

HYATT-CORRIDOR 345 KV LINE STRUCTURE REPLACEMENT PROJECT

AREAS OF ECOLOGICAL CONCERN, WETLAND DELINEATION, AND STREAM ASSESSMENT REPORT

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1.0 PROJECT DESCRIPTION

This document presents the results of the wetland delineation and stream assessment conducted by URS Corporation (URS) for the American Electric Power (AEP) proposed Hyatt-Corridor 345 kV Line Structure Replacement Project (Project). AEP is proposing to replace 14 existing single-circuit structures with new double-circuit steel poles. These structures extend for approximately 2.2 miles in Delaware County, Ohio. The existing line and structures to be replaced are shown on Figure 1. AEP has stated the rebuilt section of transmission line will involve approximately structure for structure replacement with new steel poles with concrete foundations on the existing centerline. Construction will occur within existing right-of-way.

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

- (E) *Environmental data. Describe the environmental impacts of the proposed project. This description shall include the following information:*
 - (2) *A description of the applicant's investigation concerning the presence or absence of areas of ecological concern (including national and state forests and parks, floodplains, wetlands, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries) that may be located within the areas likely to be disturbed by the project, a statement of the findings of the investigation, and a copy of any document produced as a result of the investigation.*

AEP retained URS to review areas of ecological concern, as defined above, within the proposed Project vicinity and conduct a field survey of wetlands and streams within the existing maintained right-of-way (approximately 75-feet on each side of the Project centerline or 150 feet of total width). This report will be used to assist AEP's efforts to avoid impacts to areas of ecological concern present in the study area during construction activities.

2.0 METHODS

2.1 Special Status Ecological Areas

URS reviewed desktop maps and GIS data in order to identify national and state forests and parks, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, and wildlife sanctuaries in the Project vicinity. GIS data sources included the ODNR Biodiversity Database and federal land and parks layers available from ESRI. Property ownership within 1,000 feet of the rebuild section of the Project was reviewed to identify parcels that may have special status. URS also noted land use during the field reconnaissance conducted on July 9, 2012.

Floodplains were evaluated based on the Federal Emergency Management Agency's (FEMA) Flood Map Viewer (<https://hazards.fema.gov/wps/portal/mapviewer>).



2.2 Wetland Delineation

The Project area was evaluated according to the procedures outlined in the U.S. Army Corps of Engineers (USACE) *Regional Supplement to the Corps of Engineers Wetland Delineation Manual Version 2.0: Midwest Region* (Regional Supplement) (USACE, 2010), and the USACE *1987 Wetland Delineation Manual* (1987 Manual) (Environmental Laboratory, 1987). The Regional Supplement was released in August, 2010 by the USACE to address regional wetland characteristics and improve the accuracy and efficiency of wetland delineation procedures. The Regional Supplement and the 1987 Manual define wetlands as areas that have positive evidence of three environmental parameters: hydric soils, wetland hydrology, and hydrophytic vegetation. Wetland boundaries are placed where one or more of these parameters give way to upland characteristics.

Since quantitative data were not available for any of the identified wetlands, URS utilized the routine delineation method described in the *1987 Manual* and *Regional Supplement* that consisted of a pedestrian site reconnaissance, including identifying the vegetation communities, soils identification, a geomorphologic assessment of hydrology, and notation of disturbance. The methodology used to examine each parameter is described in the following sections.

Soils: Soils profiles were examined with soil pits that were excavated with a shovel, and these soil profiles were examined for hydric soil characteristics. A *Munsell Soil Color Chart* (Kollmorgen Corporation, 2000) was used to identify the hue, value, and chroma of the matrix and mottles of the soils. Generally, mottled soils with a matrix chroma of two or less, or unmottled soils with a matrix chroma of one or less are considered to exhibit hydric soil characteristics (Environmental Laboratory, 1987). In sandy soils, mottled soils with a matrix chroma of three or less, or unmottled soils with a matrix chroma of two or less are considered to be hydric soils.

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

The *Regional Supplement* also states that if onsite data gathering is not practical, the growing season can be approximated by the number of days between the average (five years out of ten, or 50 percent probability) date of the last and first 28°F air temperature in the spring and fall, respectively. The National Weather Service WETS data obtained from the NRCS National Water and Climate Center for Delaware County, Ohio reveals that in an average year, this period begins between April 15, and lasts until October 23, or 191 days. In the Project area, five percent of the growing season equates to approximately 9.5 days (USDA, 2012).



The soils and ground surface were examined for evidence of wetland hydrology in lieu of detailed hydrological data. This is an acceptable approach according to the *1987 Manual* and the *Regional Supplement*. Evidence indicating wetland hydrology typically includes primary indicators such as surface water, saturation, water marks, drift deposits, water-stained leaves, sediment deposits and oxidized rhizospheres on living roots; and secondary indicators such as, drainage patterns, geomorphic position, micro-topographic relief, and a positive Facultative (FAC)-neutral test (USACE, 2010).

A review of United States Geological Survey (USGS) watershed data indicates that the Project is located within the Upper Scioto Watershed of the Scioto River Basin Subregion (USGS, 2011). Within this watershed, the project will cross two minor watersheds: Hoover Reservoir-Big Walnut Creek and Prairie Run-Big Walnut Creek (USDA NRCS 2011).

Vegetation: Dominant vegetation was visually assessed for each stratum (tree, sapling/shrub, herb and woody vine) and an indicator status of obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), and/or upland (UPL) was assigned to each plant species based on the *1988 National List of Plant Species that Occur in Wetlands: Region 1* (Region 1 encompasses the state of Ohio). An area is determined to have hydrophytic vegetation when, under normal circumstances, 50 percent or more of the composition of the dominant species are OBL, FACW and/or FAC species. Vegetation of an area was determined to be non-hydrophytic when more than 50 percent of the composition of the dominant species was FACU and/or UPL species. In addition to the dominance test, the FAC-Neutral test and prevalence tests are used to determine if a wetland has a predominance of hydrophytic vegetation. Table 2 lists the vegetation that was identified in delineated wetlands during field surveys.

Wetland Classifications: Wetlands were classified based on the naming convention found in *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin *et al*, 1979). All identified wetlands within the survey corridor were classified as freshwater, Palustrine Systems, which includes all nontidal wetlands dominated by trees, shrubs, emergents, mosses or lichens. One Palustrine wetland class was identified within the Project survey corridor. The wetland class was as follows:

PEM – Emergent wetlands are characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

Ohio Rapid Assessment Method v. 5.0: The Ohio Environmental Protection Agency (Ohio EPA) Ohio Rapid Assessment Method for Wetlands v. 5.0 (ORAM) was developed to determine the relative ecological quality and level of disturbance of a particular wetland in order to meet requirements under Section 401 of the Clean Water Act. Wetlands are scored on the basis of hydrology, upland buffer, habitat alteration, special wetland communities, and vegetation communities. Each of these subject areas is further divided into subcategories under ORAM v5.0 resulting in a score that describes the wetland using a range from 0 (low quality and high disturbance) to 100 (high quality and low disturbance). Wetlands scored from 0 to 29.9 are grouped into "Category 1", 30 to 59.9 are "Category 2" and 60 to 100 are "Category 3". Transitional zones exist between "Categories 1 and 2" from 30 to 34.9 and between

"Categories 2 and 3" from 60 to 64.9. However, according to the Ohio EPA, if the wetland score falls into the transitional range, it must be given the higher Category unless scientific data can prove it should be in a lower Category (Mack, 2001). The ORAM scores for the wetlands that were delineated are discussed in Section 3.2 of this report. The three categories of wetlands defined by the individual wetland ORAM scores are defined in the following paragraphs:

Category 1 Wetlands – Category 1 wetlands support minimal wildlife habitat, hydrological and recreational functions, and do not provide for or contain critical habitats for threatened or endangered species. In addition, Category 1 wetlands are often hydrologically isolated and have some or all of the following characteristics: low species diversity, no significant habitat or wildlife use, limited potential to achieve wetland functions, and/or a predominance of non-native species. These limited quality wetlands are considered to be a resource that has been severely degraded or has a limited potential for restoration, or is of low ecological functionality.

Category 2 Wetlands – Category 2 wetlands "...support moderate wildlife habitat, or hydrological or recreational functions," and as wetlands which are "...dominated by native species but generally without the presence of, or habitat for, rare, threatened or endangered species; and wetlands which are degraded but have a reasonable potential for reestablishing lost wetland functions." Category 2 wetlands constitute the broad middle category of "good" quality wetlands, and can be considered a functioning, diverse, healthy water resource that has ecological integrity and human value. Some Category 2 wetlands are lacking in human disturbance and considered to be naturally of moderate quality; others may have been Category 3 wetlands in the past, but have been degraded to Category 2 status.

Category 3 Wetlands – Wetlands that are assigned to Category 3 have "...superior habitat, or superior hydrological or recreational functions." They are typified by high levels of diversity, a high proportion of native species, and/or high functional values. Category 3 wetlands include wetlands which contain or provide habitat for threatened or endangered species, are high quality mature forested wetlands, vernal pools, bogs, fens, or which are scarce regionally and/or statewide. It is important to stress that a wetland may be a Category 3 wetland because it exhibits one or all of the above characteristics. For example, a forested wetland located in the flood plain of a river may exhibit "superior" hydrologic functions (e.g. flood retention, nutrient removal), but not contain mature trees or high levels of plant species diversity.

2.3 Stream and River Crossings

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

Stream assessments were conducted using the methods described in the Ohio EPA's Methods for Assessing Habitat in Flowing Waters: Using Ohio EPA's *Qualitative Habitat Evaluation Index* (Rankin, 2006) and *Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams, version 3* (Davic, 2012).

Ohio EPA Qualitative Habitat Evaluation Index: The qualitative habitat evaluation index (QHEI) is designed to provide a rapid determination of habitat features that correspond to those physical factors that most affect fish communities and which are generally important to other aquatic life (e.g., macroinvertebrates). The quantitative measure of habitat used to calibrate the QHEI score are Indices (or Index) of Biotic Integrity (IBI) for fish. In most instances the QHEI is sufficient to give an indication of habitat quality, and the intensive qualitative analysis used to measure the IBI is not necessary. It is the IBI, rather than the QHEI, that is directly correlated with the aquatic life use designation for a particular surface water.

The QHEI method is generally considered appropriate for waterbodies with drainage basins greater than one square mile, if natural pools are greater than 40 cm, or if the water feature is shown as blue-line waterways on USGS 7.5-minute topographic quadrangle maps. In order to convey general stream habitat quality to the regulated public, the Ohio EPA has assigned narrative ratings to QHEI scores. The ranges vary slightly for headwater streams (H are those with a watershed area less than or equal to 20 square miles) versus larger streams (L are those with a watershed area greater than 20 square miles). The Narrative Rating System includes: Very Poor (<30 H and L), Poor (30 to 42 H, 30 to 44 L), Fair (43 to 54 H, 45 to 59 L), Good (55 to 69 H, 60 to 74 L) and Excellent (70+ H, 75+ L). One QHEI stream was identified within the Project study area and is discussed in Section 3.3 of this report.

Ohio EPA Primary Headwater Habitat Evaluation Index: Headwater streams are typically considered to be first-order and second-order streams, meaning streams that have no upstream tributaries (or "branches") and those that have only first-order tributaries, respectively. The stream order concept can be problematic when used to define headwater streams because stream-order designations vary depending upon the accuracy and resolution of the stream delineation. Headwater streams are generally not shown on USGS 7.5-minute topographic quadrangles and are sometimes difficult to distinguish on aerial photographs. Nevertheless, headwater streams are now recognized as useful monitoring units due to their abundance, widespread spatial scale and landscape position (Fritz, et al. 2006). Impacts to headwater streams can have a cascading effect on the downstream water quality and habitat value. The headwater habitat evaluation index (HHEI) is a rapid field assessment method for physical habitat that can be used to appraise the biological potential of most Primary Headwater Habitat (PHWH) streams. The HHEI was developed using many of the same techniques as used for QHEI, but has criteria specifically designed for headwater habitats. To use HHEI, the stream must have a "defined bed and bank, with either continuous or periodically flowing water, with watershed area less than or equal to 1.0 mi² (259 ha), and a maximum depth of water pools equal to or less than 15.75 inches (40 cm)" (Davic, 2012).

Headwater streams are scored on the basis of channel substrate composition, bankfull width, and maximum pool depth. Assessments result in a score (0 to 100) that is converted to a specific PHWH

stream class. Streams that are scored from 0 to 29.9 are typically grouped into "Class 1 PWH Streams", 30 to 69.9 are "Class 2 PWH Streams", and 70 to 100 are "Class 3 PWH Streams". Technically, a stream can score relatively high, but actually belong in a lower class, and vice-versa. According to the Ohio EPA, if the stream score falls into a class and the scorer feels that based on site observations that score does not reflect the actual stream class, a decision-making flow chart can be used to determine appropriate PWH stream class using the HHEI protocol (Davic, 2012). Evidence of anthropogenic alterations to the natural channel will result in a "Modified" qualifier for the stream. Results of HHEI assessed streams are discussed in Section 3.3 of this report.

