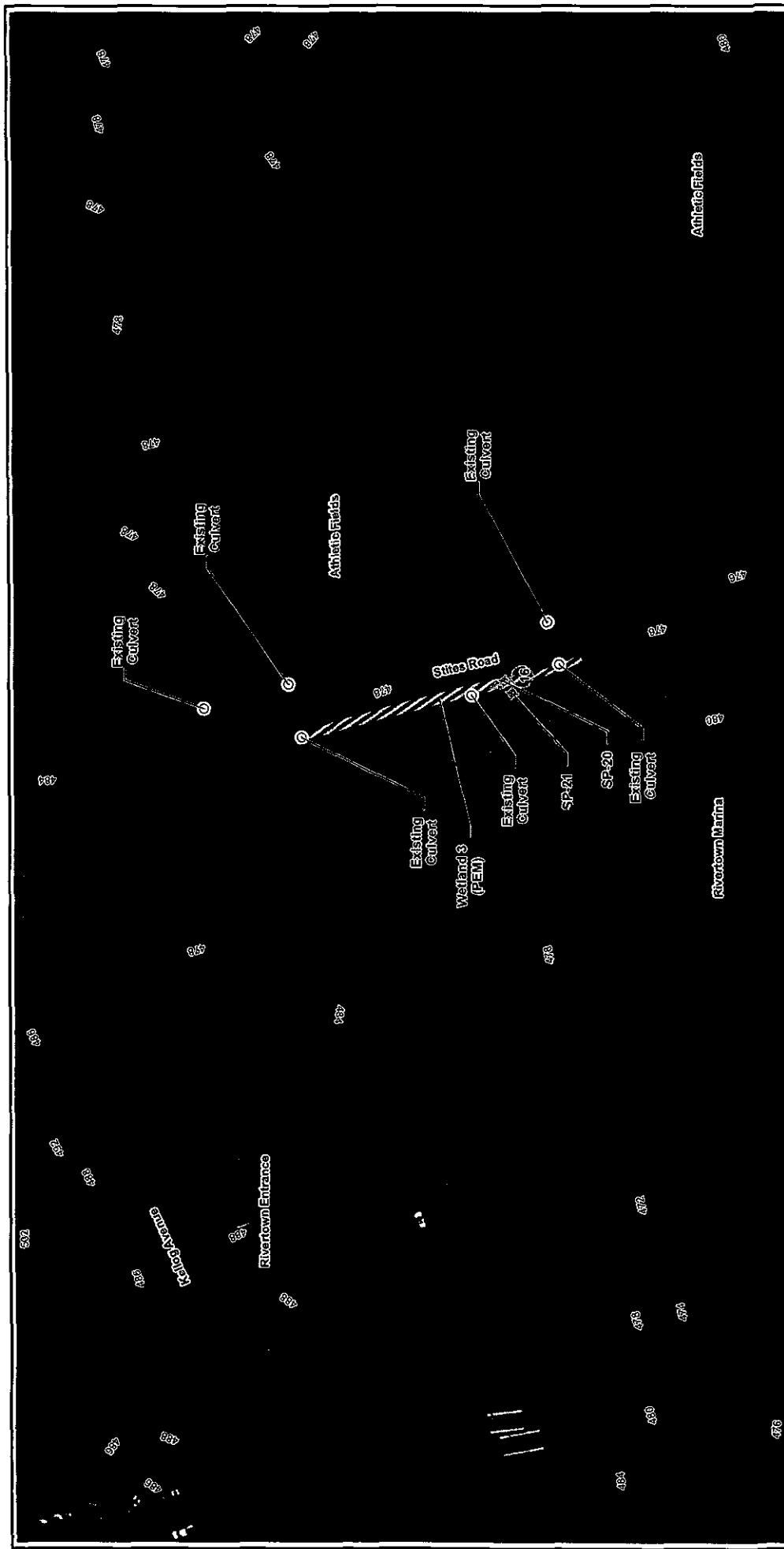
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 CINCINNATI, HAMILTON COUNTY, OHIO
 WETLAND AND WATERBODY DELINEATION
 AND PHOTOGRAPH LOCATION MAP

APPROVED BY: JAV
CHECKED BY: JBF
DATE: AUGUST 25, 2016
DWG SCALE: 1" = 75'

PROJECT NO: 155-230
FIGURE NO: 16

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 CINCINNATI, HAMILTON COUNTY, OHIO

**WETLAND AND WATERBODY DELINEATION
 AND PHOTOGRAPH LOCATION MAP**

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OVERVIEW OF PROJECT

0 75 150 Feet

LEGEND

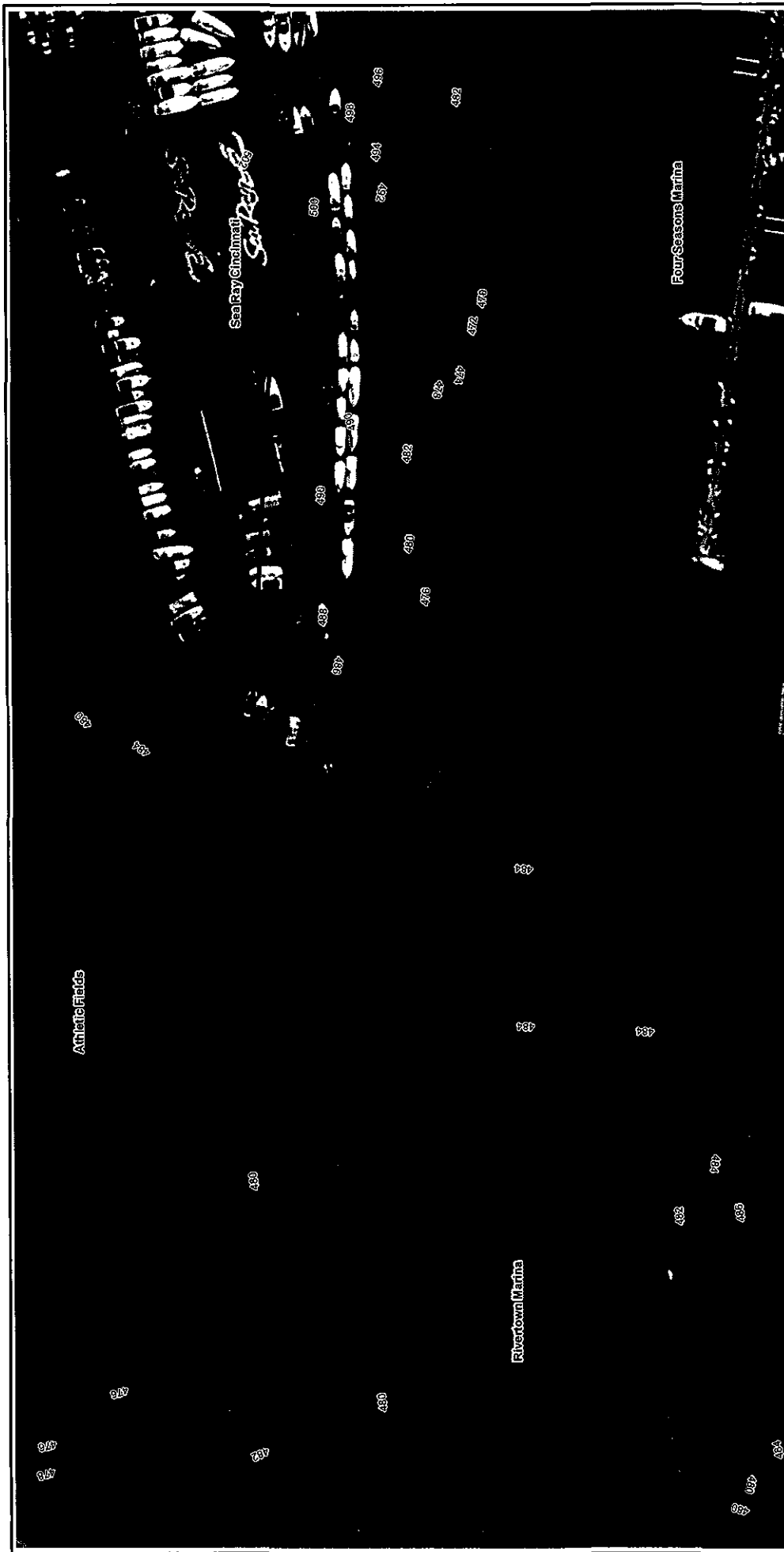
- Proposed Replacement Pipeline
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NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
 NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

APPROVED BY: JAV
DATE: AUGUST 25, 2016
DWG SCALE: 1" = 75'

APPROVED BY: JAV
PROJECT NO: 153-230
FIGURE NO: 17

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DUKE ENERGY
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CINCINNATI, HAMILTON COUNTY, OHIO

WETLAND AND WATERBODY DELINEATION
AND PHOTOGRAPH LOCATION MAP

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DATE: AUGUST 25, 2016
APPROVED BY: JAV
PROJECT NO: 153-230

FIGURE NO: 18
SCALE: 1" = 75'

SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC, IMAGE DATE: 2015.
SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.

OVERVIEW OF PROJECT


NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
 NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

Legend:

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination
- Sample Point Location
- Ohio River or Backwater Area
- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction
- NORTH



SOURCE: USDA FSA NATIONAL AGRICULTURAL IMAGERY PROGRAM (NAIP) HAMILTON COUNTY MOSAIC. IMAGE DATE: 2015.
SOURCE: CAGIS 2-FOOT INTERVAL ELEVATION CONTOURS.

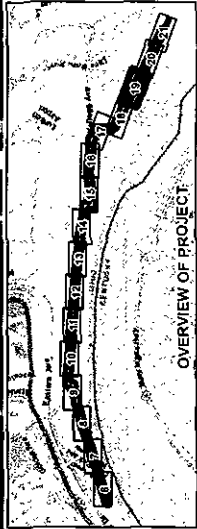


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WETLAND AND WATERBODY DELINEATION
AND PHOTOGRAPH LOCATION MAP


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DATE:	AUGUST 25, 2016	DWG SCALE:	1" = 75'
APPROVED BY:		PROJECT NO:	153-230
		FIGURE NO:	19



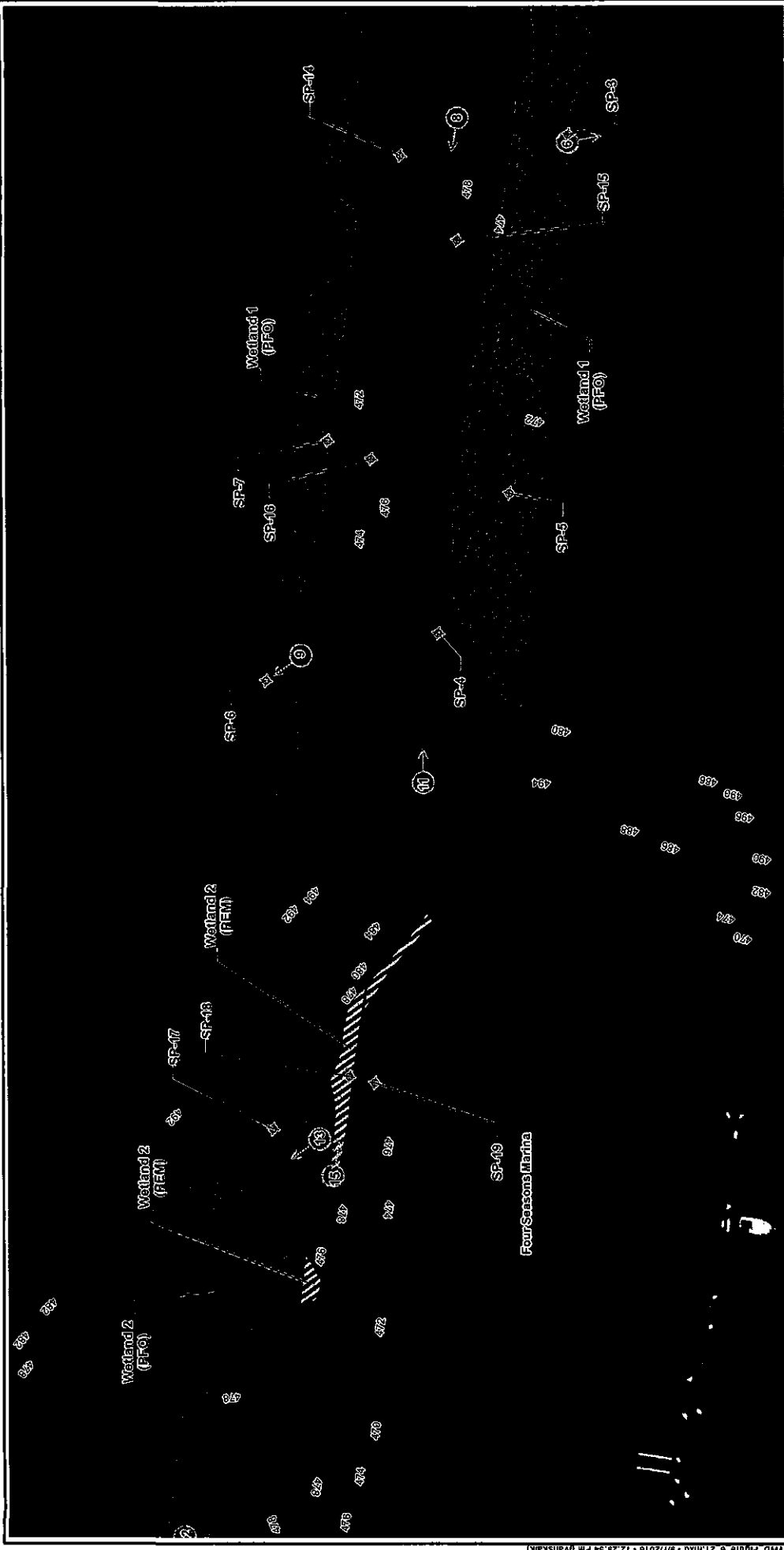
OVERVIEW OF PROJECT

Proposed Replacement Pipeline
Variable Width Study Corridor
Delineated Wetland
Palustrine Emergent (PEM)
Palustrine Forested (PFO)
Wetland Determination
Sample Point Location
Ohio River or Backwater Area

Existing Culvert
2-Foot Contour Interval
Photograph Location
and Direction

 NORTH

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
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WETLAND AND WATERBODY DELINEATION
AND PHOTOGRAPH LOCATION MAP