Class 1 PWH Streams: Class 1 PWH Streams are those that have "normally dry channels with little or no aquatic life present" (Davic, 2012). These waterways are usually ephemeral, with water present for short periods of time due to infiltration from snowmelts or rainwater runoff.

Class 2 PWH Streams: Class 2 PWH Streams are equivalent to "warm-water habitat" streams. This stream class has a "moderately diverse community of warm-water adapted native fauna either present seasonally or on an annual basis" (Davic, 2012). These species communities are composed of vertebrates (fish and salamanders) and/or benthic macroinvertebrates that are considered pioneering, headwater temporary, and/or temperature facultative species.

Class 3 PWH Streams: Class 3 PWH Streams usually have perennial water flow with cool-cold water adapted native fauna. The community of Class 3 PWH Streams is comprised of vertebrates (either cold water adapted species of headwater fish and or obligate aquatic species of salamanders, with larval stages present), and/or a diverse community of benthic cool water adapted macroinvertebrates present in the stream continuously (on an annual basis).

3.0 RESULTS

3.1 Special Status Ecological Areas

Based on published resources, no national or state forests and parks, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, wildlife sanctuaries or floodplains were identified within 1,000 feet of the Project. No impacts to these special status ecological areas are anticipated.

3.2 Wetland Delineation

A total of five wetlands (0.79 acre) were identified within the Project 150-foot survey corridor. URS considers all five wetlands to be jurisdictional (i.e., "Waters of the U.S."). All of the five wetlands were of a single wetland habitat type: palustrine emergent (PEM). Wetlands identified within the 150-foot survey corridor are summarized in Table 1. Based on ORAM v. 5.0 methodology, three of the five wetlands within the 150-foot survey corridor are Category 1 wetlands, and the remaining two wetlands are Category 2 wetlands. No Category 3 wetlands were identified in the Project survey corridor. Wetland 5 had the lowest ORAM score, 22, and Wetland 4 had the highest score, 39.



Category 1 Wetlands – The three Category 1 wetlands delineated within the 150-foot survey corridor were all identified as PEM wetlands. The highest scoring Category 1 wetland was 29 (Wetland 1 and 2), and the lowest was 22 (Wetland 5). These wetlands typically exhibited narrow upland buffers and intensive use of surrounding upland areas (row cropping, open pasture, residential, or existing rights-of-way), exhibited limited plant community development with a nearly absent to high percentage of invasive species, and characteristically had habitat and hydrology in the early stages of recovering from previous manipulation because of farming or other disturbances.

Category 2 Wetlands – The two Category 2 wetlands delineated within the 150-foot survey corridor were both identified as PEM wetlands. The highest scoring Category 2 wetland was 39 (Wetland 4), and the lowest was 33 (Wetland 3). These wetlands exhibited a fair to moderately-high quality plant community, moderately high to high intensity surrounding land use, and had recovered or were recovering from modification to substrate and habitat.

Category 3 Wetlands – No Category 3 wetlands were identified in the Project survey corridor.

The locations and approximate extents of the wetlands identified within the 150-foot survey corridor are shown on Figures 2A through 2E. Completed USACE wetland delineation and ORAM forms are provided in Appendix A. Color photographs were taken of each delineated wetland during the field survey and are provided in Appendix C. Table 2 lists the vegetation that was identified in delineated wetlands during field surveys.

TABLE 1
DELINEATED WETLANDS WITHIN THE
HYATT-CORRIDOR 2nd 345 kV CIRCUIT 150 FOOT SURVEY CORRIDOR

Report Name	Cowardin Wetland Type ^a	Wetland Description	ORAM Score	ORAM Category	Acreage within 150-Foot Corridor	Approximate Length Crossed by Transmission Line (feet) ^b
Wetland 1	PEM	Emergent wetland in existing transmission line right-of way that is a portion of a larger wetland complex.	29	1	0.17	61
Wetland 2	PEM	Emergent wetland in existing transmission line right-of way.	29	1	0.03	NC
Wetland 3	PEM	Emergent wetland in existing transmission line right-of way. Wetland is located abutting Stream 3.	33	2	0.40	196
Wetland 4	PEM	Emergent wetland in existing transmission line right-of-way. Depressional wetland that is located adjacent to agricultural field.	39	2	0.18	4
Wetland 5	PEM	Emergent wetland within transmission line right-of-way. Located between two agricultural fields and has drain tiles within.	22	1	0.12	NC
Total: 5 Wetlands					0.79	260

Wetlands listed from West to East

Cowardin Wetland Type^a: PEM – palustrine emergent

Linear Feet Crossed by Centerline (feet)^b: NC = Not Crossed by centerline

TABLE 2
VEGETATION IDENTIFIED WITHIN DELINEATED WETLANDS

Common Name	Scientific Name	Stratum ^a	Region 1 Indicator Status ^b
American Wild Mint	<i>Mentha arvensis</i>	H	FACW
Arrow-Leaf Tearthumb	<i>Polygonum sagittatum</i>	H	OBL
Black Willow	<i>Salix nigra</i>	S	OBL
Blunt Broom Sedge	<i>Carex tribuloides</i>	H	OBL
Common Boneset	<i>Eupatorium perfoliatum</i>	H	OBL
Dark-Green Bulrush	<i>Scirpus atrovirens</i>	H	OBL
Fox Sedge	<i>Carex vulpinoidea</i>	H	FACW
Fuller's Teasel	<i>Dipsacus fullonum</i>	H	FACU
Goldenrod	<i>Solidago</i> sp.	H	FAC
Indian-Hemp	<i>Apocynum cannabinum</i>	H	FAC
Lamp Rush	<i>Juncus effusus</i>	H	OBL
Lesser Poverty Rush	<i>Juncus tenuis</i>	H	FAC
Narrowleaf Cattail	<i>Typha angustifolia</i>	H	OBL
Pinkweed	<i>Persicaria pensylvanica</i>	H	FACW
Reed Canary Grass	<i>Phalaris arundinacea</i>	H	FACW
Rice Cutgrass	<i>Leersia oryzoides</i>	H	OBL
Sedge	<i>Carex</i> sp	H	FAC
Sensitive Fern	<i>Onoclea sensibilis</i>	H	FACW
Single-Vein Sweetflag	<i>Acorus calamus</i>	H	OBL
Skunk-Cabbage	<i>Symplocarpus foetidus</i>	H	OBL
Spotted Touch-Me-Not	<i>Impatiens capensis</i>	H	FACW
Swamp Milkweed	<i>Asclepias incarnata</i>	H	OBL
Swamp Verbena	<i>Verbena hastata</i>	H	FACW

^a H = herb, S = shrub or sapling, T = tree, V = vine

^b Wetland Indicator Status for Region 1 (The State of Ohio, including the entire project area, is in Region 1)

OBL - Obligate Wetland - Occurs almost always (99% probability) in wetlands

FACW - Facultative Wetlands - Usually occurs in wetlands (67 - 99% probability)

FAC - Facultative - Equally likely to occur in wetlands or non-wetlands (34 - 66% probability)

FACU - Facultative Upland - Usually occurs in non-wetlands (67 - 99% probability)

UPL - Obligate Upland - Occurs almost always in non-wetlands (99% probability)

Preliminary Soils Evaluation: According to the *Web Soil Survey* for Delaware County, Ohio (USDA, 2012) and the Natural Resources Conservation Services Hydric Soils List of Ohio, nine soil map units from seven soil series are mapped within the 150-foot survey corridor, and include seven soil series with hydric soil map units (USDA, 2011). Soils in each wetland were observed and documented as part of the



delineation methodology. Soil series located within the Project area are shown on Figures 2A through 2E. Table 3 provides a list of these soil map units along with their basic attributes.

TABLE 3
HYATT-CORRIDOR 2nd 345 kV CIRCUIT
150-FOOT SURVEY CORRIDOR SOIL MAP UNITS AND DESCRIPTIONS

Soil Series	Symbol	Map Unit Description	Percent of Survey Corridor by Series	Topographic Setting	Hydric	Hydric Component (%)
Amanda	AmF	Amanda silt loam, 25 to 50 percent slopes	3.6	End moraines, ground moraines	no	n/a
Bennington	BeA	Bennington silt loam, 0 to 2 percent slopes	31.5	Flats on ground moraines, rises on ground moraines, flats on end moraines, rises on end moraines	Inclusions	Pewamo (5), Condit (5)
	BeB	Bennington silt loam, 2 to 6 percent slopes	2.4	Flats on ground moraines, rises on ground moraines, flats on end moraines, rises on end moraines	Inclusions	Pewamo (2), Condit (3)
Centerburg	CeB	Centerburg silt loam, 2 to 6 percent slopes, eroded	14.3	Till plains, moraines	Inclusions	Pewamo (5)
	CeC2	Centerburg silt loam, 6 to 12 percent slopes, eroded	0.4	Till plains, moraines	no	n/a
Gallman	GbB	Gallman silt loam, loamy substratum, 2 to 6 percent slopes	0.8	Outwash plains, kames, moraines, and outwash terraces	Inclusions	Millgrove (5)
Pewamo	PwA	Pewamo silty clay loam, 0 to 1 percent slopes	29.2	Depressions on ground moraines, flats on ground moraines, drainageways on ground moraines, depressions on end moraines, flats on end moraines, drainageways on end moraines	yes	Pewamo (85)
Sloan	SnA	Sloan silt loam, till substratum, 0 to 2 percent slopes, occasionally flooded	1.7	Depressions on ground moraines, flats on ground moraines, drainageways on ground moraines, depressions on end moraines, flats on end moraines, drainageways on end moraines	yes	Sloan (85)
Smothers	SsA	Smothers silt loam, 0 to 2 percent slopes	16.1	Ground moraines	Inclusions	Pewamo (5)

NOTES:

(1) Percentages do not add up to exactly 100% due to rounding

(2) Data sources include:

USDA, NRCS. 2011 Soil Survey Geographic (SSURGO) Database. Available online at: <http://soildatamart.nrcs.usda.gov/>
 USDA, NRCS. February 2011. National Hydric Soils List by State. Available online at: ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric_Soils/Lists/hydric_soils.xlsx
 USDA, NRCS. 1995. Soil Survey of Fairfield County, Ohio.
 USDA, NRCS. 1976. Soil Survey of Franklin County, Ohio.
 USDA, NRCS. 1986. Soil Survey of Licking County, Ohio.



National Wetland Inventory Map Review: National Wetland Inventory (NWI) wetlands are areas of potential wetland that have been identified from USFWS aerial photograph interpretation which have typically not been field verified. Forested and heavy scrub/shrub wetlands are often not shown on NWI maps as foliage effectively hides the visual signature that indicates the presence of standing water and moist soils from an aerial view. As a result, NWI maps do not show all the wetlands found in a particular area nor do they necessarily provide accurate wetland boundaries. NWI maps are useful for providing indications of potential wetland areas, which are often supported by soil mapping and hydrologic predictions, based upon topographical analysis using USGS topographic maps.

According to the NWI map of the Sunbury, Ohio quadrangle, the survey corridor contained one mapped NWI wetland, a Palustrine Freshwater Emergent, seasonally flooded wetland (PEM1C)¹. The mapped NWI wetland was not crossed by any of the delineated wetlands, but was located approximately 25-feet northwest of Wetland 2.

3.3 Stream and River Crossings

Streams within the 150-foot survey corridor are provided in Table 4. The locations of streams identified within the 150-foot survey corridor are shown on Figures 2A through 2E. Within the 150-foot survey corridor, five streams, totaling 1,244 feet, were assessed: one ephemeral and four intermittent waterbodies. Four streams were assessed using the HHEI methodology (drainage area less than 1 mi²), while one stream was assessed using the QHEI methodology (drainage area greater than 1 mi²). Based on USGS topographic quadrangle maps, none of these streams appear to be named. URS has preliminarily determined the five streams appear to be jurisdictional (i.e., "Waters of the U.S."), as they all appear to be tributaries that flow into or combine with other streams. Completed QHEI and HHEI forms are provided in Appendix B. Color photographs were taken of each stream during the field survey and are provided in Appendix C.

TABLE 4
STREAMS IDENTIFIED WITHIN THE
HYATT-CORRIDOR 2nd 345 kV CIRCUIT 150-FOOT SURVEY CORRIDOR¹

Stream Name	Flow Type	Estimated Width of Stream Crossing (feet)	Maximum Pool Depth (inches)	Approximate Length Within Survey Corridor (feet)	Assessment Used	Score	Narrative Description
Stream 1	Ephemeral	4	0	142	HHEI	40	Modified Class 2
Stream 2	Intermittent	5.5	0	267	HHEI	46	Modified Class 2
Stream 3	Intermittent	6	0	160	HHEI	41	Modified Class 2
Stream 4	Intermittent	4.5	12	369	QHEI	44	Fair Warmwater Habitat
Stream 5	Intermittent	2	3	306	HHEI	39	Modified Class 2
Total: 5 Streams				1,244			

¹Streams are listed from west to east.

¹ USFWS National Wetland Inventory Classification De-coder: <http://137.227.242.85/Data/interpreters/wetlands.aspx>



Qualitative Habitat Evaluation Index: Field surveys along the ecology survey corridor identified one Qualitative Habitat Evaluation Index stream. Stream 4 was identified as a Fair Warmwater habitat stream.

Primary Headwater Habitat Evaluation Index: Field surveys along the ecology survey corridor identified four primary headwater streams: four Class 2 streams.

Class 1 Headwater Streams – No Class 1 headwater streams were evaluated during the field investigations.

Class 2 Headwater Streams – No Class 2 headwater streams were evaluated during the field investigations.

Modified Class 2 Headwater Streams - Four Modified Class 2 headwater streams, approximately 1,244 linear feet in length, were identified during the field investigation. One of the streams was ephemeral and the remaining four streams were intermittent, with scores that range between 39 and 46. The substrates consisted mainly of cobble and gravel, with lesser amounts of clay and silt. The streams all contained evidence of stream channel modification (riparian vegetation clearance), which resulted in the stream receiving a Modified Class 2 designation. The streams were all dry at the time of the field investigations, and the bank full width did not exceed six feet.

Class 3 Headwater Streams – No Class 3 headwater streams were evaluated during the field investigations.

4.0 SUMMARY

No national or state forests and parks, designated or proposed wilderness areas, national and state wild and scenic rivers, wildlife areas, wildlife refuges, wildlife management areas, wildlife sanctuaries or floodplains were identified within 1,000 feet of the rebuild sections of the Project.

During the field survey, a total of five wetlands were identified within the 150-foot survey corridor. The five wetlands totaled 0.79 acres within the survey area. These wetlands are of a single wetland habitat type: palustrine emergent (PEM). Three of the wetlands were classified as Category I wetlands, and the remaining two wetlands were classified as a Category II wetlands.

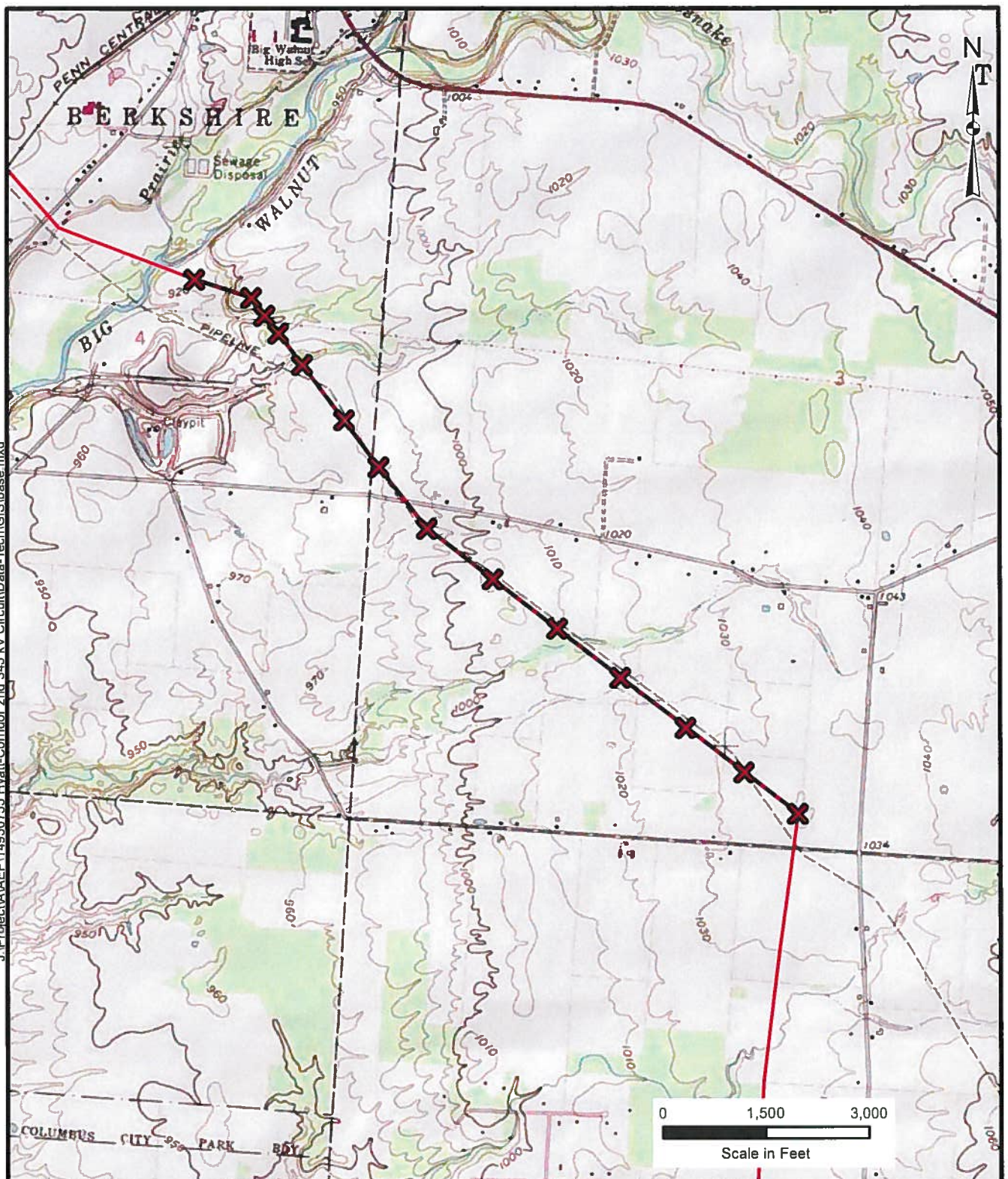
Within the 150-foot survey corridor, five streams, totaling 1,244 feet, were assessed: one ephemeral and four intermittent. Four streams were assessed using the HHEI methodology (drainage area less than 1 mi²) and one stream was assessed using the QHEI methodology (drainage area greater than 1 mi²). The four HHEI streams were all identified as Modified Class 2 streams, while the QHEI stream was identified as a Fair Warmwater habitat stream.



5.0 CONCLUSION

This report will be used to assist AEP's efforts to avoid wetlands and streams to the extent possible during the installation of additional structures and use of construction access routes, thereby minimizing impacts to any wetlands and streams identified along the length of the new circuit. While pole placement and access roads have not been fully engineered to date, it is expected that most wetlands and streams can be spanned due to their locations, size, and infrequency of occurrence. Surficial impacts to wetlands, if any, will likely result from vehicular impacts during rebuild operations. Erosion control methods including silt fencing are expected to be used where appropriate to minimize runoff related impacts to wetlands and stream channels. As a consequence, significant impacts to these "Waters of the U.S." are not anticipated. Notification or permit applications under Sections 401 and/or 404 of the Clean Water Act are not expected to be required by either the Ohio EPA or the USACE for this project.

J:\Project\VAEP\14950755 Hyatt-Corridor 2nd 345 kV Circuit\Data-Tech\GIS\base.mxd



LEGEND:

- Hyatt-Corridor 345 kV Transmission Line
- Rebuild Section
- Structure to be Replaced

BASE MAP SOURCE:
ArcGIS Map Service, USA Topo Maps

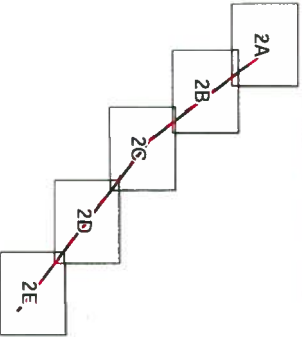


Hyatt-Corridor 345 kV Line
Structure Replacement

FIGURE 1
PROJECT OVERVIEW

JOB NO. 14950755

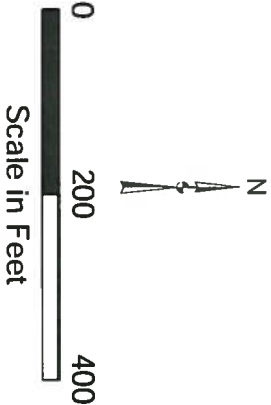




Overview Map

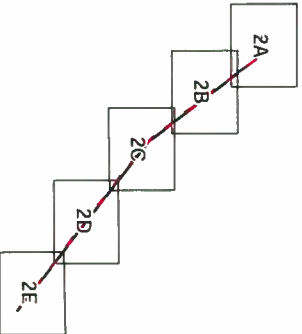
- LEGEND**
- Hyatt-Corridor 345 kV Transmission Line
 - Rebuild Section
 - Structure to be Replaced
 - 150-foot Ecological Survey Corridor
 - National Wetland Inventory Area
 - Soil Series Boundary
 - Delineated Wetland
 - Delineated Stream

Symbol	Map Unit Description
Amf	Amanda silt loam, 25 to 50 percent slopes
BeA	Bennington silt loam, 0 to 2 percent slopes
BeB	Bennington silt loam, 2 to 4 percent slopes
CeB	Centerburg silt loam, 2 to 6 percent slopes
CeC2	Centerburg silt loam, 6 to 12 percent slopes, eroded
GbB	Gallman silt loam, loamy substratum, 2 to 6 percent slopes
PWA	Pewamo silty clay loam, 0 to 1 percent slopes
SloA	Sloan silt loam, till substratum, 0 to 2 percent slopes, occasionally flooded
SsA	Smothers silt loam, 0 to 2 percent slopes



AEP
Hyatt-Corridor 345 kV Line
Structure Replacement

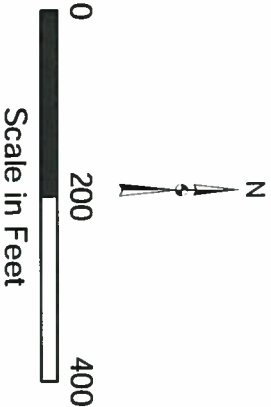
FIGURE 2A
ECOLOGICAL SURVEY RESULTS



Overview Map

- LEGEND**
- Hyatt-Corridor 345 kV Transmission Line
 - Rebuild Section
 - Structure to be Replaced
 - 150-foot Ecological Survey Corridor
 - National Wetland Inventory Area
 - Soil Series Boundary
 - Delineated Wetland
 - Delineated Stream

Symbol	Map Unit Description
Amf	Amundsen silt loam, 25 to 50 percent slopes
BeA	Bennington silt loam, 0 to 2 percent slopes
BeB	Bennington silt loam, 2 to 4 percent slopes
CeB	Centerburg silt loam, 2 to 6 percent slopes
CeC2	Centerburg silt loam, 6 to 12 percent slopes, eroded
Gbb	Gallman silt loam, loamy substratum, 2 to 6 percent slopes
PwA	Pewamun silt loam, 0 to 1 percent slopes
SNA	Sloan silt loam, till substratum, 0 to 2 percent slopes, occasionally flooded
SSA	Smother's silt loam, 0 to 2 percent slopes

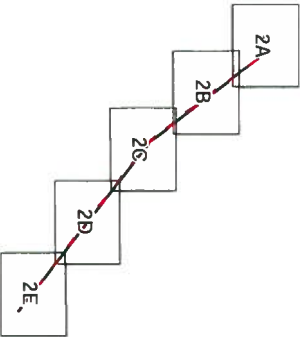


Scale in Feet

BASE MAP SOURCE:
ArcGIS Map Service, Bing Maps Hybrid

AEP Hyatt-Corridor 345 kV Line
Structure Replacement

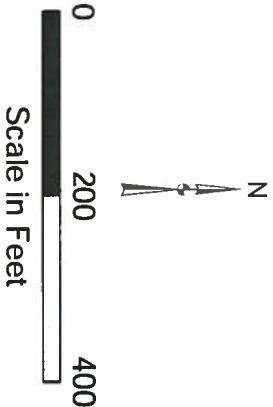
FIGURE 2B
ECOLOGICAL SURVEY RESULTS



Overview Map

- LEGEND**
- Hyatt-Corridor 345 kV Transmission Line
 - Rebuild Section
 - Structure to be Replaced
 - 150-foot Ecological Survey Corridor
 - National Wetland Inventory Area
 - Soil Series Boundary
 - Delineated Wetland
 - Delineated Stream

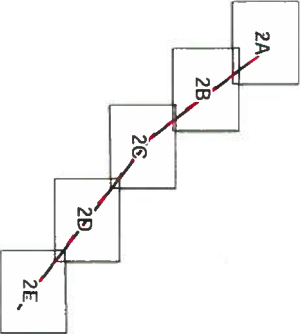
Symbol	Map Unit Description
Amf	Amanda silt loam, 25 to 50 percent slopes
BeA	Bennington silt loam, 0 to 2 percent slopes
BeB	Bennington silt loam, 2 to 4 percent slopes
CcB	Centerburg silt loam, 2 to 6 percent slopes
CcC2	Centerburg silt loam, 6 to 12 percent slopes, eroded
Gbb	Gallman silt loam, loamy substratum, 2 to 6 percent slopes
PwA	Pewamo silty clay loam, 0 to 1 percent slopes
SsA	Sloan silt loam, till substratum, 0 to 2 percent slopes, occasionally flooded
SsA	Smothers silt loam, 0 to 2 percent slopes