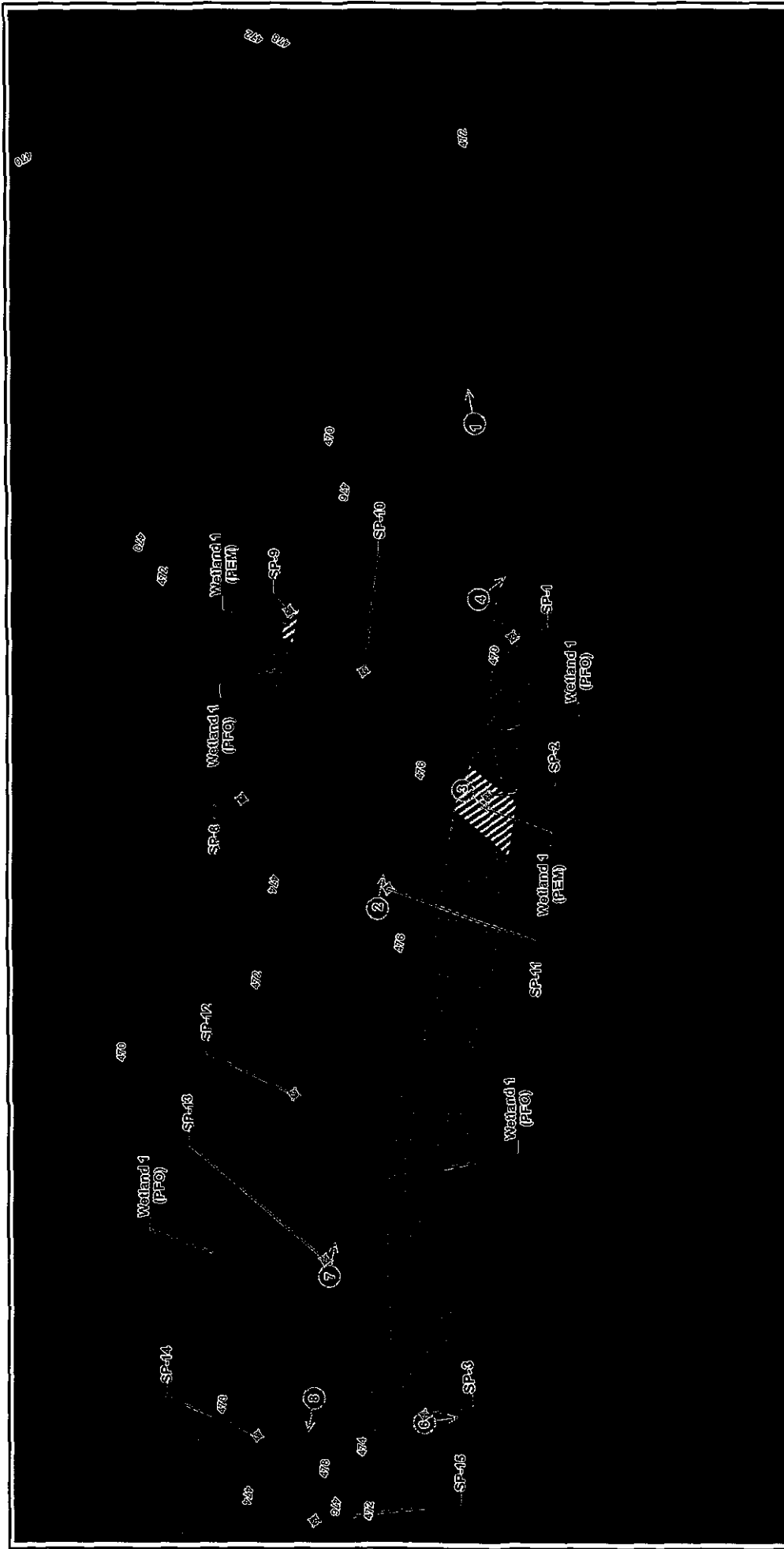
APPROVED BY: JAV **FIGURE NO:** 20
PROJECT NO: 153-230

OVERVIEW OF PROJECT

LEGEND

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination Sample Point Location
- Ohio River or Backwater Area
- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction
- NORTH

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN.
 NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.



Legend

- Proposed Replacement Pipeline
- Variable Width Study Corridor
- Delineated Wetland
- Palustrine Emergent (PEM)
- Palustrine Forested (PFO)
- Wetland Determination Sample Point Location
- Ohio River or Backwater Area
- Existing Culvert
- 2-Foot Contour Interval
- Photograph Location and Direction
- NORTH

OVERVIEW OF PROJECT

0 75 150 Feet

NOTES: FULL EXTENT OF STUDY CORRIDOR IS WITHIN 100-YEAR FLOODPLAIN
NO STREAMS OR WATERBODIES WERE IDENTIFIED WITHIN THE STUDY CORRIDOR.

DUKE ENERGY
LINE D0008 PIPELINE REPLACEMENT PROJECT
CINCINNATI, HAMILTON COUNTY, OHIO

Civil & Environmental Consultants, Inc.
5698 Montclair Boulevard - Cincinnati, OH 45150
513-985-0226 - 800-759-5614
www.ceciinc.com

DRAWN BY: JBF
DATE: AUGUST 25, 2016

CHECKED BY: JAV
DWG SCALE: 1" = 75'

APPROVED BY: JAV
PROJECT NO: 153-230

FIGURE NO: **21**
Signature on file

APPENDIX A

SITE PHOTOGRAPHS



Photograph 1. View of maintained Line D000B ROW, south of proposed southern terminus of Project. Photograph taken facing south-southeast.



Photograph 2. View of existing Line D000B ROW at the southern terminus of study corridor. Photograph taken facing south.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016

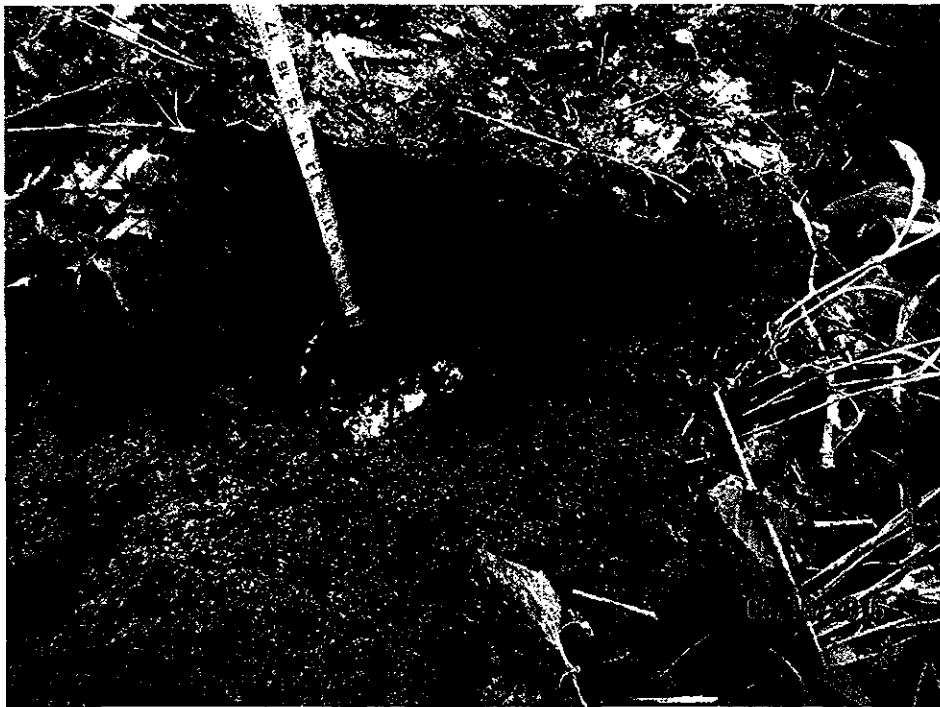


Photograph 3. Representative view of the PEM portion of Wetland 1.
Photograph taken facing north-northwest along existing, maintained utility ROW.



Photograph 4. Representative view of the PFO portion of Wetland 1 along the west side of the
Line D000B ROW near the southern terminus of the Project.
Photograph taken facing south-southwest.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016



Photograph 5. View of high water table at wetland determination SP-1.



Photograph 6. View of the PFO portion of Wetland 1 along the west side of the Line D000B ROW near the southern terminus of the Project.
Photograph taken facing west.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016



Photograph 7. Representative view of elevated and maintained ROW, bisecting Wetland 1 at wetland determination SP-6. Photograph taken facing south.

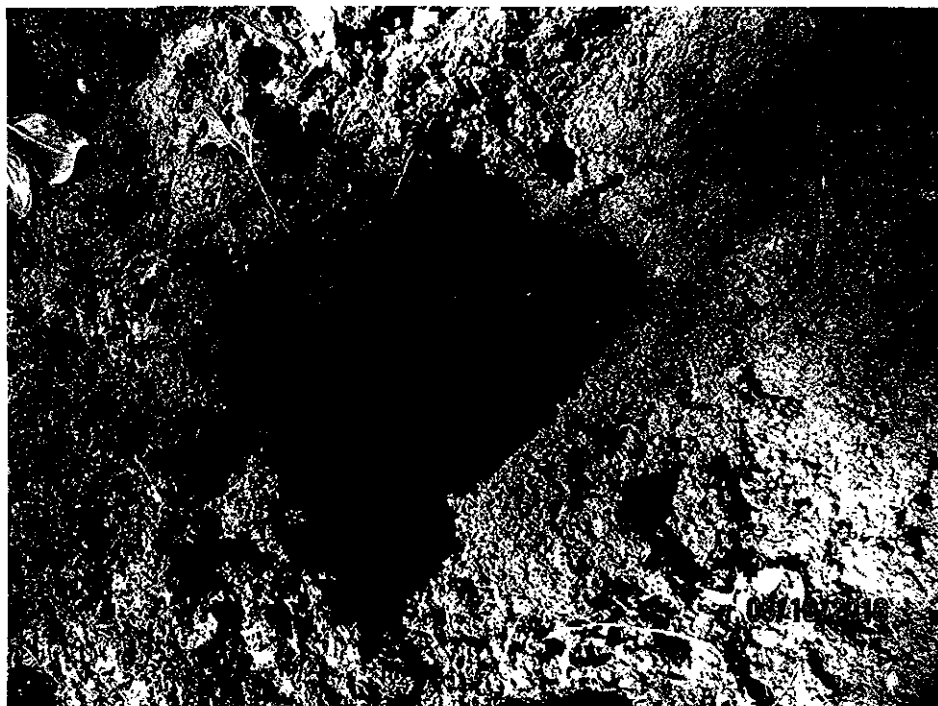


Photograph 8. Representative view of elevated and maintained Line D000B ROW, bisecting Wetland 1. Photograph taken facing north.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016



Photograph 9. Representative view of the PFO portion of Wetland 1 along the east side of the Line D000B ROW near the southern terminus of the Project.
Photograph taken facing northeast.



Photograph 10. View of high water table and low-chroma soil from wetland determination SP-8.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016



Photograph 11. Elevated view of existing bermed, maintained Line D000B ROW, bisecting Wetland 1. Photograph taken facing south.



Photograph 12. View of Wetland 2. Photograph taken facing east-northeast.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016



Photograph 13. View of Wetland 2. Photograph taken facing northeast.



Photograph 14. Hydric soil ped exhibiting redox features from wetland determination SP-17.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016



Photograph 15. View of the PEM portion of Wetland 2, facing south.



Photograph 16. View of Wetland 3, facing east-northeast.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016



Photograph 17. View of Wetland 4, facing southeast.



Photograph 18. View of Wetland 4, facing northeast.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016



Photograph 19. View of Wetland 5, facing east-northeast.



Photograph 20. View of Wetland 6, facing south-southwest.

Line D000B Pipeline Replacement Project
Cincinnati, Hamilton County, Ohio
CEC Project 153-230
Photographed on May 16, 18 and 19, 2016

APPENDIX B

WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/16/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-1
 Investigator(s): JAV/DMG (LEC) Section, Township, Range: S23, TIN, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.079135 Long: -84.427622 Datum: WGS84
 Soil Map Unit Name: Gn - Genesee loam, occasionally flooded NWI classification: PFO

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks: <u>Field confirmed wetland.</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<u> </u> Surface Water (A1)	<u> </u> True Aquatic Plants (B14)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u>X</u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Dry-Season Water Table (C2)
<u>X</u> Drift Deposits (B3)	<u> </u> Thin Muck Surface (C7)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Other (Explain in Remarks)	<u>X</u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)		<u> </u> Stunted or Stressed Plants (D1)
<u>X</u> Inundation Visible on Aerial Imagery (B7)		<u>X</u> Geomorphic Position (D2)
<u> </u> Water-Stained Leaves (B9)		<u> </u> Shallow Aquitard (D3)
<u> </u> Aquatic Fauna (B13)		<u>X</u> Microtopographic Relief (D4)
		<u>X</u> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u> </u> No <u> </u> Depth (inches): <u>N/A</u>		
Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>7"</u>		
Saturation Present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>Surface</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Strong wetland hydrology, tree trunk buttressing</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-1

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Plantanus occidentalis</u>	<u>70%</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)
2. <u>Acer saccharinum</u>	<u>35%</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Populus deltoides</u>	<u>20%</u>	<u>N</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>62.5</u> 125% = Total Cover 20% of total cover: <u>25</u>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>139</u> x 2 = <u>278</u> FAC species <u>49</u> x 3 = <u>147</u> FACU species <u>20</u> x 4 = <u>80</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>208</u> (A) <u>505</u> (B) Prevalence Index = B/A = <u>2.42</u>
Sapling/Shrub Stratum (Plot size: <u>15'R</u>)				
1. <u>Fraxinus pennsylvanica</u>	<u>3%</u>	<u>N</u>	<u>FACW</u>	
2. <u>Toxicodendron radicans</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
50% of total cover: _____ 5% = Total Cover 20% of total cover: _____				
Herb Stratum (Plot size: <u>5'R</u>)				
1. <u>Toxicodendron radicans</u>	<u>40%</u>	<u>Y</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Urtica dioica</u>	<u>20%</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Ambrosia typhoides</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>	
4. <u>Compositum ciliolosa</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>	
5. <u>Bidens frondosa</u>	<u>3%</u>	<u>N</u>	<u>FACW</u>	
6. <u>Hypericella nummularia</u>	<u>3%</u>	<u>N</u>	<u>FACW</u>	
7. _____	_____	_____	_____	
50% of total cover: <u>38</u> 76% = Total Cover 20% of total cover: <u>15.2</u>				
Woody Vine Stratum (Plot size: <u>30'R</u>)				
1. <u>Toxicodendron radicans</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>1%</u> 2% = Total Cover 20% of total cover: _____				

Remarks: (Include photo numbers here or on a separate sheet.)
stinging nettle encroaching from adjacent bermed upland ROW.

Sampling Point: SP-1

Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/16/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-2
 Investigator(s): JAV/DMG/PEC Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.079482 Long: -84.42763 Datum: WGS84
 Soil Map Unit Name: G1-Hemlock loam, occasionally flooded NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks: <u>Field confirmed wetland.</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <u> </u> Surface Water (A1) <u> </u> True Aquatic Plants (B14) <u> </u> High Water Table (A2) <u> </u> Hydrogen Sulfide Odor (C1) <u> </u> Saturation (A3) <u> </u> Oxidized Rhizospheres on Living Roots (C3) <u> </u> Water Marks (B1) <u> </u> Presence of Reduced Iron (C4) <u> </u> Sediment Deposits (B2) <u> </u> Recent Iron Reduction in Tilled Soils (C6) <u>X</u> Drift Deposits (B3) <u> </u> Thin Muck Surface (C7) <u> </u> Algal Mat or Crust (B4) <u> </u> Other (Explain in Remarks) <u> </u> Iron Deposits (B5) <u>X</u> Inundation Visible on Aerial Imagery (B7) <u> </u> Water-Stained Leaves (B9) <u> </u> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <u> </u> Surface Soil Cracks (B6) <u> </u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) <u> </u> Moss Trim Lines (B16) <u> </u> Dry-Season Water Table (C2) <u> </u> Crayfish Burrows (C8) <u>X</u> Saturation Visible on Aerial Imagery (C9) <u> </u> Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) <u> </u> Shallow Aquitard (D3) <u>X</u> Microtopographic Relief (D4) <u>X</u> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>N/A</u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u> (Includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Strong wetland hydrology indicators.</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-2

Tree Stratum (Plot size: <u>30' R</u>)				Absolute % Cover		Dominant Species?		Indicator Status	
1.	<u>Acer saccharum</u>	<u>25%</u>	<u>Y</u>	<u>FACW</u>					
2.	<u>Plantanus occidentalis</u>	<u>10%</u>	<u>Y</u>	<u>FACW</u>					
3.									
4.									
5.									
6.									
7.									