BASE MAP SOURCE:
ArcGIS Map Service, Bing Maps Hybrid

AEP
Hyatt-Corridor 345 kV Line
Structure Replacement

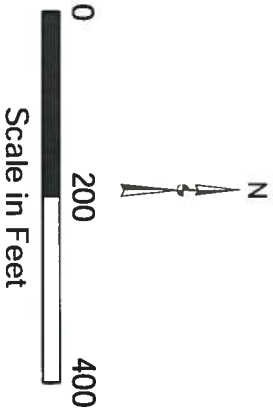
FIGURE 2C
ECOLOGICAL SURVEY RESULTS



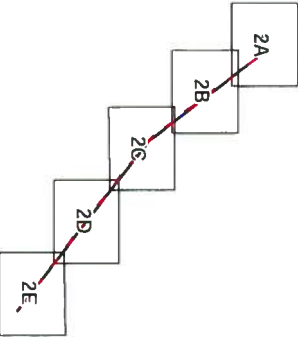
Overview Map

- LEGEND
- Hyatt-Corridor 345 kV Transmission Line
 - Rebuild Section
 - Structure to be Replaced
 - 150-foot Ecological Survey Corridor
 - National Wetland Inventory Area
 - Soil Series Boundary
 - Delineated Wetland
 - Delineated Stream

Symbol	Map Unit Description
Amf	Amanda silt loam, 25 to 50 percent slopes
BeA	Bennington silt loam, 0 to 2 percent slopes
BeB	Bennington silt loam, 2 to 4 percent slopes
CcB	Centerburg silt loam, 2 to 6 percent slopes
Cec2	Centerburg silt loam, 6 to 12 percent slopes, eroded
Gbb	Gallman silt loam, loamy substratum, 2 to 6 percent slopes
PwA	Pewamo silty clay loam, 0 to 1 percent slopes
SmA	Sloan silt loam, till substratum, 0 to 2 percent slopes, occasionally flooded
SsA	Smothers silt loam, 0 to 2 percent slopes



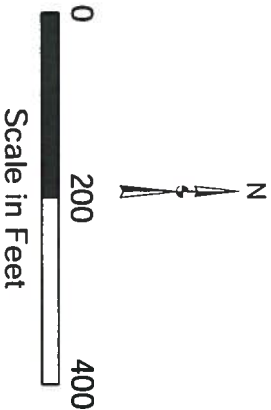
BASE MAP SOURCE:
ArcGIS Map Service, Bing Maps Hybrid



Overview Map

- LEGEND
- Hyatt-Corridor 345 kV Transmission Line
 - Rebuild Section
 - Structure to be Replaced
 - 150-foot Ecological Survey Corridor
 - National Wetland Inventory Area
 - Soil Series Boundary
 - Delineated Wetland
 - Delineated Stream

Symbol	Map Unit Description
Amf	Amanda silt loam, 25 to 50 percent slopes
BeA	Bennington silt loam, 0 to 2 percent slopes
BeB	Bennington silt loam, 2 to 4 percent slopes
CeB	Centerburg silt loam, 2 to 6 percent slopes
Cec2	Centerburg silt loam, 6 to 12 percent slopes, eroded
GdB	Gallman silt loam, loamy substratum, 2 to 6 percent slopes
PwA	Pewamo silty clay loam, 0 to 1 percent slopes
SnA	Sloan silt loam, till substratum, 0 to 2 percent slopes, occasionally flooded
SsA	Smothers silt loam, 0 to 2 percent slopes



BASE MAP SOURCE:
ArcGIS Map Service, Bing Maps Hybrid

AEP
Hyatt-Corridor 345 kV Line
Structure Replacement

FIGURE 2E
ECOLOGICAL SURVEY RESULTS

APPENDIX A

DELINEATED WETLAND FORMS

HYATT WETLAND 1

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: AEP HYATT-CORRIDOR 2nd 345KV City/County: SUNBURY, DELAWARE Sampling Date: 09 JULY 2012
 Applicant/Owner: AEP State: OH Sampling Point: WET. 1
 Investigator(s): BAO, MDT Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): TERRACE Local relief (concave, convex, none): CONCAVE
 Slope (%): _____ Lat: 40.223197 Long: -82.857288 Datum: _____
 Soil Map Unit Name: S_{NA} LOAN SILT LOAM NWI classification: NA

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 _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks: <u>PET WETLAND PORTION OF A LARGER COMPLEX THAT EXTENDS INTO ADJACENT WOODED AREAS. PET PORTION IS W/IN EXISTING TRANS ROW & IS ADJUTING STREAM 3.</u>		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</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>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Salix nigra</u>	<u>2</u>	<u>X</u>	<u>OBL</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
Herb Stratum (Plot size: _____)				
1. <u>Phalaris arundinacea</u>	<u>70</u>	<u>X</u>	<u>FACW</u>	
2. <u>Imperata capensis</u>	<u>20</u>		<u>FACW</u>	
3. <u>Symplocarpus foetidus</u>	<u>5</u>		<u>OBL</u>	
4. <u>Carex sp.</u>	<u>15</u>		<u>FAC</u>	
5. <u>Solidago sp.</u>	<u>10</u>		<u>FAC</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____ 1 - Rapid Test for Hydrophytic Vegetation X 2 - Dominance Test is >50% X 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.

HYATT WETLAND 2

SOIL

W-620 7/9/12-4
Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features				Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹				
0-14"	10YR 3/1	80	10YR 6/8	70	RM		M	silty clay	

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)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 5 cm Mucky Peat or Peal (S3)
- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☒ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ 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: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☐ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Water-Stained Leaves (B9)
☐ Aquatic Fauna (B13)
☐ True Aquatic Plants (B14)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Gauge or Well Data (D9)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☒ Surface Soil Cracks (B6)
☒ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☒ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☒ Geomorphic Position (D2)
☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

No hydrology field observations due to lack of rain and high temperatures recently.

HYATT WETLAND 3

W-BAO-070912-03

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: AEP HYATT-CORRIDOR #2 345KV City/County: SUNBURY, DELAWARE Sampling Date: 070912
 Applicant/Owner: AEP State: OH Sampling Point: _____
 Investigator(s): B. OTTO, M. THOMAYER Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): CONCAVE
 Slope (%): _____ Lat: 40.2167165 Long: -82.848211 Datum: _____
 Soil Map Unit Name: BRA, SEA, PWA NWI classification: RA
 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 _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	

Remarks:

PEM WETLAND LOCATED ABUTTING STREAM S-INDT-070912-03 (INT.)

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	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. _____				
5. _____				
_____ = Total Cover				
Sapling/Shrub Stratum (Plot size: _____)				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species <u>55</u> x 1 = <u>55</u>
3. _____				FACW species <u>50</u> x 2 = <u>100</u>
4. _____				FAC species <u>10</u> x 3 = <u>30</u>
5. _____				FACU species _____ x 4 = _____
_____ = Total Cover				UPL species <u>10</u> x 5 = <u>50</u>
				Column Totals: <u>105</u> (A) <u>235</u> (B)
				Prevalence Index = B/A = <u>1.88</u>
Herb Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. <u>Spartina - ACORNUS Calamus</u>	<u>40</u>	<u>X</u>	<u>OBL</u>	1 - Rapid Test for Hydrophytic Vegetation
2. <u>Verbena hastata</u>	<u>10</u>		<u>FACW</u>	<u>X</u> 2 - Dominance Test is >50%
3. <u>Scirpus atrovirens</u>	<u>15</u>		<u>OBL</u>	<u>X</u> 3 - Prevalence Index is ≤3.0 ¹
4. <u>Red Canary Grass - Phalaris arundinacea</u>	<u>30</u>	<u>X</u>	<u>FACW</u>	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. <u>Teasel - DIPSACUS</u>	<u>10</u>		<u>NI (UPL)</u>	Problematic Hydrophytic Vegetation ¹ (Explain)
6. <u>Mentha arvensis</u>	<u>5</u>		<u>FACW</u>	
7. <u>Solidago</u>	<u>10</u>		<u>FAC</u>	
8. <u>Foxglove - CORNUS VULPINOIDEA</u>	<u>5</u>		<u>FACW</u>	
9. _____				
10. _____				
<u>105</u> = Total Cover				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
Woody Vine Stratum (Plot size: _____)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. _____				
2. _____				
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

W-BAO-070912-03

HYATT WETLAND 3

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features			Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹			
0-8 in	10YR 2/1	90	10YR 4/6	10	RM	M	SILTY CLAY LOAM	

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)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 5 cm Mucky Peat or Peat (S3)

- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ 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: SEDIMENT
 Depth (inches): 8-9"

Hydric Soil Present? Yes X No _____

Remarks:

DARK IN COLOR w/ DISTINCT NODULES

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☐ Water Marks (B1)
☒ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)

- ☐ Water-Stained Leaves (B9)
☐ Aquatic Fauna (B13)
☐ True Aquatic Plants (B14)
☐ Hydrogen Sulfide Odor (C1)
☒ Oxidized Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Gauge or Well Data (D9)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
☒ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☒ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☐ Geomorphic Position (D2)
☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____
 Water Table Present? Yes _____ No X Depth (inches): _____
 Saturation Present? Yes _____ No X Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes X No _____

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

Remarks:

HYATT WETLAND 4

W-B40-070912-02

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: AEP Hyatt - Corridor #2 3456th County: SUNBURY, DELAWARE Sampling Date: 070912Applicant/Owner: AEP State: OH Sampling Point: _____Investigator(s): B. OTTO, M. THOMPSON Section, Township, Range: _____Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): CONCAVESlope (%): _____ Lat: 40.215945 Long: -82.847423 Datum: _____Soil Map Unit Name: PWA, SSA, CEB NWI classification: NAAre climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)Are Vegetation N, Soil V, 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 _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present?	Yes <u>X</u> No _____	
Wetland Hydrology Present?	Yes <u>X</u> No _____	
Remarks: <u>DEPRESSIONAL PFM WETLAND LOCATED W/IN EXISTING TRANS ROW & ADJACENT TO AGLAND</u>		

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</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>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
= Total Cover				
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Blue Cut Grass - Leersia orizoides</u>	<u>40</u>	<u>X</u>	<u>OBL</u>	
2. <u>Verbena hastata</u>	<u>5</u>		<u>FACW</u>	
3. <u>MOUNTAIN ARVENSIS</u>	<u>10</u>		<u>FACW</u>	
4. <u>Juncus effusus</u>	<u>5</u>		<u>OBL</u>	
5. <u>LEWIS WRIGHT - IMPATIENS capensis</u>	<u>10</u>		<u>FACW</u>	
6. <u>Acorus Calamus</u>	<u>30</u>	<u>X</u>	<u>OBL</u>	
7. <u>Boussier - Eupatorium perfoliatum</u>	<u>15</u>		<u>OBL</u>	
8. <u>FOX GLOVE - Carex vulpinoidea</u>	<u>2</u>		<u>FACW</u>	
9. <u>Polygala sagittatum</u>	<u>5</u>		<u>OBL</u>	
10. <u>Pink Clever Bulrush - Scirpus atrovirens</u>	<u>20</u>		<u>OBL</u>	
<u>TENSEL 5 N (UPL)</u>	<u>147</u>			
= Total Cover				
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
= Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				

Hydrophytic Vegetation Present? Yes X No _____

W-BAD-070912-02

HYATT WETLAND 4

SOIL

Sampling Point: _____

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)											
Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks			
	Color (moist)	%	Color (moist)	%							
0-8	10YR2/1	90	10YR2/8	10	RM	M	Silty CLAY LOAM	DARK SOILS MANY/DISTINCT			
8-10											
10-12											
12-14											
14-16											
16-18											
18-20											
20-22											
22-24											
24-26											
26-28											
28-30											
30-32											
32-34											
34-36											
36-38											
38-40											
40-42											
42-44											
44-46											
46-48											
48-50											
50-52											
52-54											
54-56											
56-58											
58-60											
60-62											
62-64											
64-66											
66-68											
68-70											
70-72											
72-74											
74-76											
76-78											
78-80											
80-82											
82-84											
84-86											
86-88											
88-90											
90-92											
92-94											
94-96											
96-98											
98-100											
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ² Location: PL=Pore Lining, M=Matrix.											
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils ³ :					
<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) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)						<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <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"/> Coast Prairie Redox (A16) <input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Iron-Manganese Masses (F12) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)		
Restrictive Layer (if observed): Type: <u>BEDROCK</u> Depth (inches): <u>8 IN</u>						³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.					
Hydric Soil Present? Yes _____ No _____											
Remarks:											

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Crayfish Burrows (C8)
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Gauge or Well Data (D9)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Other (Explain in Remarks)	
Field Observations:		
Surface Water Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____
Water Table Present? Yes _____ No <input checked="" type="checkbox"/>	Depth (inches): _____	
Saturation Present? Yes _____ No <input checked="" type="checkbox"/> (includes capillary fringe)	Depth (inches): _____	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks:		
DEPRESSIONAL AREA THAT GETS ALL FIELD RUNOFF		

HYATT WETLANDS

W-BAO-070912-01

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site: AEP HYATT-CORRIDOR 2nd 345KV City/County: DELAWARE Sampling Date: 09 JULY 2012
 Applicant/Owner: AED State: OH Sampling Point: 01
 Investigator(s): BOLTO, M. THOMPSON Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): NONE
 Slope (%): _____ Lat: 40.210455 Long: -82.837891 Datum: _____
 Soil Map Unit Name: BEB, PWA NWI classification: NA

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are 'Normal Circumstances' present? Yes ☒ 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 _____
 Hydric Soil Present? Yes ☒ No _____
 Wetland Hydrology Present? Yes ☒ No _____

Is the Sampled Area

within a Wetland?