50% of total cover: 17.5

35% = Total Cover
 20% of total cover: 7

Sapling/Shrub Stratum (Plot size: <u>15' R</u>)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

50% of total cover: -

0% = Total Cover
20% of total cover: -

Herb Stratum (Plot size: <u>5' R</u>)			
1.	<u>Lysimachia nummularia</u>	<u>70%</u>	<u>Y</u> <u>FACW</u>
2.	<u>Blechmeria cylindrica</u>	<u>15%</u>	<u>N</u> <u>FACW</u>
3.	<u>Veronica gigantea</u>	<u>8%</u>	<u>N</u> <u>FAC</u>
4.	<u>Pachera glabella</u>	<u>5%</u>	<u>N</u> <u>OBL</u>
5.	<u>Ambrosia trifida</u>	<u>5%</u>	<u>N</u> <u>FAC</u>
6.	<u>Carex vulpularis</u>	<u>5%</u>	<u>N</u> <u>OBL</u>
7.	<u>Rumex crispus</u>	<u>5%</u>	<u>N</u> <u>FAC</u>
8.	<u>Toxicodendron radicans</u>	<u>5%</u>	<u>N</u> <u>FAC</u>
9.	<u>Urtica dioica</u>	<u>5%</u>	<u>N</u> <u>FACW</u>
10.	<u>Empetrum capense</u>	<u>3%</u>	<u>N</u> <u>FACW</u>
11.	<u>Amphispiza brevirostris</u>	<u>2%</u>	<u>N</u> <u>FAC</u>

50% of total cover: 66.5

133 = Total Cover
 20% of total cover: 26.2

Woody Vine Stratum (Plot size: <u>30' R</u>)			
1.	<u>Toxicodendron radicans</u>	<u>1%</u>	<u>N</u> <u>FAC</u>
2.			
3.			
4.			
5.			

50% of total cover: -

1% = Total Cover
20% of total cover: -

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

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 <u>10</u>	x 1 = <u>10</u>
FACW species <u>123</u>	x 2 = <u>246</u>
FAC species <u>31</u>	x 3 = <u>93</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>169</u> (A)	<u>369</u> (B)

Prevalence Index = B/A = 2.18

Hydrophytic Vegetation Indicators:

- ☒ 1 - Rapid Test for Hydrophytic Vegetation
- ☒ 2 - Dominance Test is >50%
- ☒ 3 - Prevalence Index is ≤3.0¹
- ☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

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

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

SOIL

Sampling Point: SP-2

[illegible]

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/16/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-3
 Investigator(s): JAV/DMG (CEC) Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.080826 Long: -84.427790 Datum: WGS 84
 Soil Map Unit Name: Gn-Hemlock, occasionally flooded NWI classification: PFO

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

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

Hydrophytic Vegetation Present?	Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>		
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>		
Remarks: <u>Field confirmed wetland.</u>			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)	
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)	
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)	
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)	
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)	
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Geomorphic Position (D2)	
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)	
<input type="checkbox"/> Aquatic Fauna (B13)		<input checked="" type="checkbox"/> Microtopographic Relief (D4)	
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes <u> </u> No <u>X</u> Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Water Table Present?	Yes <u> </u> No <u>X</u> Depth (inches): <u>212"</u>		
Saturation Present? (Includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u>212"</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: <u>Wetland hydrology observed.</u>			

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-3

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. <u>Acer saccharinum</u>	<u>85%</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. <u>Acer negundo</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>															
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
<u>90%</u> = Total Cover 50% of total cover: <u>45%</u> 20% of total cover: <u>18%</u>				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>195</u></td> <td>x 2 = <u>390</u></td> </tr> <tr> <td>FAC species <u>5</u></td> <td>x 3 = <u>15</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>200</u> (A)</td> <td><u>405</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.02</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>195</u>	x 2 = <u>390</u>	FAC species <u>5</u>	x 3 = <u>15</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>200</u> (A)	<u>405</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>195</u>	x 2 = <u>390</u>																	
FAC species <u>5</u>	x 3 = <u>15</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>200</u> (A)	<u>405</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'R</u>)																		
1. _____																		
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
<u>0%</u> = Total Cover 50% of total cover: <u>—</u> 20% of total cover: <u>—</u>																		
Herb Stratum (Plot size: <u>5'R</u>)																		
1. <u>Boehmeria cylindrica</u>	<u>70%</u>	<u>Y</u>	<u>FACW</u>	Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u>Leersia oryzoides</u>	<u>30%</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Impatiens capensis</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>															
4. <u>Carex grisea</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>															
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
<u>110%</u> = Total Cover 50% of total cover: <u>55%</u> 20% of total cover: <u>22%</u>																		
Woody Vine Stratum (Plot size: <u>30'R</u>)																		
1. _____																		
2. _____																		
3. _____																		
4. _____																		
5. _____																		
<u>0%</u> = Total Cover 50% of total cover: <u>—</u> 20% of total cover: <u>—</u>																		
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant hydrophytic vegetation.</u>																		

Sampling Point: SP-3

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- ___ 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)

- ☐ 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.

Type: N/A
Depth (inches): _____

Hydric Soil Present? Yes X No

Remarks: Field confirmed hydric soil.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Rine D000B City/County: Cincinnati/Ham Sampling Date: 5/16/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-4
 Investigator(s): JAV/DMG (CEC) Section, Township, Range: S23, TIN, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR N Lat: 39.081939 Long: -84.427704 Datum: WGS84
 Soil Map Unit Name: Gn - Henessee loam, occasionally flooded NWI classification: Upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: <u>upland sampling location with hydrophytic vegetation.</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u>		
Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u> (Includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		

Remarks:

upland hydrology observed.

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-4

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. <u>Acer negundo</u>	<u>40%</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. <u>Acer saccharinum</u>	<u>25%</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Populus deltoides</u>	<u>15%</u>	<u>N</u>	<u>FAC</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>26</u></td> <td>x 2 = <u>52</u></td> </tr> <tr> <td>FAC species <u>115</u></td> <td>x 3 = <u>345</u></td> </tr> <tr> <td>FACU species <u>10</u></td> <td>x 4 = <u>40</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>151</u> (A)</td> <td><u>437</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.89</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>26</u>	x 2 = <u>52</u>	FAC species <u>115</u>	x 3 = <u>345</u>	FACU species <u>10</u>	x 4 = <u>40</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>151</u> (A)	<u>437</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>26</u>	x 2 = <u>52</u>																	
FAC species <u>115</u>	x 3 = <u>345</u>																	
FACU species <u>10</u>	x 4 = <u>40</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>151</u> (A)	<u>437</u> (B)																	
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
50% of total cover: <u>40%</u> 80% = Total Cover 20% of total cover: <u>16%</u>				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
Sapling/Shrub Stratum (Plot size: <u>15'R</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.														
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
50% of total cover: _____ 0% = Total Cover 20% of total cover: _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														
Herb Stratum (Plot size: <u>5'R</u>)																		
1. <u>Verbesina alternifolia</u>	<u>40%</u>	<u>Y</u>	<u>FAC</u>															
2. <u>Amphicarpaea baccata</u>	<u>15%</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Urtica dioica</u>	<u>10%</u>	<u>N</u>	<u>FACU</u>	Woody Vine Stratum (Plot size: <u>30'R</u>)														
4. <u>Ambrosia trifida</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>															
5. <u>Viola sororia</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____	50% of total cover: <u>34.5%</u> 67% = Total Cover 20% of total cover: <u>13.8%</u>														
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
50% of total cover: _____ 2% = Total Cover 20% of total cover: _____				Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant hydrophytic vegetation.</u>														
Woody Vine Stratum (Plot size: <u>30'R</u>)																		
1. <u>Vitis riparia</u>	<u>1%</u>	<u>N</u>	<u>FACW</u>															
2. <u>Toxicodendron radicans</u>	<u>1%</u>	<u>N</u>	<u>FAC</u>															
3. _____	_____	_____	_____	50% of total cover: _____ 2% = Total Cover 20% of total cover: _____														
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															

Sampling Point: SP-4

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- ___ 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**)
- ___ Umbria Surface (F13) (**MLRA 136, 122**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 148**)
- ___ Red Parent Material (F21) (**MLRA 127, 147**)

- ☐ 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.

Type: S/A
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

upland soil facing.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/16/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-5
 Investigator(s): JAV/DMG (CEC) Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.081612 Long: -84.427824 Datum: WGS84
 Soil Map Unit Name: Gn - Hennessee loam, occasionally flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks: <u>Field confirmed wetland.</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input checked="" type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u>		
Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u> (includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Wetland hydrology observed.</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-5

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. <u>Populus deltoides</u>	<u>25%</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)														
2. <u>Plantanus occidentalis</u>	<u>25%</u>	<u>Y</u>	<u>FACW</u>															
3. <u>Acer saccharinum</u>	<u>10%</u>	<u>N</u>	<u>FACW</u>															
4. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)														
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)														
50% of total cover: <u>30%</u> 20% of total cover: <u>12%</u>																		
65% = Total Cover																		
Sapling/Shrub Stratum (Plot size: <u>15'R</u>)				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>75</u></td> <td>x 2 = <u>150</u></td> </tr> <tr> <td>FAC species <u>38</u></td> <td>x 3 = <u>114</u></td> </tr> <tr> <td>FACU species <u>40</u></td> <td>x 4 = <u>160</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>153</u> (A)</td> <td><u>424</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.77</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>75</u>	x 2 = <u>150</u>	FAC species <u>38</u>	x 3 = <u>114</u>	FACU species <u>40</u>	x 4 = <u>160</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>153</u> (A)	<u>424</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>75</u>	x 2 = <u>150</u>																	
FAC species <u>38</u>	x 3 = <u>114</u>																	
FACU species <u>40</u>	x 4 = <u>160</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>153</u> (A)	<u>424</u> (B)																	
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
50% of total cover: _____ 20% of total cover: _____																		
0% = Total Cover																		
Herb Stratum (Plot size: <u>5'R</u>)				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) _____ Problematic Hydrophytic Vegetation ¹ (Explain)														
1. <u>Boehmeria cylindrica</u>	<u>40%</u>	<u>Y</u>	<u>FACW</u>															
2. <u>Urtica dioica</u>	<u>40%</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Amphicarpaea bracteata</u>	<u>8%</u>	<u>N</u>	<u>FAC</u>															
4. <u>Verbesina alternifolia</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
50% of total cover: <u>46.5%</u> 20% of total cover: <u>18.6%</u>																		
93% = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'R</u>)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
50% of total cover: _____ 20% of total cover: _____																		
0% = Total Cover																		
50% of total cover: _____ 20% of total cover: _____																		
0% = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant hydrophytic vegetation.</u>																		

SOIL

Sampling Point: SP-5

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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)

- ☐ 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)

Indicators for Problematic Hydric Soils³:

- ☐ 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: N/A

Depth (Inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil forming.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/16/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-6
 Investigator(s): JAV/DMG(CCC) Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.082112 Long: -84.427259 Datum: WGS84
 Soil Map Unit Name: Gn - Genesee loam, occasionally flooded NWI classification: PFO

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks: <u>Field confirmed wetland.</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
<u>Primary Indicators (minimum of one is required; check all that apply)</u>		
<u> </u> Surface Water (A1)	<u> </u> True Aquatic Plants (B14)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Hydrogen Sulfide Odor (C1)	<u>X</u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u>X</u> Drainage Patterns (B10)
<u>X</u> Water Marks (B1)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Dry-Season Water Table (C2)
<u>X</u> Drift Deposits (B3)	<u> </u> Thin Muck Surface (C7)	<u>X</u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Other (Explain in Remarks)	<u>X</u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)		<u>X</u> Stunted or Stressed Plants (D1)
<u>X</u> Inundation Visible on Aerial Imagery (B7)		<u>X</u> Geomorphic Position (D2)
<u>X</u> Water-Stained Leaves (B9)		<u> </u> Shallow Aquitard (D3)
<u> </u> Aquatic Fauna (B13)		<u>X</u> Microtopographic Relief (D4)
		<u>X</u> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u> </u> No <u>X</u> Depth (Inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Water Table Present? Yes <u> </u> No <u>X</u> Depth (Inches): <u>212"</u>		
Saturation Present? Yes <u>X</u> No <u> </u> Depth (Inches): <u>7"</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Tree trunk buttressing</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-6

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. <u>Acer saccharum</u>	<u>65%</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66%</u> (A/B)														
2. <u>Populus deltoides</u>	<u>30%</u>	<u>Y</u>	<u>FAC</u>															
3.																		
4.																		
5.																		
6.																		
7.																		
50% of total cover: <u>47.5%</u> 20% of total cover: <u>19%</u>				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>65</u></td> <td>x 2 = <u>130</u></td> </tr> <tr> <td>FAC species <u>34</u></td> <td>x 3 = <u>102</u></td> </tr> <tr> <td>FACU species <u>6</u></td> <td>x 4 = <u>24</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>256</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.43</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>65</u>	x 2 = <u>130</u>	FAC species <u>34</u>	x 3 = <u>102</u>	FACU species <u>6</u>	x 4 = <u>24</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>105</u> (A)	<u>256</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>65</u>	x 2 = <u>130</u>																	
FAC species <u>34</u>	x 3 = <u>102</u>																	
FACU species <u>6</u>	x 4 = <u>24</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>105</u> (A)	<u>256</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'R</u>)																		
1.																		
2.																		
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
50% of total cover: <u>0%</u> 20% of total cover: <u>0%</u>				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation 2 2 - Dominance Test is >50% 3 3 - Prevalence Index is ≤3.0 ¹ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain)														
Herb Stratum (Plot size: <u>5'R</u>)																		
1. <u>Urtica dioica</u>	<u>6%</u>	<u>Y</u>	<u>FACU</u>															
2. <u>Toxicodendron radicans</u>	<u>3%</u>	<u>N</u>	<u>FAC</u>															
3.																		
4.																		
5.																		
6.																		
7.																		
8.																		
9.																		
10.																		
11.																		
50% of total cover: <u>4.5%</u> 20% of total cover: <u>1%</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.														
Woody Vine Stratum (Plot size: <u>30'R</u>)																		
1. <u>Toxicodendron radicans</u>	<u>1%</u>	<u>N</u>	<u>FAC</u>															
2.																		
3.																		
4.																		
5.																		
50% of total cover: <u>1%</u> 20% of total cover: <u>0%</u>																		
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant hydrophytic vegetation.</u>																		

SOIL

Sampling Point: SP-6

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: 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)

- ☐ 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)

Indicators for Problematic Hydric Soils³:

- ☐ 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: N/A
Depth (inches): _____

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

Remarks:

Hydric soil facing.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000 B City/County: Cincinnati/Hamilton Sampling Date: 6/18/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-7
 Investigator(s): JAV/DMG (CEC) Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.081577 Long: -84.427300 Datum: wgs 84
 Soil Map Unit Name: Gn-Henesee loam, occasionally flooded NWI classification: PFO