Yes ☒ No _____

Remarks:

PEM WETLAND LOCATED BETWEEN AG. FIELDS WITH GOOD SPECIES DIVERSITY.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: _____)	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. _____	_____	_____	_____		
5. _____	_____	_____	_____		
_____ = Total Cover					
Sapling/Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:	
1. _____	_____	_____	_____	Total % Cover of: _____	Multiply by: _____
2. _____	_____	_____	_____	OBL species <u>77</u> x 1 = <u>77</u>	
3. _____	_____	_____	_____	FACW species <u>26</u> x 2 = <u>52</u>	
4. _____	_____	_____	_____	FAC species <u>35</u> x 3 = <u>105</u>	
5. _____	_____	_____	_____	FACU species _____ x 4 = _____	
_____ = Total Cover				UPL species _____ x 5 = _____	
				Column Totals: <u>138</u> (A) <u>234</u> (B)	
				Prevalence Index = B/A = <u>1.69</u>	
Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:	
1. <u>INDIAN Hemp - Apocynum cannabinum</u>	<u>15</u>		<u>FAC</u>	1 - Rapid Test for Hydrophytic Vegetation	
2. <u>SWAMP MILKWORT - Asclepias incarnata</u>	<u>5</u>		<u>OBL</u>	<input checked="" type="checkbox"/> 2 - Dominance Test is >50%	
3. <u>PATHWASH - Juncus tenuis</u>	<u>10</u>		<u>FAC</u>	<input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹	
4. <u>JUNCUS effusus</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>	4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5. <u>PORE-GREEN BURNING - Scirpus atrovirens</u>	<u>10</u>		<u>OBL</u>	Problematic Hydrophytic Vegetation ¹ (Explain)	
6. <u>BLUE VIRGINIA - Verbena hastata</u>	<u>2</u>		<u>FACW</u>		
7. <u>Solidago sp</u>	<u>10</u>		<u>FAC</u>		
8. <u>Carex tribuloides</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>OBL</u>		
9. <u>Polygonum Pennsylvanicum</u>	<u>5</u>		<u>FACW</u>		
10. <u>fox Sedge - Carex vulpinoidea</u>	<u>15</u>		<u>FACW</u>		
<u>- SENSITIVE FEEN - 2</u> <u>FACW</u> <u>138</u> = Total Cover					
Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
_____ = Total Cover					
Remarks: (Include photo numbers here or on a separate sheet.)					
<u>LEERSIA oryzoides</u> <u>15</u> <u>OBL</u> <u>NARROW LEAF CATTAIL</u> <u>2</u> <u>OBL</u>					
<u>MENTHA AQUATIS</u> <u>2</u> <u>FACW</u> <u>(TYPHA angustifolia)</u>					

W-BAO-070912-01

HYATT WETLAND 5

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix		Redox Features		Type ¹	Loc ²	Texture	Remarks
	Color (moist)	%	Color (moist)	%				
0-14	10YR 4/2	90	7.5YR 5/8	10	Rm	M	Silty clay Loam	Few/Discrete

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)
☐ Depleted Below Dark Surface (A11)
☐ Thick Dark Surface (A12)
☐ Sandy Mucky Mineral (S1)
☐ 5 cm Mucky Peat or Peal (S3)

- ☐ Sandy Gleyed Matrix (S4)
☐ Sandy Redox (S5)
☐ Stripped Matrix (S6)
☐ Loamy Mucky Mineral (F1)
☐ Loamy Gleyed Matrix (F2)
☐ Depleted Matrix (F3)
☐ Redox Dark Surface (F6)
☐ Depleted Dark Surface (F7)
☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils³:

- ☐ Coast Prairie Redox (A16)
☐ Dark Surface (S7)
☐ Iron-Manganese Masses (F12)
☐ 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: _____

Depth (inches): _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

SOILS WERE REAL DRY AT TIME OF SURVEY

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
☐ High Water Table (A2)
☐ Saturation (A3)
☒ Water Marks (B1)
☒ Sediment Deposits (B2)
☐ Drift Deposits (B3)
☐ Algal Mat or Crust (B4)
☐ Iron Deposits (B5)
☐ Inundation Visible on Aerial Imagery (B7)
☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water-Stained Leaves (B9)
☐ Aquatic Fauna (B13)
☐ True Aquatic Plants (B14)
☐ Hydrogen Sulfide Odor (C1)
☐ Oxidized Rhizospheres on Living Roots (C3)
☐ Presence of Reduced Iron (C4)
☐ Recent Iron Reduction in Tilled Soils (C6)
☐ Thin Muck Surface (C7)
☐ Gauge or Well Data (D9)
☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☒ Surface Soil Cracks (B6)
☒ Drainage Patterns (B10)
☐ Dry-Season Water Table (C2)
☐ Crayfish Burrows (C8)
☒ Saturation Visible on Aerial Imagery (C9)
☐ Stunted or Stressed Plants (D1)
☐ Geomorphic Position (D2)
☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No ☒ Depth (inches): _____Water Table Present? Yes ☐ No ☒ Depth (inches): _____Saturation Present? Yes ☐ No ☒ Depth (inches): _____
(includes capillary fringe)Wetland Hydrology Present? Yes ☒ No ☐

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

Remarks:

DRAINAGE TILES FROM THE FIELD LOCATED IN MIDDLE OF WETLAND

Site: AEP HYATT-CORRIDOR 2nd 345KV Rater(s): BAO, MDT Date: 07-09-10

2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

3	5
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.

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

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

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

20	25
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- | | |
|---|---|
| <input type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> other |

8	33
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- | | |
|---|--|
| <input checked="" type="checkbox"/> mowing | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input checked="" type="checkbox"/> grazing | <input checked="" type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting | <input checked="" type="checkbox"/> sedimentation |
| <input checked="" type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

33
subtotal this page

Site: ALP HYATT-CORRIDOR 22 34567 Rater(s): BAO, MPT Date: 070912

33

subtotal first page

0 33

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)

-4 29

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.**6a. Wetland Vegetation Communities.**

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
☒ Emergent
☐ Shrub
☐ Forest
☐ Mudflats
☐ Open water
☐ Other _____

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☒ Vegetated hummocks/tussocks
☒ Coarse woody debris >15cm (6in)
☒ Standing dead >25cm (10in) dbh
☒ 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

CAT 1

29

End of Quantitative Rating. Complete Categorization Worksheets.

HYATT WETLAND 2

W-DAO 7/9/12-4

Site: AEP-Hyatt Corridor #2 345Kv Rater(s): Date: 7 July 2012

0	0
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

1	1
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.

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

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

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

15	16
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed	
<input type="checkbox"/> ditch	<input type="checkbox"/> point source (nonstormwater)
<input type="checkbox"/> tile	<input type="checkbox"/> filling/grading
<input type="checkbox"/> dike	<input type="checkbox"/> road bed/RR track
<input type="checkbox"/> weir	<input type="checkbox"/> dredging
<input type="checkbox"/> stormwater input	<input type="checkbox"/> other

9	25
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed	
<input checked="" type="checkbox"/> mowing	<input checked="" type="checkbox"/> shrub/sapling removal
<input type="checkbox"/> grazing	<input type="checkbox"/> herbaceous/aquatic bed removal
<input checked="" type="checkbox"/> clearcutting	<input type="checkbox"/> sedimentation
<input checked="" type="checkbox"/> selective cutting	<input type="checkbox"/> dredging
<input type="checkbox"/> woody debris removal	<input type="checkbox"/> farming
<input type="checkbox"/> toxic pollutants	<input type="checkbox"/> nutrient enrichment

25
subtotal this page

HYATT WETLAND 2

ORAM v. 5.0 Field Form Quantitative Rating

10-120 7/9/12-4

Site: AEP Hyatt Corridor #2 345th Rater(s): M. Thonayer, B. Otto Date: 9 July 2012

25

subtotal first page

0 25

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)

4 29

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

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

6b. horizontal (plan view) Interspersion.

Select only one.

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

6c. Coverage of invasive plants. Refer 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)
- ☒ X Nearly absent <5% cover (0)
- ☐ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 1 Vegetated hummocks/tussucks
- ☐ 0 Coarse woody debris >15cm (6in)
- ☐ 0 Standing dead >25cm (10in) dbh
- ☒ 0 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

29

Category 1

End of Quantitative Rating. Complete Categorization Worksheets.

HYATT WETLAND 3

Site: W-BAD-070912-03	Rater(s): B. OTTO, M. THOMAYER	Date: 070912
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

3	5
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.

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

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

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

20	25
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

- | | |
|---|---|
| <input type="checkbox"/> ditch | <input type="checkbox"/> point source (nonstormwater) |
| <input type="checkbox"/> tile | <input type="checkbox"/> filling/grading |
| <input type="checkbox"/> dike | <input type="checkbox"/> road bed/RR track |
| <input type="checkbox"/> weir | <input type="checkbox"/> dredging |
| <input type="checkbox"/> stormwater input | <input type="checkbox"/> other _____ |

9	34
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

- | | |
|---|---|
| <input checked="" type="checkbox"/> mowing | <input checked="" type="checkbox"/> shrub/sapling removal |
| <input checked="" type="checkbox"/> grazing | <input type="checkbox"/> herbaceous/aquatic bed removal |
| <input checked="" type="checkbox"/> clearcutting | <input type="checkbox"/> sedimentation |
| <input checked="" type="checkbox"/> selective cutting | <input type="checkbox"/> dredging |
| <input type="checkbox"/> woody debris removal | <input type="checkbox"/> farming |
| <input type="checkbox"/> toxic pollutants | <input type="checkbox"/> nutrient enrichment |

34
subtotal this page

WATT Wetland 3

ORAM v. 5.0 Field Form Quantitative Rating

Site: W-1540-070912-03	Rater(s): BAO, MDT	Date: 070912
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34

subtotal first page

0	34
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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)

-1	33
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max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 2 Emergent
- ☐ 2 Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersions.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ 0 Vegetated hummocks/tussocks
- ☐ 0 Coarse woody debris >15cm (6in)
- ☐ 0 Standing dead >25cm (10in) dbh
- ☐ 0 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

CAT 2

33

End of Quantitative Rating. Complete Categorization Worksheets.

HYATT WETLAND 4

Site: W-BAD-0709B-02	Rater(s): BOTTO, M. THOMPSON	Date: 07/09/12
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2	2
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

4	8
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.

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

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

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

17	25
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

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

10	35
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

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

35
subtotal this page

Hyatt Wetland 4

Site: W-BAO-070912-02	Rater(s): B. Otto, M. Thomayer	Date: 070912
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35
subtotal first page

0	35
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)

4	39
max 20 pts.	subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ Emergent
- ☐ Shrub
- 2 ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

- ☐ High (5)
- ☐ Moderately high (4)
- 0 ☐ 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)
- 1 ☐ Sparse 5-25% cover (-1)
- ☐ Nearly absent <5% cover (0)
- ☒ Absent (1)

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussucks
- 1 ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☒ 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

CA 1.2

39

End of Quantitative Rating. Complete Categorization Worksheets.

Site: W-BAO-070912-01	Rater(s): B. O'NEIL, M. THOMAS	Date: 070912
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1	1
max 6 pts.	subtotal

Metric 1. Wetland Area (size).

Select one size class and assign score.

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

1	2
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.

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

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

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

8	10
max 30 pts.	subtotal

Metric 3. Hydrology.

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

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

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

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

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

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

3b. Connectivity. Score all that apply.

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

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

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

Check all disturbances observed

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

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

9	19
max 20 pts.	subtotal

Metric 4. Habitat Alteration and Development.

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

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

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

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

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

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

Check all disturbances observed

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

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

19
subtotal this page

HYATT WETLAND 5

Site: W-BAD-070912-01	Rater(s): BOHIO, M. THOMPSON	Date: 070912
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19

subtotal first page

0

19

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)

3

22

max 20 pts.

subtotal

Metric 6. Plant communities, interspersions, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- ☐ Aquatic bed
- ☒ 2 Emergent
- ☐ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other

6b. horizontal (plan view) Interspersion.

Select only one.

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

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

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- ☐ Vegetated hummocks/tussocks
- ☐ Coarse woody debris >15cm (6in)
- ☐ Standing dead >25cm (10in) dbh
- ☒ 1 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

CAT 1

22

End of Quantitative Rating. Complete Categorization Worksheets.