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks: <u>Field confirmed wetland</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<u> </u> Surface Water (A1)	<u> </u> True Aquatic Plants (B14)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u>X</u> Saturation (A3)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u>X</u> Drainage Patterns (B10)
<u>X</u> Water Marks (B1)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Thin Muck Surface (C7)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Other (Explain in Remarks)	<u>X</u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)		<u> </u> Stunted or Stressed Plants (D1)
<u>X</u> Inundation Visible on Aerial Imagery (B7)		<u>X</u> Geomorphic Position (D2)
<u>X</u> Water-Stained Leaves (B9)		<u> </u> Shallow Aquitard (D3)
<u> </u> Aquatic Fauna (B13)		<u> </u> Microtopographic Relief (D4)
		<u>X</u> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Water Table Present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6"</u>		
Saturation Present? (includes capillary fringe) Yes <u>X</u> No <u> </u> Depth (inches): <u>surface</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Wetland hydrology observed.</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-7

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. <u>Acer saccharinum</u>	<u>85%</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)														
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)														
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)														
4. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>85</u></td> <td>x 2 = <u>170</u></td> </tr> <tr> <td>FAC species <u>3</u></td> <td>x 3 = <u>9</u></td> </tr> <tr> <td>FACU species <u>3</u></td> <td>x 4 = <u>12</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>91</u></td> <td>(A) <u>191</u> (B)</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>85</u>	x 2 = <u>170</u>	FAC species <u>3</u>	x 3 = <u>9</u>	FACU species <u>3</u>	x 4 = <u>12</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>91</u>	(A) <u>191</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>85</u>	x 2 = <u>170</u>																	
FAC species <u>3</u>	x 3 = <u>9</u>																	
FACU species <u>3</u>	x 4 = <u>12</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>91</u>	(A) <u>191</u> (B)																	
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
50% of total cover: <u>42.5</u> 20% of total cover: <u>17</u> <u>85%</u> = Total Cover				Prevalence Index = B/A = <u>2.09</u>														
Sapling/Shrub Stratum (Plot size: <u>15'R</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
50% of total cover: <u>0%</u> 20% of total cover: <u>0%</u> <u>0%</u> = Total Cover				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
Herb Stratum (Plot size: <u>5'R</u>)																		
1. <u>Tobriodendron radicans</u>	<u>3%</u>	<u>N</u>	<u>FAC</u>															
2. <u>Urtica dioica</u>	<u>3%</u>	<u>N</u>	<u>FAC</u>															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
50% of total cover: <u>0%</u> 20% of total cover: <u>0%</u> <u>6%</u> = Total Cover																		
Woody Vine Stratum (Plot size: <u>30'R</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
50% of total cover: <u>0%</u> 20% of total cover: <u>0%</u> <u>0%</u> = Total Cover																		
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant hydrophytic vegetation</u>																		

Sampling Point: SP-7

Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/18/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-8
 Investigator(s): JAV/DMG/CCC Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.079592 Long: -84.426960 Datum: WGS84
 Soil Map Unit Name: Gn-Henessee loam, occasionally flooded NWI classification: PFO

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No

Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>		
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>		
Remarks: <u>Field confirmed wetland.</u>			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<u> </u> Surface Water (A1)	<u> </u> True Aquatic Plants (B14)	<u> </u> Surface Soil Cracks (B6)	
<u>X</u> High Water Table (A2)	<u> </u> Hydrogen Sulfide Odor (C1)	<u>X</u> Drainage Patterns (B10)	
<u>X</u> Saturation (A3)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Moss Trim Lines (B16)	
<u>X</u> Water Marks (B1)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Dry-Season Water Table (C2)	
<u>X</u> Sediment Deposits (B2)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Crayfish Burrows (C8)	
<u> </u> Drift Deposits (B3)	<u> </u> Thin Muck Surface (C7)	<u>X</u> Saturation Visible on Aerial Imagery (C9)	
<u> </u> Algal Mat or Crust (B4)	<u> </u> Other (Explain in Remarks)	<u> </u> Stunted or Stressed Plants (D1)	
<u> </u> Iron Deposits (B5)		<u>X</u> Geomorphic Position (D2)	
<u>X</u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Shallow Aquitard (D3)	
<u>X</u> Water-Stained Leaves (B9)		<u>X</u> Microtopographic Relief (D4)	
<u> </u> Aquatic Fauna (B13)		<u>X</u> FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes <u> </u> No <u>X</u> Depth (Inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Water Table Present?	Yes <u>X</u> No <u> </u> Depth (Inches): <u>7"</u>		
Saturation Present? (Includes capillary fringe)	Yes <u>X</u> No <u> </u> Depth (Inches): <u>5"</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: <u>Wetland hydrology observed.</u>			

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-8

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Acer saccharinum</u>	<u>80%</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>40</u> x 1 = <u>40</u> FACW species <u>82</u> x 2 = <u>164</u> FAC species <u>2</u> x 3 = <u>6</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>134</u> (A) <u>250</u> (B) Prevalence Index = B/A = <u>1.86</u>
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>40%</u> 20% of total cover: <u>16%</u> 80% = Total Cover				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Sapling/Shrub Stratum (Plot size: <u>15'R</u>)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. <u>Fraxinus pennsylvanica</u>	<u>2%</u>	<u>N</u>	<u>FACW</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
50% of total cover: _____ 20% of total cover: _____ 2% = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Herb Stratum (Plot size: <u>5'R</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
1. <u>Saururus cernuus</u>	<u>35%</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Urtica dioica</u>	<u>10%</u>	<u>N</u>	<u>FACU</u>	
3. <u>Ludwigia palustris</u>	<u>5%</u>	<u>N</u>	<u>OBL</u>	
4. <u>Toxicodendron radicans</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>26%</u> 20% of total cover: <u>10.4%</u> 52% = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Woody Vine Stratum (Plot size: <u>30'R</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
50% of total cover: _____ 20% of total cover: _____ 0% = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant hydrophytic vegetation.</u>				

Sampling Point: SP-8

Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/18/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-9
 Investigator(s): JAV/DMG (CEC) Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR N Lat: 39.079171 Long: -84.426992 Datum: wgs84
 Soil Map Unit Name: Gn-Henesees loam, occasionally flooded RWT Classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>		
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>		
Remarks: <u>Field confirmed wetland.</u>			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input checked="" type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present?	Yes <u> </u> No <u>X</u> Depth (Inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Water Table Present?	Yes <u> </u> No <u>X</u> Depth (Inches): <u>> 14"</u>	
Saturation Present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (Inches): <u>> 14"</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>wetland hydrology observed</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-9

Tree Stratum (Plot size: <u>30' R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. <u>Platanus occidentalis</u>	<u>10%</u>	<u>Y</u>	<u>FACU</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)														
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)														
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)														
4. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>27</u></td> <td>x 1 = <u>27</u></td> </tr> <tr> <td>FACW species <u>12</u></td> <td>x 2 = <u>24</u></td> </tr> <tr> <td>FAC species <u>26</u></td> <td>x 3 = <u>78</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>2</u></td> <td>x 5 = <u>10</u></td> </tr> <tr> <td>Column Totals: <u>67</u></td> <td>(A) <u>139</u> (B)</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>27</u>	x 1 = <u>27</u>	FACW species <u>12</u>	x 2 = <u>24</u>	FAC species <u>26</u>	x 3 = <u>78</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>2</u>	x 5 = <u>10</u>	Column Totals: <u>67</u>	(A) <u>139</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>27</u>	x 1 = <u>27</u>																	
FACW species <u>12</u>	x 2 = <u>24</u>																	
FAC species <u>26</u>	x 3 = <u>78</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>2</u>	x 5 = <u>10</u>																	
Column Totals: <u>67</u>	(A) <u>139</u> (B)																	
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
50% of total cover: <u>5%</u> 10% = Total Cover 20% of total cover: <u>2%</u>				Prevalence Index = B/A = <u>2.07</u>														
Sapling/Shrub Stratum (Plot size: <u>15' R</u>)																		
1. <u>Acer rubrum</u>	<u>1%</u>	<u>N</u>	<u>FAC</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
50% of total cover: _____ 1% = Total Cover 20% of total cover: _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
Herb Stratum (Plot size: <u>5' R</u>)																		
1. <u>Pachira gestella</u>	<u>25%</u>	<u>Y</u>	<u>OBL</u>															
2. <u>Vernonia gigantea</u>	<u>20%</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Rumex crispus</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>															
4. <u>Ludwigia palustris</u>	<u>2%</u>	<u>N</u>	<u>OBL</u>															
5. <u>Plantago lanceolata</u>	<u>2%</u>	<u>N</u>	<u>UPL</u>	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.														
6. <u>Pennisetum maculosa</u>	<u>2%</u>	<u>N</u>	<u>FACW</u>															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
50% of total cover: _____ = Total Cover 20% of total cover: _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____														
Woody Vine Stratum (Plot size: <u>30' R</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____	50% of total cover: _____ = Total Cover 20% of total cover: _____														
50% of total cover: _____ 20% of total cover: _____																		

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

PEM community within adjacent utility ROW.

SOIL

Sampling Point: SP-9

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/18/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-10
 Investigator(s): JAN/DMG (DEC) Section, Township, Range: S23, TIN, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.074269 Long: -84.427226 Datum: WGS 84
 Soil Map Unit Name: Gn - Genesee loam, occasionally flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: <u>upland sampling location with hydric soil</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>N/A</u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u> (Includes capillary fringe)	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>None observed.</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-10

Tree Stratum (Plot size: <u>30'R</u>)				Absolute % Cover		Dominant Species?		Indicator Status	
1.	<u>Populus deltoides</u>	15%	Y	FAC					
2.									
3.									
4.									
5.									
6.									
7.									
		15% = Total Cover							
		50% of total cover: —		20% of total cover: —					
Sapling/Shrub Stratum (Plot size: <u>15'R</u>)									
1.									
2.									
3.									
4.									
5.									
6.									
7.									
8.									
9.									
		0% = Total Cover							
		50% of total cover: —		20% of total cover: —					
Herb Stratum (Plot size: <u>5'R</u>)									
1.	<u>Vernonia gigantea</u>	25%	Y	FAC					
2.	<u>Urtica dioica</u>	25%	Y	FACU					
3.	<u>Eragrostis ciliaris</u>	20%	Y	FACU					
4.	<u>Verbesina alternifolia</u>	5%	N	FAC					
5.	<u>Amphicarpaea bracteata</u>	4%	N	FAC					
6.	<u>Plantago major</u>	4%	N	UPL					
7.	<u>Rumex crispus</u>	4%	N	FAC					
8.	<u>Galium aparine</u>	4%	N	FACU					
9.	<u>Oxalis stricta</u>	4%	N	FACU					
10.	<u>Toxicodendron radicans</u>	2%	N	FAC					
11.	<u>Pachira glabella</u>	2%	N	OBL					
		99% = Total Cover							
		50% of total cover: <u>49.5</u>		20% of total cover: <u>19.8</u>					
Woody Vine Stratum (Plot size: <u>30'R</u>)									
1.									
2.									
3.									
4.									
5.									
		0% = Total Cover							
		50% of total cover: —		20% of total cover: —					

Dominance Test worksheet:
 Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
 Total Number of Dominant Species Across All Strata: 4 (B)
 Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>2</u>	x 1 = <u>2</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>55</u>	x 3 = <u>165</u>
FACU species <u>53</u>	x 4 = <u>212</u>
UPL species <u>4</u>	x 5 = <u>20</u>
Column Totals: <u>114</u> (A)	<u>399</u> (B)

 Prevalence Index = B/A = 3.5

Hydrophytic Vegetation Indicators:
☐ 1 - Rapid Test for Hydrophytic Vegetation
☐ 2 - Dominance Test is >50%
☐ 3 - Prevalence Index is ≤3.0¹
☐ 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:
Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

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

Sampling Point: SP-10

Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/18/2016
 Applicant/Owner: Duke Energy (CEC) State: OH Sampling Point: SP-11
 Investigator(s): JAV/DMG Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.079720 Long: -84.427411 Datum: WGS84
 Soil Map Unit Name: Gn-Hershey loam, occasionally flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: <u>upland sampling location.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ True Aquatic Plants (B14) ___ High Water Table (A2) ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1) ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3) ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4) ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>N/A</u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>14"</u> Saturation Present? (includes capillary fringe) Yes <u> </u> No <u>X</u> Depth (inches): <u>>14"</u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>upland hydrology observed.</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-11

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. <u>Acer saccharum</u>	<u>5%</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)														
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)														
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)														
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
50% of total cover: <u>5%</u> = Total Cover 20% of total cover: <u>—</u>				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>21</u></td> <td>x 2 = <u>42</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>15</u></td> <td>x 5 = <u>75</u></td> </tr> <tr> <td>Column Totals: <u>126</u> (A)</td> <td><u>477</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.78</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>21</u>	x 2 = <u>42</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>90</u>	x 4 = <u>360</u>	UPL species <u>15</u>	x 5 = <u>75</u>	Column Totals: <u>126</u> (A)	<u>477</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>21</u>	x 2 = <u>42</u>																	
FAC species <u>0</u>	x 3 = <u>0</u>																	
FACU species <u>90</u>	x 4 = <u>360</u>																	
UPL species <u>15</u>	x 5 = <u>75</u>																	
Column Totals: <u>126</u> (A)	<u>477</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'R</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
50% of total cover: <u>—</u> <u>0%</u> = Total Cover 20% of total cover: <u>—</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
Herb Stratum (Plot size: <u>5'R</u>)																		
1. <u>Festuca arundinacea</u>	<u>70%</u>	<u>Y</u>	<u>FACU</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
2. <u>Lamium amplexicaule</u>	<u>15%</u>	<u>N</u>	<u>UPL</u>															
3. <u>Cyperus esculentus</u>	<u>10%</u>	<u>N</u>	<u>FACW</u>	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.														
4. <u>Trifolium repens</u>	<u>10%</u>	<u>N</u>	<u>FACU</u>															
5. <u>Plantago major</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>															
6. <u>Lysimachia humulata</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>															
7. <u>Arum canadense</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
50% of total cover: <u>60</u> <u>120%</u> = Total Cover 20% of total cover: <u>24</u>																		
Woody Vine Stratum (Plot size: <u>30'R</u>)																		
1. <u>Vitis riparia</u>	<u>1%</u>	<u>N</u>	<u>FACW</u>	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
50% of total cover: <u>—</u> <u>1%</u> = Total Cover 20% of total cover: <u>—</u>																		
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant upland vegetation.</u>																		

Sampling Point: SP-11

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- ☐ 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.