APPENDIX B

STREAM EVALUATION FORMS

11-17/9/2012-1



Primary Headwater Habitat Evaluation Form

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

40

SITE NAME/LOCATION REP - HyattDATE 11-17/9/2012-1 SITE NUMBER _____ RIVER BASIN _____ DRAINAGE AREA (mi²) < 1 mi²LENGTH OF STREAM REACH (ft) _____ LAT. 40.2250 LONG. 82.8572 RIVER CODE _____ RIVER MILE _____DATE 9 July 12 SCORER HDT, BKO COMMENTS No riparian corridor in ROW. Ephemeral

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

STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERYMODIFICATIONS: Maintained ROW limits growth of wooded riparian corridor

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

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]		<input type="checkbox"/> SILT [3 pts]	
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<u>10</u>	<input type="checkbox"/> LEAF PACKWOODY DEBRIS [3 pts]	
<input type="checkbox"/> BEDROCK [16 pts]		<input type="checkbox"/> FINE DETRITUS [3 pts]	
<input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<u>40</u>	<input type="checkbox"/> CLAY or HARDPAN [0 pts]	<u>20</u>
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<u>30</u>	<input type="checkbox"/> MUCK [0 pts]	
<input type="checkbox"/> SAND (<2 mm) [8 pts]		<input type="checkbox"/> ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 50(A) 21(B) 4

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40

25

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box)

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input checked="" type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____

MAXIMUM POOL DEPTH (centimeters) inches

Pool Depth Max = 30

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> 1.0 m (: 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters) feet

Bankfull Width Max=30

15

This information must also be completed

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

RIPARIAN WIDTH

L	R	(Per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Wide >10m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input type="checkbox"/>	<input type="checkbox"/>	Narrow <5m
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	None

COMMENTS _____

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland
<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field
<input type="checkbox"/>	<input type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

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

<input type="checkbox"/> Stream Flowing	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input checked="" type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS _____

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

<input checked="" type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

<input type="checkbox"/> Flat (0.5 m/100 ft)	<input type="checkbox"/> Flat to Moderate	<input type="checkbox"/> Moderate (0.5 m/100 ft)	<input checked="" type="checkbox"/> Moderate to Severe	<input type="checkbox"/> Severe (1 m/100 ft)
--	---	--	--	--

HYATT STREAM 1

11-10-17/9/2012-1

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Sunbury OH NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____
 County: Delaware Township / City: Sunbury

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: Unknown Quantity: Unknown
 Photograph Information: 2
 Elevated Turbidity? (Y/N): N Canopy (% open): 90
 Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____
 Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____
 Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

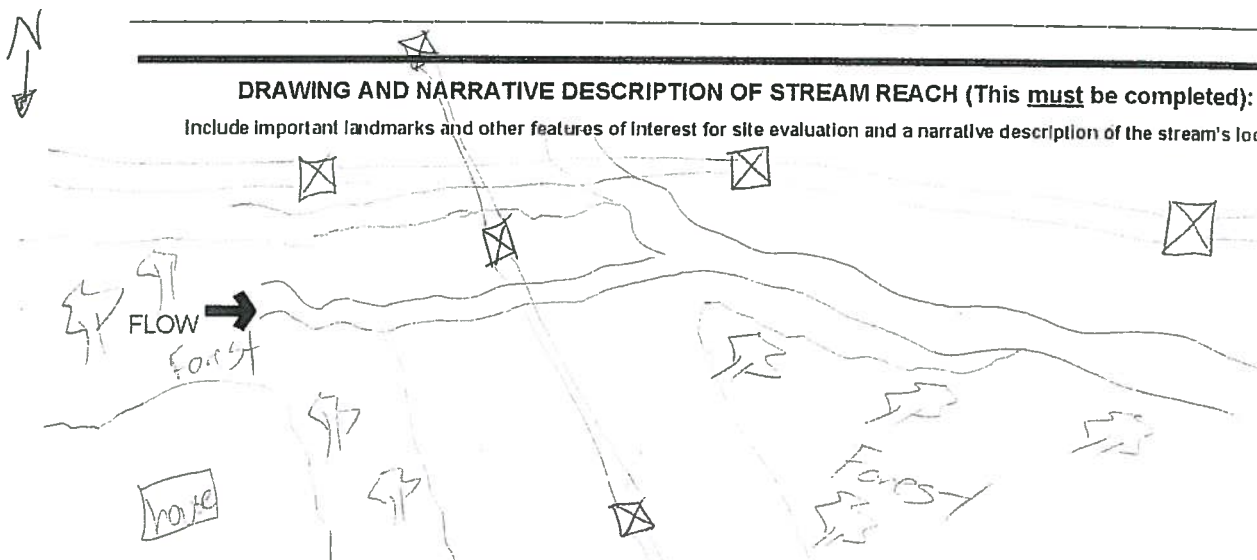
Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
 Fish Observed? (Y/N) N Voucher? (Y/N) _____ Salamanders Observed? (Y/N) N Voucher? (Y/N) _____
 Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) _____
 Comments Regarding Biology: _____

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

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



MODIFIED CLASS 2

HYATT STREAM 2



Primary Headwater Habitat Evaluation Form

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

46

SITE NAME/LOCATION HEP HYATT CORRIDOR AND 345 RDVASSIL SUB STREAM 1A SITE NUMBER Stream 1A RIVER BASIN _____ DRAINAGE AREA (mi²) 2.1 mi²LENGTH OF STREAM REACH (ft) 150' LAT. 40.2252 LONG. 82.8571 RIVER CODE _____ RIVER MILE _____DATE 07/09/12 SCORER PHO, MPT COMMENTS INTERMITTENT

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

STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERYMODIFICATIONS: STREAM IS LOCATED W/IN EXISTING TRANSMISSION ROW & RIPARIAN CORRIDOR IS PERIODICALLY MAINTAINED

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

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	_____	<input type="checkbox"/> SILT [3 pt]	<u>15</u>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	_____	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	_____
<input type="checkbox"/> BEDROCK [16 pt]	_____	<input type="checkbox"/> FINE DETRITUS [3 pts]	_____
<input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<u>40</u>	<input type="checkbox"/> CLAY or HARDPAN [0 pt]	<u>15</u>
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<u>20</u>	<input type="checkbox"/> MUCK [0 pts]	_____
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<u>10</u>	<input type="checkbox"/> ARTIFICIAL [3 pts]	_____

Total of Percentages of
Blr Slabs, Boulder, Cobble, Bedrock 40(A) 21(B) 5

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI
Metric
PointsSubstrate
Max = 4026

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters):

Pool Depth
Max = 300

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input checked="" type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input type="checkbox"/> < 1.0 m (< 3' 3") [5 pts]
<input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters):

Bankfull
Width
Max=3020

This information must also be completed

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

RIPARIAN WIDTH

FLOODPLAIN QUALITY

L	R	(Per Bank)	L	R	(Most Predominant per Bank)	L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Wide >10m	<input type="checkbox"/>	<input type="checkbox"/>	Mature Forest, Wetland	<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m	<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field	<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Narrow <5m	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Residential, Park, New Field	<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	None	<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture	<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

COMMENTS

EXISTING TRANS ROW

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

<input type="checkbox"/> Stream Flowing	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

INTERMITTENT STREAM

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

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input checked="" type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 m/m) ☐ Flat to Moderate ☒ Moderate (2 m/m) ☐ Moderate to Severe ☐ Severe (3 m/m)

ADDITIONAL STREAM INFORMATION (This information must also be completed):

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: SUNBURY, OH NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____
 County: DELAWARE Township / City: TRENTON, SUNBURY

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: UNK Quantity: UNK
 Photograph Information: 2 pics
 Elevated Turbidity? (Y/N): N Canopy (% open): 100
 Were samples collected for water chemistry? (Y/N): _____ (Note lab sample no. or id. and attach results) Lab Number: _____
 Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____
 Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

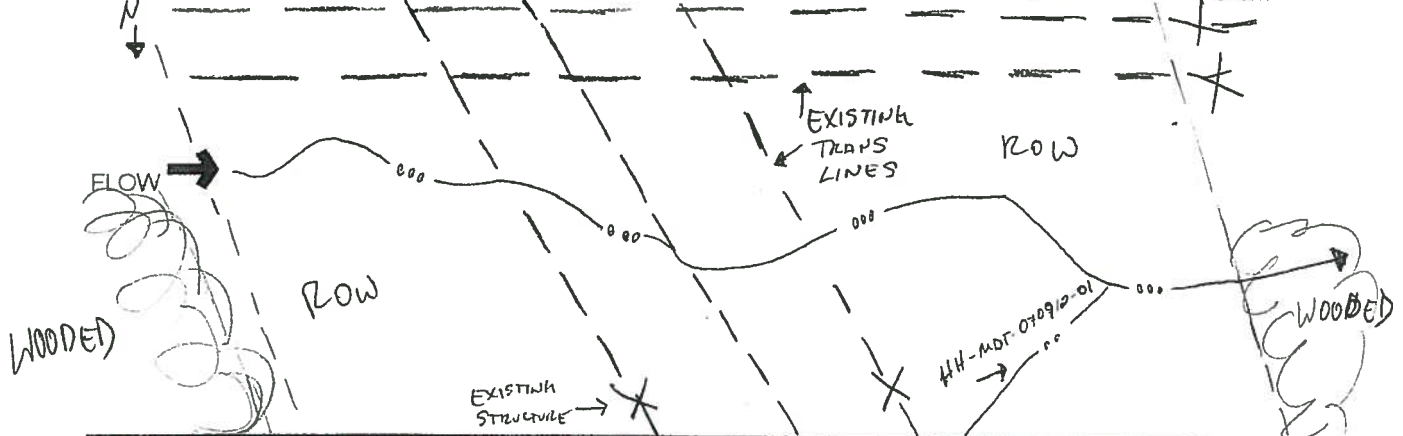
Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): P (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
 Fish Observed? (Y/N) N Voucher? (Y/N) _____ Salamanders Observed? (Y/N) N Voucher? (Y/N) _____
 Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) _____
 Comments Regarding Biology: _____

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

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



MODIFIED CLASS 2

HYATT STREAM 3



Primary Headwater Habitat Evaluation Form

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

41

SITE NAME/LOCATION ATP-HYATT-CORRIDOR AND 345KV
 SITE NUMBER _____ RIVER BASIN _____ DRAINAGE AREA (mi²) _____
 LENGTH OF STREAM REACH (ft) _____ LAT. 40.2335 LONG. 82.8560 RIVER CODE _____ RIVER MILE _____
 DATE 07-09-12 SCORER BAC, MDT COMMENTS INTERMITTENT

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

STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERYMODIFICATIONS: Stream Riparian Area is Intermittently Cleared Due to ROW Maintenance

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

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDR SLABS [16 pts]	_____	<input type="checkbox"/> SILT [3 pts]	<u>10</u>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	_____	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	_____
<input type="checkbox"/> BEDROCK [16 pts]	_____	<input type="checkbox"/> FINE DETRITUS [3 pts]	_____
<input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<u>40</u>	<input type="checkbox"/> CLAY or HARDPAN [0 pts]	<u>30</u>
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<u>20</u>	<input type="checkbox"/> MUCK [0 pts]	_____
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<u>5</u>	<input type="checkbox"/> ARTIFICIAL [3 pts]	_____

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 40(A) 21(B) 5

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40

21

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input checked="" type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

Pool Depth Max = 30

0COMMENTS Dry Time of Year

MAXIMUM POOL DEPTH (centimeters):

0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):
- | | |
|--|---|
| <input type="checkbox"/> > 4.0 meters (> 13') [30 pts] | <input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts] |
| <input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] | <input type="checkbox"/> ≤ 1.0 m (≤ 3' 3") [5 pts] |
| <input checked="" type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts] | |

Bankfull Width Max=30

20

COMMENTS

AVERAGE BANKFULL WIDTH (meters)

6'

This information must also be completed

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

RIPARIAN WIDTH		FLOODPLAIN QUALITY			
L	R	L	R	L	R
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Wide >10m		Mature Forest, Wetland		Conservation Tillage	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Moderate 5-10m		Immature Forest, Shrub or Old Field		Urban or Industrial	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Narrow <5m		Residential, Park, New Field		Open Pasture, Row Crop	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
None		Fenced Pasture		Mining or Construction	

COMMENTS WETLAND AROUND STREAM

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

<input type="checkbox"/> Stream Flowing	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Interstitial)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS

INTERMITTENT

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

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input checked="" type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input type="checkbox"/> 2.5	<input type="checkbox"/> >3

STREAM GRADIENT ESTIMATE

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

ADDITIONAL STREAM INFORMATION (This information must also be completed):

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

DOWNSTEAM DESIGNATED USE(S)

☒ WWH Name: BIG WALNUT CREEK Distance from Evaluated Stream APPROX. 2700'
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: SUNBURY, OH NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____
County: DELAWARE Township / City: BERKSHIRE / SUNBURY