Type: N/A
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Upland soil fauna.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000 B City/County: Cincinnati/Hamilton Sampling Date: 5/18/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-12
 Investigator(s): JAV/DMG (DEC) Section, Township, Range: S23, TIN, RSE
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 2%
 Subregion (LRR or MLRA): LRR N Lat: 39.080197 Long: -84.427264 Datum: wgs84
 Soil Map Unit Name: Gn - Senessee loam, occasionally flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: <u>upland sampling location.</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u>		
Saturation Present? (includes capillary fringe) Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-12

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Ulmus americana</u>	<u>15%</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. <u>Acer saccharinum</u>	<u>10%</u>	<u>Y</u>	<u>FACW</u>	
3. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	Prevalence Index worksheet:
<div style="text-align: right;"> <u>25%</u> = Total Cover 50% of total cover: <u>12.5%</u> 20% of total cover: <u>-</u> </div>				
Sapling/Shrub Stratum (Plot size: <u>15'R</u>)				Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>31</u> x 2 = <u>62</u> FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>72</u> x 4 = <u>288</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>128</u> (A) <u>425</u> (B) Prevalence Index = B/A = <u>3.32</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid-Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
7. _____	_____	_____	_____	
<div style="text-align: right;"> <u>0%</u> = Total Cover 50% of total cover: <u>-</u> 20% of total cover: <u>-</u> </div>				
Herb Stratum (Plot size: <u>5'R</u>)				
1. <u>Urtica dioica</u>	<u>50%</u>	<u>Y</u>	<u>FACU</u>	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Festuca arundinacea</u>	<u>20%</u>	<u>Y</u>	<u>FACU</u>	
3. <u>Viola sororia</u>	<u>15%</u>	<u>N</u>	<u>FAC</u>	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
4. <u>Amphicarpaea bracteata</u>	<u>10%</u>	<u>N</u>	<u>FAC</u>	
5. <u>Clematis capensis</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
6. <u>Salix spirale</u>	<u>2%</u>	<u>N</u>	<u>FACU</u>	
7. <u>Lysmachia nummularia</u>	<u>1%</u>	<u>N</u>	<u>FACW</u>	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	Woody vine – All woody vines greater than 3.28 ft in height.
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
<div style="text-align: right;"> <u>103%</u> = Total Cover 50% of total cover: <u>51.5</u> 20% of total cover: <u>20.6</u> </div>				
Woody Vine Stratum (Plot size: <u>30'R</u>)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<div style="text-align: right;"> <u>0%</u> = Total Cover 50% of total cover: <u>-</u> 20% of total cover: <u>-</u> </div>				
Remarks: (Include photo numbers here or on a separate sheet.)				
<u>Dominant upland vegetation.</u>				

Sampling Point: SP-12

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- ___ 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)

- ☐ 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.

Type: N/A
Depth (Inches): _____

Hydric Soil Present? Yes ☐ No ☒

upland soil facing.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/Country: Cincinnati/Hamilton Sampling Date: 5/18/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-13
 Investigator(s): JAV/DMG/DEC Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.080537 Long: -84.427435 Datum: WGS84
 Soil Map Unit Name: Gn-Hemlock loam, occasionally flooded NWI classification: Upland

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

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: <u>upland sampling location.</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water Table Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>>12"</u>	
Saturation Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>>12"</u>	
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>upland hydrology observed.</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-13

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. <u>Populus deltoides</u>	<u>15%</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)														
2. <u>Celtis occidentalis</u>	<u>10%</u>	<u>Y</u>	<u>FACU</u>															
3. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)														
4. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33%</u> (A/B)														
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
50% of total cover: <u>12.5</u> 25% = Total Cover 20% of total cover: <u>—</u>				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>2</u></td> <td>x 2 = <u>4</u></td> </tr> <tr> <td>FAC species <u>42</u></td> <td>x 3 = <u>126</u></td> </tr> <tr> <td>FACU species <u>95</u></td> <td>x 4 = <u>380</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>139</u> (A)</td> <td><u>510</u> (B)</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>2</u>	x 2 = <u>4</u>	FAC species <u>42</u>	x 3 = <u>126</u>	FACU species <u>95</u>	x 4 = <u>380</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>139</u> (A)	<u>510</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>2</u>	x 2 = <u>4</u>																	
FAC species <u>42</u>	x 3 = <u>126</u>																	
FACU species <u>95</u>	x 4 = <u>380</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>139</u> (A)	<u>510</u> (B)																	
Sapling/Shrub Stratum (Plot size: <u>15'R</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____				Prevalence Index = B/A = <u>3.66</u> Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)														
50% of total cover: <u>—</u> 0% = Total Cover 20% of total cover: <u>—</u>				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.														
Herb Stratum (Plot size: <u>5'R</u>) 1. <u>Festuca arundinacea</u> <u>70%</u> <u>Y</u> <u>FACU</u> 2. <u>Vicia sororia</u> <u>15%</u> <u>N</u> <u>FAC</u> 3. <u>Trifolium repens</u> <u>10%</u> <u>N</u> <u>FACU</u> 4. <u>Amphicarpaea bracteata</u> <u>10%</u> <u>N</u> <u>FAC</u> 5. <u>Plantago major</u> <u>3%</u> <u>N</u> <u>FACU</u> 6. <u>Verbena alternifolia</u> <u>2%</u> <u>N</u> <u>FAC</u> 7. <u>Eriogonum annuum</u> <u>2%</u> <u>N</u> <u>FACU</u> 8. <u>Lysimachia nummularia</u> <u>2%</u> <u>N</u> <u>FACU</u> 9. _____ 10. _____ 11. _____																		
50% of total cover: <u>57</u> 114 = Total Cover 20% of total cover: <u>22.8</u>				Hydrophytic Vegetation Present? Yes <u>—</u> No <u>X</u>														
Woody Vine Stratum (Plot size: <u>30'R</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____																		
50% of total cover: <u>—</u> 0% = Total Cover 20% of total cover: <u>—</u>																		
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant upland vegetation.</u>																		

Sampling Point: SP-13

Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/18/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-14
 Investigator(s): JAV/DMG (CSC) Section, Township, Range: S23, TIN, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.080941 Long: -84.427346 Datum: WGS84
 Soil Map Unit Name: Gm - Henssle loam, occasionally flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: <u>upland sampling location with hydrophytic woody vegetation.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ True Aquatic Plants (B14) ___ High Water Table (A2) ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1) ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3) ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4) ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>N/A</u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>upland hydrology observed</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-14

Tree Stratum (Plot size: <u>30' R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Populus deltoides</u>	<u>15%</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. <u>Acer saccharum</u>	<u>10%</u>	<u>Y</u>	<u>FACW</u>	
3.				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
4.				
5.				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66%</u> (A/B)
6.				
7.				
50% of total cover: <u>12.5</u> 25% = Total Cover 20% of total cover: <u>-</u>				Prevalence Index worksheet: Total % Cover of: <u>0</u> Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>37</u> x 3 = <u>111</u> FACU species <u>85</u> x 4 = <u>340</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>132</u> (A) <u>471</u> (B) Prevalence Index = B/A = <u>3.56</u>
Sapling/Shrub Stratum (Plot size: <u>15' R</u>) 1. 2. 3. 4. 5. 6. 7. 8. 9.				
50% of total cover: <u>-</u> = Total Cover 20% of total cover: <u>-</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
Herb Stratum (Plot size: <u>5' R</u>) 1. <u>Urtica dioica</u> <u>85%</u> <u>Y</u> <u>FACU</u> 2. <u>Amphicarpaea bracteata</u> <u>10%</u> <u>N</u> <u>FAC</u> 3. <u>Viola sororia</u> <u>10%</u> <u>N</u> <u>FAC</u> 4. 5. 6. 7. 8. 9. 10. 11.				
50% of total cover: <u>-</u> = Total Cover 20% of total cover: <u>-</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
Woody Vine Stratum (Plot size: <u>30' R</u>) 1. <u>Toblerodendron radicans</u> <u>2%</u> <u>N</u> <u>FAC</u> 2. 3. 4. 5.				
50% of total cover: <u>-</u> = Total Cover 20% of total cover: <u>-</u>				Hydrophytic Vegetation Present? Yes <u>X</u> No <u>-</u>
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant hydrophytic vegetation.</u>				

SOIL

Sampling Point: SP-14

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cumming/Hamilton Sampling Date: 5/18/2016
 Applicant/Owner: Duke Energy State: GA Sampling Point: SP-15
 Investigator(s): JAV/DMG (CEC) Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: Long: Datum: WGS84
 Soil Map Unit Name: Gm - Henessee loam, occasionally flooded NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (if needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u></u>	Is the Sampled Area within a Wetland? Yes <u></u> No <u>X</u>
Hydric Soil Present? Yes <u></u> No <u>X</u>	
Wetland Hydrology Present? Yes <u></u> No <u>X</u>	
Remarks: <u>upland sampling location with dominant woody hydrophytic vegetation.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (Inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (Inches): <u>212"</u> Saturation Present? Yes <u></u> No <u>X</u> Depth (Inches): <u>212"</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u></u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>upland hydrology</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: SP-15

Tree Stratum (Plot size: <u>30'R</u>)				Dominance Test worksheet:	
	Absolute % Cover	Dominant Species?	Indicator Status		
1. <u>Ulmus americana</u>	<u>35%</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u>	(A)
2. <u>Acer saccharinum</u>	<u>25%</u>	<u>Y</u>	<u>FACW</u>	Total Number of Dominant Species Across All Strata: <u>3</u>	(B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66%</u>	(A/B)
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
50% of total cover: <u>30</u> <u>60%</u> = Total Cover 20% of total cover: <u>12</u>					
Sapling/Shrub Stratum (Plot size: <u>15'R</u>)				Prevalence Index worksheet:	
				Total % Cover of:	Multiply by:
1. _____	_____	_____	_____	OBL species <u>0</u>	x 1 = <u>0</u>
2. _____	_____	_____	_____	FACW species <u>76</u>	x 2 = <u>152</u>
3. _____	_____	_____	_____	FAC species <u>10</u>	x 3 = <u>30</u>
4. _____	_____	_____	_____	FACU species <u>78</u>	x 4 = <u>312</u>
5. _____	_____	_____	_____	UPL species <u>0</u>	x 5 = <u>0</u>
6. _____	_____	_____	_____	Column Totals: <u>164</u>	(A) <u>494</u> (B)
7. _____	_____	_____	_____	Prevalence Index = B/A = <u>3.01</u>	
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
50% of total cover: _____ <u>0%</u> = Total Cover 20% of total cover: _____					
Herb Stratum (Plot size: <u>5'R</u>)				Hydrophytic Vegetation Indicators:	
1. <u>Festuca arundinacea</u>	<u>65%</u>	<u>Y</u>	<u>FACU</u>	1 - Rapid Test for Hydrophytic Vegetation	
2. <u>Corium maculatum</u>	<u>15%</u>	<u>N</u>	<u>FACW</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
3. <u>Heliconia loderacea</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>	3 - Prevalence Index is ≤3.0 ¹	
4. <u>Eugenia amara</u>	<u>5%</u>	<u>N</u>	<u>FACU</u>	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5. <u>Viburnum coccineum</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>	Problematic Hydrophytic Vegetation ¹ (Explain)	
6. <u>Plantago major</u>	<u>3%</u>	<u>N</u>	<u>FACU</u>		
7. <u>Verbena stricta</u>	<u>3%</u>	<u>N</u>	<u>FAC</u>		
8. <u>Amphicarpaea elatensis</u>	<u>2%</u>	<u>N</u>	<u>FAC</u>		
9. <u>Lythrum hyssopifolium</u>	<u>1%</u>	<u>N</u>	<u>FACW</u>		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
50% of total cover: <u>52</u> <u>104</u> = Total Cover 20% of total cover: <u>20.8</u>					
Woody Vine Stratum (Plot size: <u>30'R</u>)				Definitions of Four Vegetation Strata:	
1. _____	_____	_____	_____	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
2. _____	_____	_____	_____	Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.	
3. _____	_____	_____	_____	Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
4. _____	_____	_____	_____	Woody vine – All woody vines greater than 3.28 ft in height.	
5. _____	_____	_____	_____		
50% of total cover: _____ <u>0%</u> = Total Cover 20% of total cover: _____					
Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____					

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

Dominant hydrophytic vegetation

SOIL

Sampling Point: SP-15

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Rine D000B City/County: Cincinnati/Hamilton Sampling Date: 5/18/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-16
 Investigator(s): JAV/DMG (EEC) Section, Township, Range: S23, TIN, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.081597 Long: -84.427429 Datum: wgs84
 Soil Map Unit Name: Gn - Genesee loam, occasionally flooded NWI classification: Upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: <u>upland sampling location</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ True Aquatic Plants (B14) ___ High Water Table (A2) ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1) ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3) ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4) ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)		<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) ___ Sparsely Vegetated Concave Surface (B8) ___ Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) ___ Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>N/A</u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>>12"</u> (Includes capillary fringe)		Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: <u>upland hydrology</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-16

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. <u>Populus deltoides</u>	<u>70%</u>	<u>Y</u>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50%</u> (A/B)														
2. <u>Cotula occidentalis</u>	<u>35%</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Acer saccharinum</u>	<u>15%</u>	<u>N</u>	<u>FACU</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>50</u></td> <td>x 2 = <u>100</u></td> </tr> <tr> <td>FAC species <u>82</u></td> <td>x 3 = <u>246</u></td> </tr> <tr> <td>FACU species <u>77</u></td> <td>x 4 = <u>308</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>209</u></td> <td>(A) <u>654</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.12</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>50</u>	x 2 = <u>100</u>	FAC species <u>82</u>	x 3 = <u>246</u>	FACU species <u>77</u>	x 4 = <u>308</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>209</u>	(A) <u>654</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>50</u>	x 2 = <u>100</u>																	
FAC species <u>82</u>	x 3 = <u>246</u>																	
FACU species <u>77</u>	x 4 = <u>308</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>209</u>	(A) <u>654</u> (B)																	
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
50% of total cover: <u>60</u> <u>120%</u> = Total Cover 20% of total cover: <u>24</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
Sapling/Shrub Stratum (Plot size: <u>15'R</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____																		
50% of total cover: <u>—</u> <u>0%</u> = Total Cover 20% of total cover: <u>—</u>																		
Herb Stratum (Plot size: <u>5'R</u>) 1. <u>Urtica dioica</u> <u>35%</u> <u>Y</u> <u>FACU</u> 2. <u>Boerhaavia cylindrica</u> <u>35%</u> <u>Y</u> <u>FACU</u> 3. <u>Amphicarpaea bracteata</u> <u>5%</u> <u>N</u> <u>FAC</u> 4. <u>Viola sororia</u> <u>5%</u> <u>N</u> <u>FAC</u> 5. <u>Parthenocissus quinquefolia</u> <u>5%</u> <u>N</u> <u>FACU</u> 6. <u>Salvinia spirale</u> <u>2%</u> <u>N</u> <u>FACU</u> 7. _____ 8. _____ 9. _____ 10. _____ 11. _____																		
50% of total cover: <u>43.5</u> <u>87%</u> = Total Cover 20% of total cover: <u>17.4</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.														
Woody Vine Stratum (Plot size: <u>30'R</u>) 1. <u>Toricodendron radicans</u> <u>2%</u> <u>N</u> <u>FAC</u> 2. _____ 3. _____ 4. _____ 5. _____																		
50% of total cover: <u>—</u> <u>2%</u> = Total Cover 20% of total cover: <u>—</u>																		
50% of total cover: <u>—</u> 20% of total cover: <u>—</u>																		
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant upland vegetation.</u>																		

SOIL

Sampling Point: SP-16

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

[illegible]

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

Indicators for Problematic Hydric Soils³:

- ☐ 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)

- ___ 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)

- ☐ 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: N/A
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

upland soil facing

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Amesbury/Hamilton Sampling Date: 5/18/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-17
 Investigator(s): JAV/DMG (LEC) Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.083064 Long: -84.427519 Datum: WGS 84
 Soil Map Unit Name: UxCO-Urbn Land-udothentic complex, 0 to 12% NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks: <u>Field confirmed PFO wetland</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>N/A</u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>712"</u> Saturation Present? Yes <u> </u> No <u>X</u> Depth (inches): <u>212"</u> (includes capillary fringe)		Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: <u>Wetland hydrology observed.</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-17