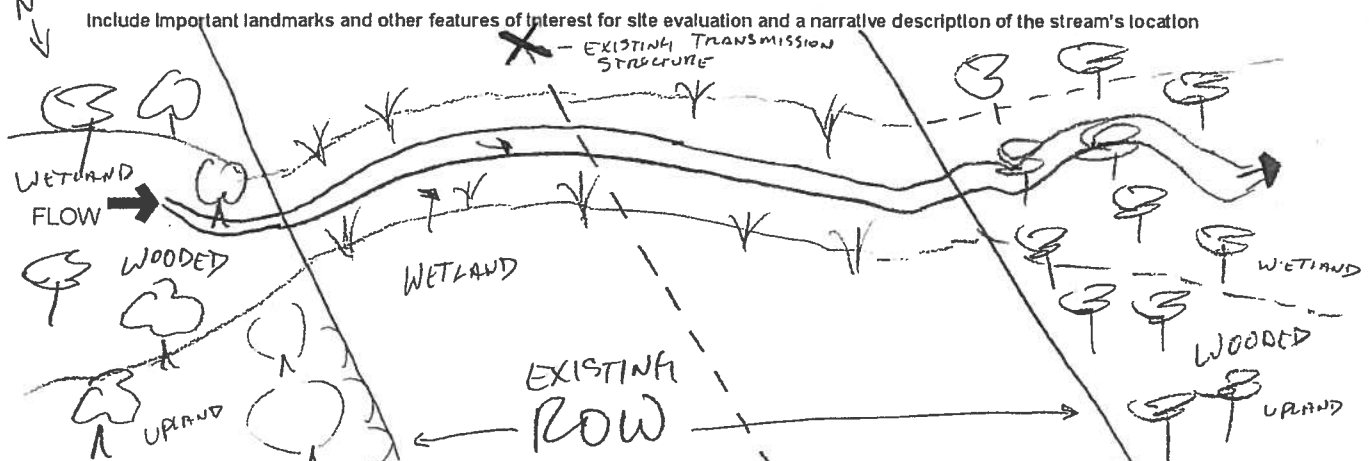
MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: UNKNOWN Quantity: UNKNOWN
Photograph Information: 2 PHOTOS
Elevated Turbidity? (Y/N): N Canopy (% open): 100
Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____
Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____
Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____
Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
Fish Observed? (Y/N) N Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) _____
Comments Regarding Biology: _____

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



Stream & Location: AEP HYATT-CORRIDOR 2nd 345 KV

RM: Date: 07/09/12

River Code: STORET #:

Scorers Full Name & Affiliation: B. OTTO, M. J. HOMER, URS Corp

Lat./Long.: 40.2141 182.8484

Office verified location ☐

1] SUBSTRATE Check ONLY Two substrate TYPE BOXES; estimate % or note every type present

Check ONE (Or 2 & average)

BEST TYPES		OTHER TYPES	
<input type="checkbox"/> BUDY SLABS [10]	<input type="checkbox"/> POOL RIFFLE	<input type="checkbox"/> HARD PAN [4]	<input type="checkbox"/> POOL RIFFLE
<input type="checkbox"/> BOULDER [10]		<input type="checkbox"/> DETRITUS [3]	
<input checked="" type="checkbox"/> COBBLE [8]	30 55	<input type="checkbox"/> MUCK [2]	10
<input type="checkbox"/> GRAVEL [7]	10 10	<input checked="" type="checkbox"/> SILT [2]	50 80
<input type="checkbox"/> SAND [6]		<input type="checkbox"/> ARTIFICIAL [0]	
<input type="checkbox"/> BEDROCK [5]			

(Score natural substrates; ignore sludge from point-sources)

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☒ 3 or less [0]

Comments

10

ORIGIN		QUALITY	
<input checked="" type="checkbox"/> LIMESTONE [1]	<input type="checkbox"/> HEAVY [2]	<input type="checkbox"/> MODERATE [1-1]	Substrate Maximum 20
<input type="checkbox"/> TILLS [1]	<input type="checkbox"/> FREE [1]	<input checked="" type="checkbox"/> EXTENSIVE [1-2]	
<input type="checkbox"/> WETLANDS [0]	<input type="checkbox"/> MODERATE [1-1]	<input type="checkbox"/> NORMAL [0]	
<input type="checkbox"/> HARD PAN [0]	<input type="checkbox"/> NONE [1]		
<input type="checkbox"/> SANDSTONE [0]			
<input type="checkbox"/> RIP/RAP [0]			
<input type="checkbox"/> LACUSTURINE [0]			
<input type="checkbox"/> SHALE [1]			
<input type="checkbox"/> COAL FINES [2]			

SILT
EMBEDDEDNESS

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very small amounts or if more common of marginal quality; 2-Moderate amounts, but not of highest quality or in small amounts of highest quality; 3-Highest quality in moderate or greater amounts (e.g., very large boulders in deep or fast water, large diameter log that is stable, well developed rootwad in deep / fast water, or deep, well-defined, functional pools.

AMOUNT

Check ONE (Or 2 & average)

<input type="checkbox"/> UNDERCUT BANKS [1]	<input type="checkbox"/> POOLS > 70cm [2]	<input type="checkbox"/> OXBOWS, BACKWATERS [1]
<input type="checkbox"/> OVERHANGING VEGETATION [1]	<input type="checkbox"/> ROOTWADS [1]	<input type="checkbox"/> AQUATIC MACROPHYTES [1]
<input type="checkbox"/> SHALLOWS (IN SLOW WATER) [1]	<input type="checkbox"/> BOULDERS [1]	<input type="checkbox"/> LOGS OR WOODY DEBRIS [1]
<input type="checkbox"/> ROOTMATS [1]		

<input type="checkbox"/> EXTENSIVE > 75% [1]
<input type="checkbox"/> MODERATE 25-75% [1]
<input checked="" type="checkbox"/> SPARSE 5-25% [3]
<input type="checkbox"/> NEARLY ABSENT < 5% [1]

Comments

NO FLOW AT TIME OF EVALUATION & w/in row

Cover
Maximum 20

3] CHANNEL MORPHOLOGY Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
<input checked="" type="checkbox"/> HIGH [4]	<input type="checkbox"/> EXCELLENT [7]	<input type="checkbox"/> NONE [6]	<input type="checkbox"/> HIGH [3]
<input type="checkbox"/> MODERATE [3]	<input type="checkbox"/> GOOD [5]	<input checked="" type="checkbox"/> RECOVERED [4]	<input checked="" type="checkbox"/> MODERATE [2]
<input type="checkbox"/> LOW [2]	<input checked="" type="checkbox"/> FAIR [3]	<input type="checkbox"/> RECOVERING [3]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> NONE [1]	<input type="checkbox"/> POOR [1]	<input type="checkbox"/> RECENT OR NO RECOVERY [1]	

Comments

Channel
Maximum 20

4] BANK EROSION AND RIPARIAN ZONE Check ONE in each category for EACH BANK (Or 2 per bank & average)

EROSION	RIPARIAN WIDTH	FLOOD PLAIN QUALITY	CONSERVATION TILLAGE
<input type="checkbox"/> NONE / LITTLE [3]	<input type="checkbox"/> WIDE > 50m [4]	<input type="checkbox"/> FOREST, SWAMP [3]	<input type="checkbox"/> URBAN OR INDUSTRIAL [0]
<input checked="" type="checkbox"/> MODERATE [2]	<input type="checkbox"/> MODERATE 10-50m [3]	<input type="checkbox"/> SHRUB OR OLD FIELD [2]	<input type="checkbox"/> MINING / CONSTRUCTION [0]
<input type="checkbox"/> HEAVY / SEVERE [1]	<input type="checkbox"/> NARROW 5-10m [2]	<input checked="" type="checkbox"/> RESIDENTIAL, PARK, NEW FIELD [1]	
	<input checked="" type="checkbox"/> VERY NARROW < 5m [1]	<input type="checkbox"/> FENCED PASTURE [1]	
	<input type="checkbox"/> NONE [0]	<input type="checkbox"/> OPEN PASTURE, ROWCROP [0]	

Comments

Indicate predominant land use(s) past 100m riparian.

Riparian
Maximum 10

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH

CHANNEL WIDTH

CURRENT VELOCITY

Check ONE (ONLY!)

Check ONE (Or 2 & average)

Check ALL that apply

<input type="checkbox"/> > 1m [6]
<input type="checkbox"/> 0.7-1m [4]
<input type="checkbox"/> 0.4-0.7m [2]
<input checked="" type="checkbox"/> 0.2-0.4m [1]
<input type="checkbox"/> < 0.2m [0]

<input type="checkbox"/> POOL WIDTH > RIFFLE WIDTH [2]
<input checked="" type="checkbox"/> POOL WIDTH = RIFFLE WIDTH [1]
<input type="checkbox"/> POOL WIDTH < RIFFLE WIDTH [0]

<input type="checkbox"/> TORRENTIAL [1]	<input type="checkbox"/> SLOW [1]
<input type="checkbox"/> VERY FAST [1]	<input type="checkbox"/> INTERSTITIAL [1]
<input type="checkbox"/> FAST [1]	<input type="checkbox"/> INTERMITTENT [2]
<input type="checkbox"/> MODERATE [1]	<input type="checkbox"/> EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)Pool /
Current
Maximum 12

Comments

EVALUATED IN DRY SEASON - NO FLOW

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species:

Check ONE (Or 2 & average).

☒ NO RIFFLE [metric=0]

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE	RIFFLE / RUN EMBEDDEDNESS
<input type="checkbox"/> BEST AREAS > 10cm [2]	<input type="checkbox"/> MAXIMUM > 50cm [2]	<input type="checkbox"/> STABLE (e.g., Cobble, Boulder) [2]	<input type="checkbox"/> NONE [2]
<input type="checkbox"/> BEST AREAS 5-10cm [1]	<input type="checkbox"/> MAXIMUM < 50cm [1]	<input type="checkbox"/> MOD. STABLE (e.g., Large Gravel) [1]	<input type="checkbox"/> LOW [1]
<input type="checkbox"/> BEST AREAS < 5cm [0]		<input type="checkbox"/> UNSTABLE (e.g., Fine Gravel, Sand) [0]	<input type="checkbox"/> MODERATE [0]
			<input type="checkbox"/> EXTENSIVE [1]

Comments

NO FLOW AT TIME OF EVALUATION

Riffle /
Run
Maximum 8

6] GRADIENT (25 ft/mi) ⁿ	<input type="checkbox"/> VERY LOW - LOW [2-1]
DRAINAGE AREA	<input type="checkbox"/> MODERATE [6-10]
(1.4 mi ²)	<input checked="" type="checkbox"/> HIGH - VERY HIGH [10-5]

%POOL: 20

%GLIDE:

%RUN: 40

%RIFFLE: 40

Gradient
Maximum 10

Check ALL that apply

METHOD

- STAGE
- 1st-sample pass- 2nd
- BOAT ☐ HIGH ☐
- WADE ☐ UP ☐
- L. LINE ☐ NORMAL ☐
- OTHER ☐ LOW ☐
- DISTANCE
- 0.5 Km ☐
- 0.2 Km ☐
- 0.15 Km ☐
- 0.12 Km ☐
- OTHER ☐

CLARITY

- 1st -sample pass-- 2nd
- < 20 cm ☐
- 20-40 cm ☐
- 40-70 cm ☐
- > 70 cm/CTB ☐
- SECCHI DEPTH ☐

meters

CANOPY

- > 85%- OPEN ☒
- 55%-<85% ☐
- 30%-<55% ☐
- 10%-<30% ☐
- <10%- CLOSED ☐

CJ RECREATION

AREA DEPTH

POOL: ☐ >100ft² ☐ >3ft

BJ AESTHETICS

- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ OIL SHEEN
- ☐ TRASH / LITTER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/OUTFALLS

DJ MAINTENANCE

- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMORED / SLUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