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. <u>Plantanus occidentalis</u>	<u>65%</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)														
2. <u>Populus deltoides</u>	<u>25%</u>	<u>Y</u>	<u>FAC</u>															
3. <u>Acer saccharinum</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>93</u></td> <td>x 2 = <u>186</u></td> </tr> <tr> <td>FAC species <u>45</u></td> <td>x 3 = <u>135</u></td> </tr> <tr> <td>FACU species <u>1</u></td> <td>x 4 = <u>4</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>139</u></td> <td>(A) <u>325</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.33</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>93</u>	x 2 = <u>186</u>	FAC species <u>45</u>	x 3 = <u>135</u>	FACU species <u>1</u>	x 4 = <u>4</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>139</u>	(A) <u>325</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>93</u>	x 2 = <u>186</u>																	
FAC species <u>45</u>	x 3 = <u>135</u>																	
FACU species <u>1</u>	x 4 = <u>4</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>139</u>	(A) <u>325</u> (B)																	
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
50% of total cover: <u>47.5</u> 95% = Total Cover 20% of total cover: <u>19</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
Sapling/Shrub Stratum (Plot size: <u>15'R</u>)																		
1. <u>Acer saccharinum</u>	<u>10%</u>	<u>Y</u>	<u>FACW</u>															
2. <u>Cotus occidentalis</u>	<u>1%</u>	<u>N</u>	<u>FACU</u>															
3. <u>Amorpha fruticosa</u>	<u>2%</u>	<u>N</u>	<u>FACW</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.														
4. <u>Ulmus americana</u>	<u>1%</u>	<u>N</u>	<u>FACW</u>															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
50% of total cover: <u>7</u> 14% = Total Cover 20% of total cover: <u>—</u>				Hydrophytic Vegetation Present? Yes <u>X</u> No <u>—</u>														
Herb Stratum (Plot size: <u>5'R</u>)																		
1. <u>Toxicodendron radicans</u>	<u>20%</u>	<u>Y</u>	<u>FAC</u>															
2. <u>Leersia virginica</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>															
3. <u>Carex grisea</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>	Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant hydrophytic vegetation.</u>														
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
50% of total cover: <u>15</u> 30% = Total Cover 20% of total cover: <u>6</u>																		
Woody Vine Stratum (Plot size: <u>30'R</u>)																		
1. _____	_____	_____	_____	50% of total cover: <u>—</u> 0% = Total Cover 20% of total cover: <u>—</u>														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															

SOIL

Sampling Point: SP-17

[illegible]

WETLAND DETERMINATION DATA FORM -- Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/19/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-18
 Investigator(s): JAV / DMG (CEC) Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.082921 Long: -84.427699 Datum: wgs84
 Soil Map Unit Name: Ur UXCO-urbanland-udgethentic complex NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks: <u>Field confirmed PEM wetland.</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input checked="" type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Water Table Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>712"</u>	
Saturation Present? (includes capillary fringe) Yes <u> </u> No <u>X</u>	Depth (inches): <u>>12"</u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Wetland hydrology observed.</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: SP-18

Tree Stratum (Plot size: <u>0.05 acre</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)														
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)														
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)														
4. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>96</u></td> <td>x 2 = <u>192</u></td> </tr> <tr> <td>FAC species <u>21</u></td> <td>x 3 = <u>63</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>117</u> (A)</td> <td><u>255</u> (B)</td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>96</u>	x 2 = <u>192</u>	FAC species <u>21</u>	x 3 = <u>63</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>117</u> (A)	<u>255</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>96</u>	x 2 = <u>192</u>																	
FAC species <u>21</u>	x 3 = <u>63</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>117</u> (A)	<u>255</u> (B)																	
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>				Prevalence Index = B/A = <u>2.17</u>														
Sapling/Shrub Stratum (Plot size: <u>0.05 acre</u>)				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
1. <u>Cornus amomum</u>	<u>3%</u>	<u>N</u>	<u>FACW</u>															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.														
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.														
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
50% of total cover: <u>3%</u> = Total Cover 20% of total cover: <u>0%</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>														
Herb Stratum (Plot size: <u>5' R</u>)																		
1. <u>Carex grayi</u>	<u>70%</u>	<u>Y</u>	<u>FACW</u>															
2. <u>Lysimachia nummularia</u>	<u>20%</u>	<u>N</u>	<u>FACW</u>															
3. <u>Forisodendron radicans</u>	<u>10%</u>	<u>N</u>	<u>FAC</u>															
4. <u>Viola sororia</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>	Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant hydrophytic vegetation.</u>														
5. <u>Vernonia gigantea</u>	<u>3%</u>	<u>N</u>	<u>FAC</u>															
6. <u>Asplenium adnigrum</u>	<u>3%</u>	<u>N</u>	<u>FACW</u>															
7. <u>Rumex crispus</u>	<u>3%</u>	<u>N</u>	<u>FAC</u>															
8. _____	_____	_____	_____	Woody Vine Stratum (Plot size: <u>0.05 acre</u>)														
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
50% of total cover: <u>57</u> = Total Cover 20% of total cover: <u>22.8</u>																		

Sampling Point: SP-18

Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/19/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-19
 Investigator(s): JAV/DMG (DEC) Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Convex Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.082924 Long: -84.427772 Datum: WGS 84
 Soil Map Unit Name: UrUXCO - Urban land - Urban trunks completed NWI classification: upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland?	Yes <u> </u> No <u>X</u>
Hydric Soil Present?	Yes <u> </u> No <u>X</u>		
Wetland Hydrology Present?	Yes <u> </u> No <u>X</u>		
Remarks: <u>Upland sampling location.</u>			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<u> </u> Surface Water (A1)	<u> </u> True Aquatic Plants (B14)	<u> </u> Surface Soil Cracks (B6)	
<u> </u> High Water Table (A2)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Sparsely Vegetated Concave Surface (B8)	
<u> </u> Saturation (A3)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Drainage Patterns (B10)	
<u> </u> Water Marks (B1)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Moss Trim Lines (B16)	
<u> </u> Sediment Deposits (B2)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Dry-Season Water Table (C2)	
<u> </u> Drift Deposits (B3)	<u> </u> Thin Muck Surface (C7)	<u> </u> Crayfish Burrows (C8)	
<u> </u> Algal Mat or Crust (B4)	<u> </u> Other (Explain in Remarks)	<u> </u> Saturation Visible on Aerial Imagery (C9)	
<u> </u> Iron Deposits (B5)		<u> </u> Stunted or Stressed Plants (D1)	
<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Geomorphic Position (D2)	
<u> </u> Water-Stained Leaves (B9)		<u> </u> Shallow Aquitard (D3)	
<u> </u> Aquatic Fauna (B13)		<u> </u> Microtopographic Relief (D4)	
		<u> </u> FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes <u> </u> No <u>X</u> Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Water Table Present?	Yes <u> </u> No <u>X</u> Depth (inches): <u>212"</u>		
Saturation Present? (includes capillary fringe)	Yes <u> </u> No <u>X</u> Depth (inches): <u>212"</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: <u>None observed.</u>			

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: SP-19

Tree Stratum (Plot size: <u>30' R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)														
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
<u>0%</u> = Total Cover 50% of total cover: _____ 20% of total cover: _____				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>5</u></td> <td>x 2 = <u>10</u></td> </tr> <tr> <td>FAC species <u>7</u></td> <td>x 3 = <u>21</u></td> </tr> <tr> <td>FACU species <u>106</u></td> <td>x 4 = <u>424</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>118</u> (A)</td> <td><u>455</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>3.85</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>5</u>	x 2 = <u>10</u>	FAC species <u>7</u>	x 3 = <u>21</u>	FACU species <u>106</u>	x 4 = <u>424</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>118</u> (A)	<u>455</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>5</u>	x 2 = <u>10</u>																	
FAC species <u>7</u>	x 3 = <u>21</u>																	
FACU species <u>106</u>	x 4 = <u>424</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>118</u> (A)	<u>455</u> (B)																	
<u>0%</u> = Total Cover 50% of total cover: _____ 20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>15' R</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
6. _____	_____	_____	_____															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
<u>0%</u> = Total Cover 50% of total cover: _____ 20% of total cover: _____																		
Herb Stratum (Plot size: <u>5' R</u>)																		
1. <u>Festuca arundinacea</u>	<u>60%</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)														
2. <u>Trifolium repens</u>	<u>40%</u>	<u>Y</u>	<u>FACU</u>															
3. <u>Viola sororia</u>	<u>7%</u>	<u>N</u>	<u>FAC</u>															
4. <u>Plantago major</u>	<u>5%</u>	<u>Y</u>	<u>FACU</u>															
5. <u>Cyperus esculentus</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>															
6. <u>Sarothamnus affinis</u>	<u>1%</u>	<u>N</u>	<u>FACU</u>															
7. _____	_____	_____	_____															
8. _____	_____	_____	_____															
9. _____	_____	_____	_____															
10. _____	_____	_____	_____															
11. _____	_____	_____	_____															
<u>118%</u> = Total Cover 50% of total cover: <u>59</u> 20% of total cover: <u>23.6</u>																		
Woody Vine Stratum (Plot size: <u>30' R</u>)																		
1. _____	_____	_____	_____															
2. _____	_____	_____	_____															
3. _____	_____	_____	_____															
4. _____	_____	_____	_____															
5. _____	_____	_____	_____															
<u>0%</u> = Total Cover 50% of total cover: _____ 20% of total cover: _____																		
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant upland vegetation.</u>																		

Sampling Point: SP-19

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <input type="checkbox"/> Histosol (A1)
<input type="checkbox"/> Histic Epipedon (A2)
<input type="checkbox"/> Black Histic (A3)
<input type="checkbox"/> Hydrogen Sulfide (A4)
<input type="checkbox"/> Stratified Layers (A5)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)
<input type="checkbox"/> Depleted Below Dark Surface (A11)
<input type="checkbox"/> Thick Dark Surface (A12)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)
<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)
<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)
<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)
<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147) | <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Other (Explain in Remarks) |
|--|--|---|
- ³Indicators of hydrophytic vegetation wetland hydrology must be present, unless disturbed or problematic.

Type: N/A
Depth (Inches): _____

Hydric Soil Present? Yes No ☒

Remarks:

upland soil fungi

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/19/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-20
 Investigator(s): JAV/DMG (CEC) Section, Township, Range: S23, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.090361 Long: -84.427389 Datum: WGS84
 Soil Map Unit Name: UrUXCO - Urban Land - Udothent complex NWI classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u>	No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u>	No <u> </u>
Hydric Soil Present?	Yes <u>X</u>	No <u> </u>			
Wetland Hydrology Present?	Yes <u>X</u>	No <u> </u>			

Remarks:

Field confirmed PEM wetland area.

HYDROLOGY

Wetland Hydrology indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<u> </u> Surface Water (A1)	<u> </u> True Aquatic Plants (B14)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u>X</u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Thin Muck Surface (C7)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Other (Explain in Remarks)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)		<u> </u> Stunted or Stressed Plants (D1)
<u> </u> Inundation Visible on Aerial Imagery (B7)		<u>X</u> Geomorphic Position (D2)
<u> </u> Water-Stained Leaves (B9)		<u> </u> Shallow Aquitard (D3)
<u> </u> Aquatic Fauna (B13)		<u> </u> Microtopographic Relief (D4)
		<u>X</u> FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes No X Depth (Inches): N/A
 Water Table Present? Yes No X Depth (Inches): 712"
 Saturation Present? Yes No X Depth (Inches): 712"
 (includes capillary fringe)

Wetland Hydrology Present? Yes X No

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

Remarks:

Field confirmed wetland hydrology.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: SP-20

Tree Stratum (Plot size: <u>Entire wetland</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:														
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)														
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)														
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)														
4. _____																		
5. _____																		
6. _____																		
7. _____																		
<u>0%</u> = Total Cover 50% of total cover: <u>—</u> 20% of total cover: <u>—</u>				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>35</u></td> <td>x 1 = <u>35</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>55</u> (A)</td> <td><u>85</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>1.54</u>	Total % Cover of:	Multiply by:	OBL species <u>35</u>	x 1 = <u>35</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>10</u>	x 3 = <u>30</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>55</u> (A)	<u>85</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>35</u>	x 1 = <u>35</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>10</u>	x 3 = <u>30</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>55</u> (A)	<u>85</u> (B)																	
<u>0%</u> = Total Cover 50% of total cover: <u>—</u> 20% of total cover: <u>—</u>																		
Sapling/Shrub Stratum (Plot size: <u>Entire wetland</u>)																		
1. _____																		
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
<u>0%</u> = Total Cover 50% of total cover: <u>—</u> 20% of total cover: <u>—</u>																		
Herb Stratum (Plot size: <u>5'R</u>)																		
1. <u>Sagittaria purpurea</u>	<u>35%</u>	<u>Y</u>	<u>OBL</u>															
2. <u>Rumex crispus</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>															
3. <u>Urtica dioica</u>	<u>5%</u>	<u>N</u>	<u>FAC</u>															
4. <u>Conium maculatum</u>	<u>10%</u>	<u>N</u>	<u>FACW</u>															
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
<u>55%</u> = Total Cover 50% of total cover: <u>27.5</u> 20% of total cover: <u>11</u>																		
Woody Vine Stratum (Plot size: <u>Entire wetland</u>)																		
1. _____																		
2. _____																		
3. _____																		
4. _____																		
5. _____																		
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____																		
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant hydrophytic vegetation</u>				Hydrophytic Vegetation Present? Yes <u>X</u> No _____														

Sampling Point: SP-20

Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/19/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-21
 Investigator(s): JAV/DMG (DEC) Section, Township, Range: S23, T1N,
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.090382 Long: -84.427416 Datum: WGS84
 Soil Map Unit Name: UrUXCO - urban land - hydrothermally complex NWI classification: Upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: <u>upland sampling location</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water Table Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>> 12"</u>	
Saturation Present? Yes <u> </u> No <u>X</u>	Depth (inches): <u>212"</u>	
(includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>None observed</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: SP-21

Tree Stratum (Plot size: <u>30' R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>110</u> x 4 = <u>440</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>110</u> (A) <u>440</u> (B) Prevalence Index = B/A = <u>4</u>
5. _____				
6. _____				
7. _____				
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>				
Sapling/Shrub Stratum (Plot size: <u>15' R</u>)				
1. _____				Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)
2. _____				
3. _____				
4. _____				
5. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. _____				
7. _____				
8. _____				
9. _____				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
10. _____				
11. _____				
12. _____				
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>				
Herb Stratum (Plot size: <u>5' R</u>)				
1. <u>Trifolium repens</u>	<u>60%</u>	<u>Y</u>	<u>FACU</u>	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
2. <u>Festuca arundinacea</u>	<u>50%</u>	<u>Y</u>	<u>FACU</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
50% of total cover: <u>55</u> <u>110%</u> = Total Cover 20% of total cover: <u>22</u>				
Woody Vine Stratum (Plot size: <u>30' R</u>)				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>				
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant upland vegetation</u>				

Sampling Point: SP-21

Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/19/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-22
 Investigator(s): JAV/DMG (CEC) Section, Township, Range: S24, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.094486 Long: -84.428403 Datum: WGS84
 Soil Map Unit Name: Ur UXCO - urban land - Udoilbents complex NWI classification: PFO
 Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks: <u>Field confirmed PFO wetland</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<u>X</u> Surface Water (A1)	<u> </u> True Aquatic Plants (B14)	<u> </u> Surface Soil Cracks (B6)
<u>X</u> High Water Table (A2)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Drainage Patterns (B10)
<u>X</u> Water Marks (B1)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Thin Muck Surface (C7)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Other (Explain in Remarks)	<u>X</u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)		<u> </u> Stunted or Stressed Plants (D1)
<u>X</u> Inundation Visible on Aerial Imagery (B7)		<u>X</u> Geomorphic Position (D2)
<u>X</u> Water-Stained Leaves (B9)		<u> </u> Shallow Aquitard (D3)
<u> </u> Aquatic Fauna (B13)		<u>X</u> Microtopographic Relief (D4)
		<u>X</u> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u>X</u> No <u> </u>	Depth (inches): <u>24"</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>
Water Table Present? Yes <u>X</u> No <u> </u>	Depth (inches): <u> </u>	
Saturation Present? Yes <u>X</u> No <u> </u>	Depth (inches): <u> </u>	
(Includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Strong wetland hydrology.</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: SP-22

Tree Stratum (Plot size: <u>30' R</u>)				Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:	
1.	<u>Acer saccharinum</u>	<u>90%</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)			
2.	<u>Lilix nigra</u>	<u>10%</u>	<u>N</u>	<u>OBL</u>	Total Number of Dominant Species Across All Strata: <u>2</u> (B)			
3.					Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)			
4.					Prevalence Index worksheet:			
5.								
6.								
7.								
8.								
50% of total cover: <u>50</u> 100% Total Cover				20% of total cover: <u>20</u>		Total % Cover of:		
Sapling/Shrub Stratum (Plot size: <u>15' R</u>)						Multiply by:		
1.	<u>Acer saccharinum</u>	<u>10%</u>	<u>Y</u>	<u>FACW</u>	OBL species <u>10</u> x 1 = <u>10</u>			
2.	<u>Robinia pseudacacia</u>	<u>2%</u>	<u>N</u>	<u>FACU</u>	FACW species <u>100</u> x 2 = <u>200</u>			
3.					FAC species <u>1</u> x 3 = <u>3</u>			
4.					FACU species <u>2</u> x 4 = <u>8</u>			
5.					UPL species <u>0</u> x 5 = <u>0</u>			
6.					Column Totals: <u>113</u> (A) <u>221</u> (B)			
7.					Prevalence Index = B/A = <u>1.95</u>			
8.					Hydrophytic Vegetation Indicators:			
9.								
10.								
11.								
12.								
50% of total cover: <u>5</u> 100% Total Cover				20% of total cover: <u>—</u>		<input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)		
Herb Stratum (Plot size: <u>5' R</u>)						¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.		
1.					Definitions of Four Vegetation Strata:			
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
50% of total cover: <u>—</u> 0% Total Cover				20% of total cover: <u>—</u>		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.		
Woody Vine Stratum (Plot size: <u>30' R</u>)						Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		
1.	<u>Totracodendron radicans</u>	<u>1%</u>	<u>N</u>	<u>FAC</u>				
2.								
3.								
4.								
5.								
50% of total cover: <u>—</u> 1% Total Cover				20% of total cover: <u>—</u>		Remarks: (Include photo numbers here or on a separate sheet.)		
<u>Dominant hydrophytic vegetation</u>								

Sampling Point: SP-22

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <input type="checkbox"/> Histosol (A1)
<input type="checkbox"/> Histic Epipedon (A2)
<input type="checkbox"/> Black Histic (A3)
<input type="checkbox"/> Hydrogen Sulfide (A4)
<input type="checkbox"/> Stratified Layers (A5)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)
<input type="checkbox"/> Depleted Below Dark Surface (A11)
<input type="checkbox"/> Thick Dark Surface (A12)
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)
<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Dark Surface (S7)
<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)
<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)
<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)
<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)
<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147) | <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Other (Explain in Remarks) |
|--|--|---|
- ³Indicators of hydrophytic vegetation wetland hydrology must be present, unless disturbed or problematic.

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

Type: N/A
Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Hydric soil facing -

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/19/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-23
 Investigator(s): JAV/DMG (CEC) Section, Township, Range: S24, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0%
 Subregion (LRR or MLRA): LRRN Lat: 39.094481 Long: -84.428428 Datum: WGS84
 Soil Map Unit Name: UxXCO - urban land - vegetation complex NWI classification: Upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: <u>Upland sampling location</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<u> </u> Surface Water (A1)	<u> </u> True Aquatic Plants (B14)	<u> </u> Surface Soil Cracks (B6)
<u> </u> High Water Table (A2)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Sparsely Vegetated Concave Surface (B8)
<u> </u> Saturation (A3)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u> </u> Drainage Patterns (B10)
<u> </u> Water Marks (B1)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Moss Trim Lines (B16)
<u> </u> Sediment Deposits (B2)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Dry-Season Water Table (C2)
<u> </u> Drift Deposits (B3)	<u> </u> Thin Muck Surface (C7)	<u> </u> Crayfish Burrows (C8)
<u> </u> Algal Mat or Crust (B4)	<u> </u> Other (Explain in Remarks)	<u> </u> Saturation Visible on Aerial Imagery (C9)
<u> </u> Iron Deposits (B5)		<u> </u> Stunted or Stressed Plants (D1)
<u> </u> Inundation Visible on Aerial Imagery (B7)		<u> </u> Geomorphic Position (D2)
<u> </u> Water-Stained Leaves (B9)		<u> </u> Shallow Aquitard (D3)
<u> </u> Aquatic Fauna (B13)		<u> </u> Microtopographic Relief (D4)
		<u> </u> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u> </u> No <u>X</u>	Depth (Inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>
Water Table Present? Yes <u> </u> No <u>X</u>	Depth (Inches): <u>212"</u>	
Saturation Present? Yes <u> </u> No <u>X</u>	Depth (Inches): <u>212"</u>	
(Includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>None observed.</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-23

Tree Stratum (Plot size: <u>30' R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species <u>40</u> x 5 = <u>200</u> Column Totals: <u>75</u> (A) <u>340</u> (B) Prevalence Index = B/A = <u>4.53</u>
Sapling/Shrub Stratum (Plot size: <u>15' R</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Herb Stratum (Plot size: <u>5' R</u>) 1. <u>Stellaria media</u> 40% Y UPL 2. <u>Festuca arundinacea</u> 25% Y FACU 3. <u>Paracetum officinale</u> 10% N FACU 4. _____ 5. _____ 6. _____ 7. _____ 8. _____ 9. _____ 10. _____ 11. _____				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
50% of total cover: <u>37.5</u> <u>75%</u> Total Cover 20% of total cover: <u>15</u>				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
Woody Vine Stratum (Plot size: <u>30' R</u>) 1. _____ 2. _____ 3. _____ 4. _____ 5. _____				
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>				
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant upland vegetation</u>				

SOIL

Sampling Point: SP-23

[illegible]

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/19/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-24
 Investigator(s): JAV/DMG (REC) Section, Township, Range: S030, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.105674 Long: -84.434934 Datum: WGS 84
 Soil Map Unit Name: Hu - Huntington silt loam, occasionally flooded NWI classification: Upland
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u> </u> No <u>X</u>
Hydric Soil Present? Yes <u> </u> No <u>X</u>	
Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Remarks: <u>Upland sampling area</u>	

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Moss Trim Lines (B16)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Aquatic Fauna (B13)		<input type="checkbox"/> Microtopographic Relief (D4)
		<input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations:		
Surface Water Present? Yes <u> </u> No <u>X</u> Depth (Inches): <u>N/A</u>	Wetland Hydrology Present? Yes <u> </u> No <u>X</u>	
Water Table Present? Yes <u> </u> No <u>X</u> Depth (Inches): <u>>12"</u>		
Saturation Present? Yes <u> </u> No <u>X</u> Depth (Inches): <u>>12"</u> (Includes capillary fringe)		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>upland hydrology observed.</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-24

Tree Stratum (Plot size: <u>30'R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)																
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)																
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
4. _____				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>50</u> (A)</td> <td><u>200</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>50</u> (A)	<u>200</u> (B)	Prevalence Index = B/A = <u>4.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>50</u>	x 4 = <u>200</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>50</u> (A)	<u>200</u> (B)																			
Prevalence Index = B/A = <u>4.00</u>																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>																				
Sapling/Shrub Stratum (Plot size: <u>15'R</u>)																				
1. _____																				
2. _____																				
3. _____																				
4. _____				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>																
10. _____																				
11. _____																				
50% of total cover: <u>25</u> <u>50%</u> = Total Cover 20% of total cover: <u>10</u>																				
Herb Stratum (Plot size: <u>5'R</u>)																				
1. <u>Festuca arundinacea</u>	<u>40%</u>	<u>Y</u>	<u>FACU</u>	Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant upland vegetation</u>																
2. <u>Parthenium officinale</u>	<u>10%</u>	<u>Y</u>	<u>FACU</u>																	
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>																				
Woody Vine Stratum (Plot size: <u>30'R</u>)																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>																				

Sampling Point: SP-24

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- ___ 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)

- ___ 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.

Type: N/A
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

upland soil facing.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/19/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-25
 Investigator(s): JAV/DMG (CSC) Section, Township, Range: S030, T1N, R5E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.105927 Long: -84.435067 Datum: wgs84
 Soil Map Unit Name: Hu - Huntington silt loam, occasionally flooded NWI classification: PFO
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland?	Yes <u>X</u> No <u> </u>
Hydric Soil Present?	Yes <u>X</u> No <u> </u>		
Wetland Hydrology Present?	Yes <u>X</u> No <u> </u>		
Remarks: <u>Field confirmed forested wetland</u>			

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)	
Primary Indicators (minimum of one is required; check all that apply)			
<u>X</u> Surface Water (A1)	<u> </u> True Aquatic Plants (B14)	<u> </u> Surface Soil Cracks (B6)	
<u>X</u> High Water Table (A2)	<u> </u> Hydrogen Sulfide Odor (C1)	<u> </u> Sparsely Vegetated Concave Surface (B8)	
<u>X</u> Saturation (A3)	<u> </u> Oxidized Rhizospheres on Living Roots (C3)	<u>X</u> Drainage Patterns (B10)	
<u>X</u> Water Marks (B1)	<u> </u> Presence of Reduced Iron (C4)	<u> </u> Moss Trim Lines (B16)	
<u> </u> Sediment Deposits (B2)	<u> </u> Recent Iron Reduction in Tilled Soils (C6)	<u> </u> Dry-Season Water Table (C2)	
<u> </u> Drift Deposits (B3)	<u> </u> Thin Muck Surface (C7)	<u> </u> Crayfish Burrows (C8)	
<u> </u> Algal Mat or Crust (B4)	<u> </u> Other (Explain in Remarks)	<u>X</u> Saturation Visible on Aerial Imagery (C9)	
<u> </u> Iron Deposits (B5)		<u> </u> Stunted or Stressed Plants (D1)	
<u>X</u> Inundation Visible on Aerial Imagery (B7)		<u>X</u> Geomorphic Position (D2)	
<u> </u> Water-Stained Leaves (B9)		<u> </u> Shallow Aquitard (D3)	
<u> </u> Aquatic Fauna (B13)		<u> </u> Microtopographic Relief (D4)	
		<u>X</u> FAC-Neutral Test (D5)	
Field Observations:			
Surface Water Present?	Yes <u>X</u> No <u> </u> Depth (inches): <u>12"</u>	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Water Table Present?	Yes <u>X</u> No <u> </u> Depth (inches): <u> </u>		
Saturation Present? (includes capillary fringe)	Yes <u>X</u> No <u> </u> Depth (inches): <u> </u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: <u>Strong wetland hydrology indicators</u>			

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-25

Tree Stratum (Plot size: <u>30' R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																
1. <u>Acer saccharinum</u>	<u>65%</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)																
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)																
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)																
4. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>110</u></td> <td>x 2 = <u>220</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>110</u> (A)</td> <td><u>220</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>110</u>	x 2 = <u>220</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>110</u> (A)	<u>220</u> (B)	Prevalence Index = B/A = <u>2.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>110</u>	x 2 = <u>220</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>110</u> (A)	<u>220</u> (B)																			
Prevalence Index = B/A = <u>2.00</u>																				
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
50% of total cover: _____ 20% of total cover: _____ <u>65%</u> = Total Cover				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																
Sapling/Shrub Stratum (Plot size: <u>15' R</u>)				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
1. <u>Acer saccharinum</u>	<u>15%</u>	<u>Y</u>	<u>FACW</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
50% of total cover: _____ 20% of total cover: _____ <u>15%</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____																
Herb Stratum (Plot size: <u>5' R</u>)																				
1. <u>Lernia virginica</u>	<u>10%</u>	<u>Y</u>	<u>FACW</u>																	
2. <u>Conium maculatum</u>	<u>15%</u>	<u>Y</u>	<u>FACW</u>																	
3. <u>Hymenocallis nummularia</u>	<u>5%</u>	<u>N</u>	<u>FACW</u>																	
4. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____																
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
50% of total cover: <u>15</u> 20% of total cover: _____ <u>30%</u> = Total Cover				Woody Vine Stratum (Plot size: <u>30' R</u>)																
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____																
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
50% of total cover: _____ 20% of total cover: _____ <u>0%</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____																

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

Dominant hydrophytic vegetation.

Sampling Point: SP-25

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- ☐ 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)

- ☐ 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.

Type: N/A
Depth (Inches): _____

Hydric Soil Present? Yes ~~X~~ No

Remarks:

Hydric soil facing.