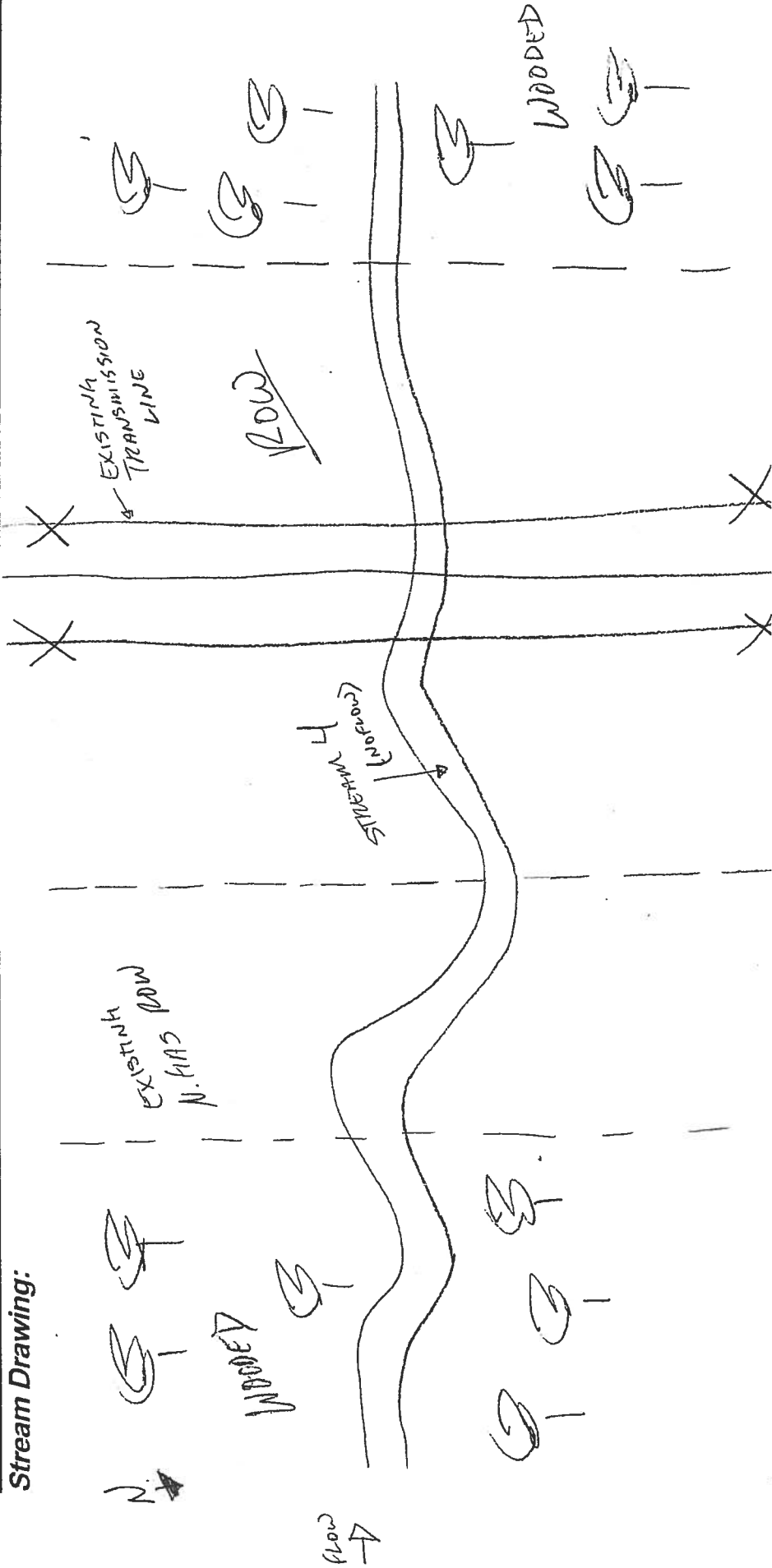
EJ ISSUES

- WWTP / CSO / NPDES / INDUSTRY
- HARDENED / URBAN / DIRT&GRIME
- CONTAMINATED / LANDFILL
- BMPs-CONSTRUCTION-SEDIMENT
- LOGGING / IRRIGATION / COOLING
- BANK / EROSION / SURFACE
- FALSE BANK / MANURE / LAGOON
- WASH H₂O / TILE / H₂O TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

FJ MEASUREMENT:

- \bar{x} width
- \bar{x} depth
- max. depth
- \bar{x} bankfull width
- bankfull \bar{x} depth
- W/D ratio
- bankfull max. depth
- floodprone \bar{x}^2 width
- entrench. ratio
- Legacy Tree:

Stream Drawing:



MODIFIED CLASS 2

HYATT STREAM 5



Primary Headwater Habitat Evaluation Form

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

39

SITE NAME/LOCATION AEP Hyatt Corridor 2nd 345 KV
11-MDT-070912-03 SITE NUMBER RIVER BASIN DRAINAGE AREA (mi²) < 1 mi²
 LENGTH OF STREAM REACH (ft) LAT. 40.2125 LONG. -82.8409 RIVER CODE RIVER MILE
 DATE 070912 SCORER BAD COMMENTS INTERMITTENT

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

STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERYMODIFICATIONS: Stream w/ existing flow & riparian area regularly maintained

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

TYPE	PERCENT	TYPE	PERCENT
<input type="checkbox"/> BLDG SLABS [16 pts]	<u> </u>	<input type="checkbox"/> SILT [3 pts]	<u>20</u>
<input type="checkbox"/> BOULDER (>256 mm) [16 pts]	<u> </u>	<input type="checkbox"/> LEAF PACK/WOODY DEBRIS [3 pts]	<u> </u>
<input type="checkbox"/> BEDROCK [16 pts]	<u> </u>	<input type="checkbox"/> FINE DETRITUS [3 pts]	<u> </u>
<input checked="" type="checkbox"/> COBBLE (65-256 mm) [12 pts]	<u>40</u>	<input type="checkbox"/> CLAY or HARDPAN [0 pts]	<u>20</u>
<input checked="" type="checkbox"/> GRAVEL (2-64 mm) [9 pts]	<u>10</u>	<input type="checkbox"/> MUCK [0 pts]	<u> </u>
<input type="checkbox"/> SAND (<2 mm) [6 pts]	<u> </u>	<input type="checkbox"/> ARTIFICIAL [3 pts]	<u> </u>

Total of Percentages of Bldg Slabs, Boulder, Cobble, Bedrock 40(A) 15(B) 4

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES:

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

<input type="checkbox"/> > 30 centimeters [20 pts]	<input checked="" type="checkbox"/> > 5 cm - 10 cm [15 pts]
<input type="checkbox"/> > 22.5 - 30 cm [30 pts]	<input type="checkbox"/> < 5 cm [5 pts]
<input type="checkbox"/> > 10 - 22.5 cm [25 pts]	<input type="checkbox"/> NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS mostly dry w/ some pools MAXIMUM POOL DEPTH (centimeters):

3"

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

<input type="checkbox"/> > 4.0 meters (> 13') [30 pts]	<input type="checkbox"/> > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
<input type="checkbox"/> > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]	<input checked="" type="checkbox"/> 1.0 m (< 3' 3") [5 pts]
<input type="checkbox"/> > 1.5 m - 3.0 m (> 4' 8" - 9' 7") [20 pts]	

COMMENTS AVERAGE BANKFULL WIDTH (meters)

2'

This information must also be completed

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

RIPARIAN WIDTH

L	R	(Per Bank)
<input type="checkbox"/>	<input type="checkbox"/>	Wide > 10m
<input type="checkbox"/>	<input type="checkbox"/>	Moderate 5-10m
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Narrow < 5m
<input type="checkbox"/>	<input type="checkbox"/>	None

COMMENTS

FLOODPLAIN QUALITY

L	R	(Most Predominant per Bank)
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Mature Forest, Wetland
<input type="checkbox"/>	<input type="checkbox"/>	Immature Forest, Shrub or Old Field
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Residential, Park, New Field
<input type="checkbox"/>	<input type="checkbox"/>	Fenced Pasture

L	R	
<input type="checkbox"/>	<input type="checkbox"/>	Conservation Tillage
<input type="checkbox"/>	<input type="checkbox"/>	Urban or Industrial
<input type="checkbox"/>	<input type="checkbox"/>	Open Pasture, Row Crop
<input type="checkbox"/>	<input type="checkbox"/>	Mining or Construction

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

<input type="checkbox"/> Stream Flowing	<input checked="" type="checkbox"/> Moist Channel, isolated pools, no flow (Intermittent)
<input type="checkbox"/> Subsurface flow with isolated pools (Intermittent)	<input type="checkbox"/> Dry channel, no water (Ephemeral)

COMMENTS INT.

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

<input type="checkbox"/> None	<input type="checkbox"/> 1.0	<input type="checkbox"/> 2.0	<input type="checkbox"/> 3.0
<input type="checkbox"/> 0.5	<input type="checkbox"/> 1.5	<input checked="" type="checkbox"/> 2.5	<input type="checkbox"/> > 3

STREAM GRADIENT ESTIMATE

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

HYATT Stream 5

HH - MDT - 070912-03

ADDITIONAL STREAM INFORMATION (This information must also be completed):

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____
☐ CWH Name: _____ Distance from Evaluated Stream _____
☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: SUNBURY, OH NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____
 County: DELAWARE Township / City: SUNBURY

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: UNKNOWN Quantity: _____
 Photograph Information: 2 photos
 Elevated Turbidity? (Y/N): N Canopy (% open): 100
 Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____
 Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____
 Is the sampling reach representative of the stream (Y/N) Y If not, please explain: _____

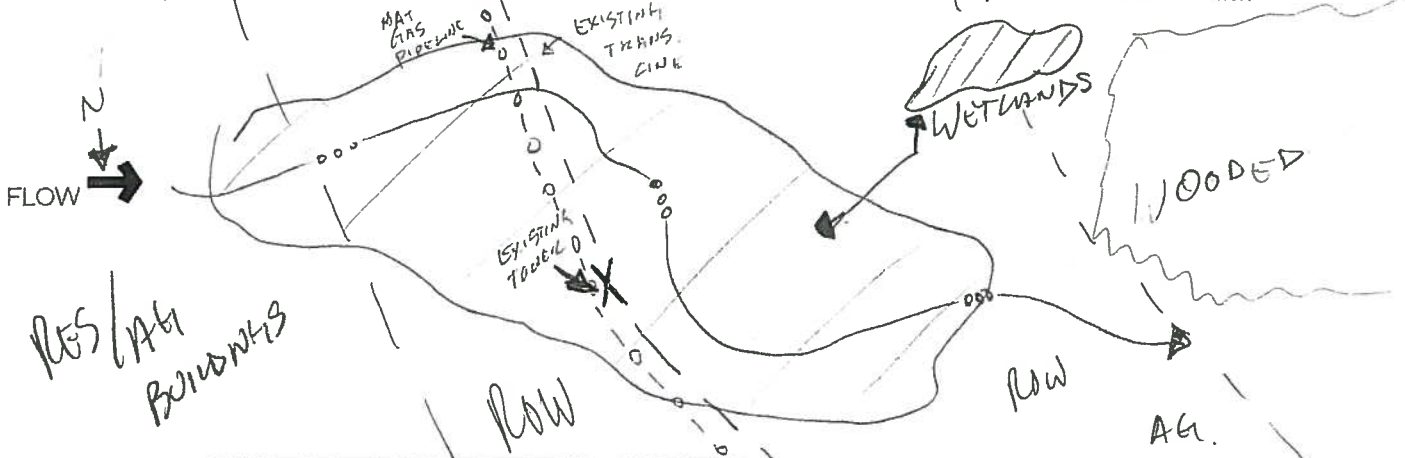
Additional comments/description of pollution impacts: AG. RUNOFF

BIOTIC EVALUATION

Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)
 Fish Observed? (Y/N) N Voucher? (Y/N) _____ Salamanders Observed? (Y/N) N Voucher? (Y/N) _____
 Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____
 Comments Regarding Biology: _____

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

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



APPENDIX C

PHOTOGRAPHS



PHOTOGRAPHIC RECORD
Representative Stream and Wetland
Photographs

Client Name: AEP	Site Location: Hyatt-Corridor 2 nd 345 kV Circuit	Project No. 14950755
----------------------------	--	--------------------------------

Photo No. 1	
Date/Location: July 9, 2012	
Description: Evaluated Stream Stream 1 Facing upstream	

Photo No. 2	
Date/Location: July 9, 2012	
Description: Evaluated Stream Stream 2 Facing upstream	



PHOTOGRAPHIC RECORD

Representative Stream and Wetland Photographs

Client Name: AEP	Site Location: Hyatt-Corridor 2 nd 345 kV Circuit	Project No. 14950755
----------------------------	--	--------------------------------

Photo No. 3	
Date/Location: July 9, 2012	
Description: Delineated Wetland Wetland 1 Facing Southwest across existing ROW	


Photo No. 4	
Date/Location: July 9, 2012	
Description: Evaluated Stream Stream 3 Facing upstream	



PHOTOGRAPHIC RECORD
Representative Stream and Wetland
Photographs

Client Name: AEP	Site Location: Hyatt-Corridor 2 nd 345 kV Circuit	Project No. 14950755
----------------------------	--	--------------------------------

Photo No. 5	
Date/Location: July 9, 2012	
Description: Evaluated Stream Stream 4 Facing upstream	

Photo No. 6	
Date/Location: July 9, 2012	
Description: Delineated Wetland Wetland 2 Facing North across existing ROW	



PHOTOGRAPHIC RECORD
Representative Stream and Wetland
Photographs

Client Name: AEP	Site Location: Hyatt-Corridor 2 nd 345 kV Circuit	Project No. 14950755
----------------------------	--	--------------------------------

Photo No. 7	
Date/Location: July 9, 2012	
Description: Delineated Wetland Wetland 3 Facing Northwest across existing ROW	

Photo No. 8	
Date/Location: July 9, 2012	
Description: Delineated Wetland Wetland 4 Facing West across existing ROW	



PHOTOGRAPHIC RECORD

Representative Stream and Wetland Photographs

Client Name:

AEP

Site Location:

Hyatt-Corridor 2nd 345 kV Circuit

Project No.

14950755

Photo No. 9

Date/Location:

July 9, 2012

Description:

Evaluated Stream
Stream 5

Facing downstream



Photo No. 10

Date/Location:

July 9, 2012

Description:

Evaluated Stream
Wetland 5

Facing Northwest
across existing ROW



This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

8/7/2012 2:11:06 PM

in

Case No(s). 12-2222-EL-BLN

Summary: Letter of Notification of Hyatt Corridor 345kV Structure Replacement Project (Part 2) electronically filed by Erin C Miller on behalf of AEP Ohio Transmission Company, Inc.