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/19/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP426
 Investigator(s): JAV/DMG (CEC) Section, Township, Range: S025, T2N, R4E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): Concave Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.112423 Long: -84.439915 Datum: wgs84
 Soil Map Unit Name: Uruxco - Urban land - Urbanly developed NW Classification: PEM
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u> </u>
Hydric Soil Present? Yes <u>X</u> No <u> </u>	
Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <u> </u> No <u>X</u> Depth (Inches): <u>N/A</u> Water Table Present? Yes <u> </u> No <u>X</u> Depth (Inches): <u>>12"</u> Saturation Present? Yes <u>X</u> No <u> </u> Depth (Inches): <u>Surface</u> (Includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No <u> </u>	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>Wetland hydrology observed.</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-26

Tree Stratum (Plot size: <u>30' R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																
1. _____				Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)																
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)																
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)																
4. _____				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>85</u></td> <td>x 2 = <u>170</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>85</u> (A)</td> <td><u>170</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>2.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>85</u>	x 2 = <u>170</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>85</u> (A)	<u>170</u> (B)	Prevalence Index = B/A = <u>2.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>85</u>	x 2 = <u>170</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>85</u> (A)	<u>170</u> (B)																			
Prevalence Index = B/A = <u>2.00</u>																				
5. _____																				
6. _____																				
7. _____																				
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>				Hydrophytic Vegetation Indicators: <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) Problematic Hydrophytic Vegetation ¹ (Explain) _____ ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
Sapling/Shrub Stratum (Plot size: <u>15' R</u>)																				
1. _____																				
2. _____																				
3. _____				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																
4. _____																				
5. _____																				
6. _____																				
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
Herb Stratum (Plot size: <u>5' R</u>)																				
1. <u>Rhynchospora alba</u>	<u>60%</u>	<u>Y</u>	<u>FACW</u>																	
2. <u>Scirpus americanus</u>	<u>25%</u>	<u>Y</u>	<u>FACW</u>																	
3. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
4. _____																				
5. _____																				
6. _____																				
50% of total cover: <u>42.5%</u> = Total Cover 20% of total cover: <u>17%</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
Woody Vine Stratum (Plot size: <u>30' R</u>)																				
1. _____																				
2. _____																				
3. _____				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
4. _____																				
5. _____																				
6. _____																				
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																
Remarks: (Include photo numbers here or on a separate sheet.) <u>Dominant hydrophytic vegetation.</u>																				

Sampling Point: SP-26

Sampling Point: SP-26

Eastern Mountains and Piedmont – Version 2.0

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Line D000B City/County: Cincinnati/Hamilton Sampling Date: 5/19/2016
 Applicant/Owner: Duke Energy State: OH Sampling Point: SP-27
 Investigator(s): JAV/DMG (CEC) Section, Township, Range: SO25, T2N, R4E
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none Slope (%): 0%
 Subregion (LRR or MLRA): LRR N Lat: 39.112484 Long: -84.440009 Datum: WGS84
 Soil Map Unit Name: UrUXCO NWI classification: upland

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

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Hydric Soil Present? Yes _____ No <u>X</u>	
Wetland Hydrology Present? Yes _____ No <u>X</u>	
Remarks: <u>Upland sampling location</u>	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) _____ Surface Water (A1) _____ True Aquatic Plants (B14) _____ High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) _____ Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Water Marks (B1) _____ Presence of Reduced Iron (C4) _____ Sediment Deposits (B2) _____ Recent Iron Reduction in Tilled Soils (C6) _____ Drift Deposits (B3) _____ Thin Muck Surface (C7) _____ Algal Mat or Crust (B4) _____ Other (Explain in Remarks) _____ Iron Deposits (B5) _____ Inundation Visible on Aerial Imagery (B7) _____ Water-Stained Leaves (B9) _____ Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) _____ Surface Soil Cracks (B6) _____ Sparsely Vegetated Concave Surface (B8) _____ Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) _____ Geomorphic Position (D2) _____ Shallow Aquitard (D3) _____ Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): <u>N/A</u> Water Table Present? Yes _____ No <u>X</u> Depth (inches): <u>>12"</u> Saturation Present? Yes _____ No <u>X</u> Depth (inches): <u>>12"</u> (includes capillary fringe)		Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: <u>upland hydrology observed</u>		

VEGETATION (Four Strata) – Use scientific names of plants.

 Sampling Point: SP-27

Tree Stratum (Plot size: <u>30' R</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)																
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)																
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0%</u> (A/B)																
4. _____	_____	_____	_____	Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th>Total % Cover of:</th> <th>Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>360</u> (B)</td> </tr> <tr> <td colspan="2">Prevalence Index = B/A = <u>4.00</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>0</u>	x 3 = <u>0</u>	FACU species <u>90</u>	x 4 = <u>360</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>90</u> (A)	<u>360</u> (B)	Prevalence Index = B/A = <u>4.00</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>0</u>	x 3 = <u>0</u>																			
FACU species <u>90</u>	x 4 = <u>360</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>90</u> (A)	<u>360</u> (B)																			
Prevalence Index = B/A = <u>4.00</u>																				
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																
Sapling/Shrub Stratum (Plot size: <u>15' R</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																
Herb Stratum (Plot size: <u>5' R</u>)																				
1. <u>Festuca arundinacea</u> <u>90%</u> <u>Y</u> <u>FACU</u>	<u>90%</u>	<u>Y</u>	<u>FACU</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>																
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
50% of total cover: _____ = Total Cover 20% of total cover: _____																				
Woody Vine Stratum (Plot size: <u>30' R</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
50% of total cover: <u>0%</u> = Total Cover 20% of total cover: <u>0%</u>																				

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

Sampling Point: SP-27

[illegible]²Location: PL=Pore Lining, M=Matrix.

Indicators for Problematic Hydric Soils³:

- ___ 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)

- ☐ 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.

Type: N/A
Depth (Inches): _____

Hydric Soil Present? Yes _____ No ☒

upland soil facing.

APPENDIX C

OHIO EPA ORAM DATA FORMS

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

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

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

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

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

Background Information

Name:	Joey Van Skaik / Dustin Giesler
Date:	5/16/2016
Affiliation:	Civil + Environmental Consultants, Inc.
Address:	5899 Montclair BLVD, Milford, OH, 45150
Phone Number:	513-483-3522
e-mail address:	dgiesler@cecinc.com / jvanskai@cecinc.com
Name of Wetland:	Wetland 1
Vegetation Community(ies):	PFO/PEM
HGM Class(es):	Riverine
Location of Wetland: Include map, address, north arrow, landmarks, distances, roads, etc.	
<p>See CEC's Wetland and Waterbody Report</p>	
Lat/Long or UTM Coordinate	39.103423, -84.433691
USGS Quad Name	Newport, KY-OH
County	Hamilton
Township	1 N
Section and Subsection	023
Hydrologic Unit Code	05090202 - Little Miami River
Site Visit	5/16 + 5/18/2016
National Wetland Inventory Map	PFOIC - Freshwater Forested/shrub Wetland
Ohio Wetland Inventory Map	Shallow marsh
Soil Survey	Am - Grayscale loam, occasionally flooded
Delineation report/map	See CEC's Wetland and Waterbody Report

Name of Wetland: <u>Wetland 1</u>	
Wetland Size (acres, hectares): <u>~120</u>	Acres
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc. <p>See CEC's Wetland and waterbody Report</p>	
Comments, Narrative Discussion, Justification of Category Changes: <p>See CEC's wetland and waterbody Report</p>	
Final score: <u>76.5</u>	Category: <u>3</u>

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	NO Go to Question 8b

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

Table 1. Characteristic plant species.

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

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

Site: Wetland 1 Rater(s): JAN/DMG (CEC) Date: 5/16/2016

6	6
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

- 6
- ☒ >50 acres (>20.2ha) (6 pts)
 - ☐ 25 to <50 acres (10.1 to <20.2ha) (5 pts)
 - ☐ 10 to <25 acres (4 to <10.1ha) (4 pts)
 - ☐ 3 to <10 acres (1.2 to <4ha) (3 pts)
 - ☐ 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
 - ☐ 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
 - ☐ <0.1 acres (0.04ha) (0 pts)

9	15
max 14 pts.	subtotal

Metric 2. Upland buffers and surrounding land use.

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

- 4
- ☐ 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.

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

24.5	39.5
max 30 pts.	subtotal

Metric 3. Hydrology.

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

- 6
- ☐ High pH groundwater (5)
 - ☐ Other groundwater (3)
 - ☒ Precipitation (1)
 - ☐ Seasonal/intermittent surface water (3)
 - ☒ Perennial surface water (lake or stream) (5)

3c. Maximum water depth. Select only one and assign score.

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

3e. Modifications to natural hydrologic regime. Score one or double check and average.

- 9.5
- ☒ None or none apparent (12)
 - ☒ Recovered (7)
 - ☐ Recovering (3)
 - ☐ Recent or no recovery (1)

3b. Connectivity. Score all that apply.

- 4
- ☒ 100 year floodplain (1)
 - ☒ Between stream/lake and other human use (1)
 - ☒ Part of wetland/upland (e.g. forest), complex (1)
 - ☒ Part of riparian or upland corridor (1)

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

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

Check all disturbances observed

- ☐ ditch
- ☐ tile
- ☐ dike
- ☐ weir
- ☐ stormwater input

- ☐ point source (nonstormwater)
- ☒ filling/grading
- ☐ road bed/RR track
- ☐ dredging
- ☐ other _____

17	57.5
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

- 3.5
- ☒ None or none apparent (4)
 - ☒ Recovered (3)
 - ☐ Recovering (2)
 - ☐ Recent or no recovery (1)

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

- 6
- ☐ 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.

- 7.5
- ☒ 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

56.5
subtotal this page

Site: Wetland 1 Rater(s): JAV/DMG (CEC) Date: 5/16/2016

56.5
subtotal first page

5 61.5
max 10 pts. subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

15 76.5
max 20 pts. subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 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	Low spp diversity and/or predominance of nonnative or disturbance tolerant native species
mod	Native spp are dominant component of the vegetation, although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generally w/o presence of rare threatened or endangered spp
high	A predominance of native species, with nonnative spp and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

Mudflat and Open Water Class Quality

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

Microtopography Cover Scale

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

76.5

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM Summary Worksheet

Wetland 1

		circle answer or insert score	Result
Narrative Rating	Question 1 Critical Habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 2. Threatened or Endangered Species	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 3. High Quality Natural Wetland	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 4. Significant bird habitat	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 5. Category 1 Wetlands	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 1.
	Question 6. Bogs	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 7. Fens	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8a. Old Growth Forest	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3.
	Question 8b. Mature Forested Wetland	YES <input checked="" type="radio"/> NO <input type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9b. Lake Erie Wetlands - Restricted	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 9d. Lake Erie Wetlands - Unrestricted with native plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
Quantitative Rating	Question 9e. Lake Erie Wetlands - Unrestricted with invasive plants	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Question 10. Oak Openings	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, Category 3
	Question 11. Relict Wet Prairies	YES <input type="radio"/> NO <input checked="" type="radio"/>	If yes, evaluate for Category 3; may also be 1 or 2.
	Metric 1. Size	6	
	Metric 2. Buffers and surrounding land use	9	
	Metric 3. Hydrology	24.5	
	Metric 4. Habitat	17	
	Metric 5. Special Wetland Communities	5	
Metric 6. Plant communities, interspersion, microtopography	15		
TOTAL SCORE	76.5	Category based on score breakpoints 3	

Complete Wetland Categorization Worksheet.

Wetland Categorization Worksheet

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

Final Category			
Choose one	Category 1	Category 2	<input checked="" type="radio"/> Category 3

End of Ohio Rapid Assessment Method for Wetlands.

Wetland 2

Version 5.0	Ohio Rapid Assessment Method for Wetlands 10 Page Form for Wetland Categorization	
	Background Information Scoring Boundary Worksheet Narrative Rating Field Form Quantitative Rating ORAM Summary Worksheet Wetland Categorization Worksheet	Ohio EPA, Division of Surface Water Final: February 1, 2001

Instructions

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

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

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

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

Background Information

Name: <u>Joey Van Schaik / Dustin Griesler</u>	
Date: <u>5/18/2016</u>	
Affiliation: <u>Civil & Environmental Consultants</u>	
Address: <u>5899 Montclair Blvd, Milford, Ohio 45150</u>	
Phone Number: <u>513-483-3522</u>	
e-mail address: <u>jvanskaik@cecinc.com / dgriesler@cecinc.com</u>	
Name of Wetland: <u>Wetland 2</u>	
Vegetation Community(ies): <u>PFO/PEM</u>	
HGM Class(es): <u>Riverine</u>	
Location of Wetland: Include map, address, north arrow, landmarks, distances, roads, etc. <u>See CEC's Wetland and Waterbody Report</u>	
Lat/Long or UTM Coordinate	<u>39.083414, -84.427486</u>
USGS Quad Name	<u>Newport, KY-OH</u>
County	<u>Hamilton</u>
Township	<u>11</u>
Section and Subsection	<u>E023</u>
Hydrologic Unit Code	<u>05090203 - Middle Ohio - Laughery</u>
Site Visit	<u>5/18 + 5/19/2016</u>
National Wetland Inventory Map	<u>N/A</u>
Ohio Wetland Inventory Map	<u>N/A</u>
Soil Survey	<u>UrUXCO, Urban land - Udothents complex, 0 to 12 percent slopes, occasionally flooded</u>
Delineation report/map	<u>See CEC's Wetland and Waterbody Report</u>

Name of Wetland: Wetland Z	
Wetland Size (acres, hectares):	~ 2 acres
Sketch: Include north arrow, relationship with other surface waters, vegetation zones, etc.	
<p>See CEC's Wetland and Waterbody Report</p>	
Comments, Narrative Discussion, Justification of Category Changes:	
<p>See CEC's Wetland and Waterbody Report</p>	
Final score :	52.5
Category:	Z

Scoring Boundary Worksheet

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

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

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

Narrative Rating

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

#	Question	Circle one	
1	Critical Habitat. Is the wetland in a township, section, or subsection of a United States Geological Survey 7.5 minute Quadrangle that has been designated by the U.S. Fish and Wildlife Service as "critical habitat" for any threatened or endangered plant or animal species? Note: as of January 1, 2001, of the federally listed endangered or threatened species which can be found in Ohio, the Indiana Bat has had critical habitat designated (50 CFR 17.95(a)) and the piping plover has had critical habitat proposed (65 FR 41812 July 6, 2000).	YES Wetland should be evaluated for possible Category 3 status Go to Question 2	<input checked="" type="radio"/> NO Go to Question 2
2	Threatened or Endangered Species. Is the wetland known to contain an individual of, or documented occurrences of federal or state-listed threatened or endangered plant or animal species?	YES Wetland is a Category 3 wetland. Go to Question 3	<input checked="" type="radio"/> NO Go to Question 3
3	Documented High Quality Wetland. Is the wetland on record in Natural Heritage Database as a high quality wetland?	YES Wetland is a Category 3 wetland Go to Question 4	<input checked="" type="radio"/> NO Go to Question 4
4	Significant Breeding or Concentration Area. Does the wetland contain documented regionally significant breeding or nonbreeding waterfowl, neotropical songbird, or shorebird concentration areas?	YES Wetland is a Category 3 wetland Go to Question 5	<input checked="" type="radio"/> NO Go to Question 5
5	Category 1 Wetlands. Is the wetland less than 0.5 hectares (1 acre) in size and hydrologically isolated and either 1) comprised of vegetation that is dominated (greater than eighty per cent areal cover) by <i>Phalaris arundinacea</i> , <i>Lythrum salicaria</i> , or <i>Phragmites australis</i> , or 2) an acidic pond created or excavated on mined lands that has little or no vegetation?	YES Wetland is a Category 1 wetland Go to Question 6	<input checked="" type="radio"/> NO Go to Question 6
6	Bogs. Is the wetland a peat-accumulating wetland that 1) has no significant inflows or outflows, 2) supports acidophilic mosses, particularly <i>Sphagnum</i> spp., 3) the acidophilic mosses have >30% cover, 4) at least one species from Table 1 is present, and 5) the cover of invasive species (see Table 1) is <25%?	YES Wetland is a Category 3 wetland Go to Question 7	<input checked="" type="radio"/> NO Go to Question 7
7	Fens. Is the wetland a carbon accumulating (peat, muck) wetland that is saturated during most of the year, primarily by a discharge of free flowing, mineral rich, ground water with a circumneutral pH (5.5-9.0) and with one or more plant species listed in Table 1 and the cover of invasive species listed in Table 1 is <25%?	YES Wetland is a Category 3 wetland Go to Question 8a	<input checked="" type="radio"/> NO Go to Question 8a
8a	"Old Growth Forest." Is the wetland a forested wetland and is the forest characterized by, but not limited to, the following characteristics: overstory canopy trees of great age (exceeding at least 50% of a projected maximum attainable age for a species); little or no evidence of human-caused understory disturbance during the past 80 to 100 years; an all-aged structure and multilayered canopies; aggregations of canopy trees interspersed with canopy gaps; and significant numbers of standing dead snags and downed logs?	YES Wetland is a Category 3 wetland. Go to Question 8b	<input checked="" type="radio"/> NO Go to Question 8b

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