SURFACE WATERS, ECOLOGICAL COMMUNITIES, AND THREATENED & ENDANGERED SPECIES

CHAMPAIGN WIND LLC

FOR THE:
BUCKEYE II WIND FARM
CHAMPAIGN COUNTY, OHIO

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1.0 INTRODUCTION AND PURPOSE

Champaign Wind LLC, a wholly owned subsidy of EverPower Wind Holdings, Inc., is planning development of the Buckeye II Wind Farm, a wind-powered electric generation facility in west central Ohio. The Buckeye II Wind Farm will be located in Champaign County within the townships of Salem, Wayne, Rush, Urbana, Union, and Goshen. This area of Ohio has been demonstrated to have among the highest potentials in the state for wind power development because of its elevation, orientation, and other factors.

The Buckeye II Wind Farm will consist of approximately 57 wind turbine generators, each with a nameplate capacity of 1.6 to 2.5 megawatts (MW), access roads collection lines, associated substations and all other associated equipment. For the purpose of this report, the following definitions have been used when describing the project: [Please note, for consistency purposes the Ohio Power Siting Board's OAC rules (Chapter 4906-17) have been used to define the Project Area and Facility.]

- **Project Area** (pursuant to Ohio Administrative Code (OAC) rule 4906-17-01(B)(1)) is all components of the wind-powered electric generation facility, plus associated setbacks. Based on OAC rule 4906-17-08(C)(1)(c), each of the turbine Sites will have an established setback to the nearest habitable residential structure located on adjacent properties at the time of the certification application.

- **Facility** (pursuant to rule 4906-17-01(B)(2)) includes the turbines, collection lines, access roads, any associated substations, and all other associated equipment.

- The **Study Area** is defined by the applicant as the region outside of the Project Area that was included during database searches of available public information.

The purpose of this document is to provide a surface water delineation of Facility locations including turbines, access roads, and electrical interconnect lines, to describe the plant and animal communities adjacent to the Facility, to assess the ecological impacts associated with construction of the wind turbine Facility, and to describe the approach that will be used by Champaign Wind LLC to comply with applicable environmental rules and regulations. Note that this document assesses potential impacts to endangered and threatened species that may occur as a result of construction of the Facility, while potential impacts associated with operation of the Facility (e.g., potential avian and bat impacts due to turbine strikes) are addressed in a separate document.

1.1 Project Area

The proposed Project Area occupies a ridge running roughly northwest to southeast at an elevation of approximately 1,300 feet (ft) above sea level, which rises about 300 to 500 feet above the surrounding agricultural landscape. Land cover in the vicinity of the Project Area is dominated by active agricultural lands with low density residential developments, and a minimal extent of fragmented upland and riparian forest stands are also present.

The Project Area lies within the drainage of two major river systems: the Great Miami River, United States Geological Survey Hydrologic Unit Code (USGS HUC) 0508, and the Scioto River (0506). Named perennial streams in the Project Area include Buck Creek, King's Creek, Dugan Run (Mad River tributary), Dugan Ditch (Buck Creek tributary), East Fork Buck Creek, Treacle Creek, Jumping Run, and Little Darby Creek.

Within the Great Miami River's Mad River 8-digit subbasin (05080001), the Project Area lies within portions of three 11-digit watersheds: 05080001-150 (Mad River, headwaters to downstream of King's Creek), 05080001-160 (Mad River, downstream of King's Creek to downstream of Chapman Creek), and 05080001-170 (Buck Creek, headwaters to Mad River).

Within the Scioto River's northern 8-digit subbasin (05060001), a portion of the Project Area lies within the 11-digit Little Darby Creek subbasin (05060001-210; Little Darby Creek, headwaters to Big Darby Creek). According to the Ohio Environmental Protection Agency's 2004 biological assessment of the Big Darby Creek watershed (Ohio EPA, 2004), the Little Darby Creek watershed is considered part of the Big Darby Creek watershed and these watersheds are considered together for purposes of reporting Aquatic Life Use attainment status. The assessment units in the Big Darby watershed consist of four 11-digit subbasins: 05060001-190 (headwaters of Big Darby Creek to below Sugar Run), 05060001-200 (Big Darby Creek below Sugar Run to above Little Darby Creek), 05060001-210 (Little Darby Creek), and 05060001-220 (Big Darby Creek below Little Darby Creek to Scioto River).

The Ohio EPA report entitled *Integrated Water Quality Monitoring and Assessment Report* (2006), compiled under Clean Water Act Sections 303(d) and 305(b), lists stream segments with impaired ambient water quality in the State of Ohio. All four 11-digit HUC watersheds partially occurring within the Project Area are listed as impaired for both Aquatic Life Use and Recreation. The major causes of impairment in the Mad River above King's Creek are direct

habitat alteration and agriculture, while the major causes of impairment below King's Creek are organic enrichment, metals, nutrients, priority organics, siltation, and direct habitat alteration. In Buck Creek, the major causes of impairment include habitat and flow alteration and upstream impoundment. In the Little Darby Creek, the major causes of impairment are unknown toxicity sources, siltation, nutrient and organic enrichment, and low dissolved oxygen.

In the context of Water Quality Certification Review (Clean Water Act, Section 401), all development projects planned within these watersheds are reviewed for potential adverse water quality effects on these waterways under Ohio's Antidegradation Policy. The assessment of impaired ambient water quality is also used to prioritize these watersheds for studies of Total Maximum Daily Load (TMDL).

2.0 SURFACE WATER EVALUATION

2.1 Summary

A surface water evaluation, consisting of delineation and evaluation of wetlands and other surface waters, was completed for the proposed Buckeye II Wind Farm, a wind-powered electric generation Facility in west central Ohio. The Facility will be located in Champaign County within the townships of Salem, Wayne, Rush, Urbana, Union, and Goshen.

The delineation identified a total of 23 wetlands; seventeen Ohio Category 1 wetlands, three Ohio Modified Category 2 wetlands, one Ohio Category 1 or 2 gray zone wetland assumed to be Category 2, and two Ohio Category 2 wetlands (see Table 1 for a summary of delineated wetlands). The wetlands were evaluated and placed in the appropriate Ohio Antidegradation Category using the Ohio Rapid Assessment Method for Wetlands Final Version 5.0 (ORAM).

The delineation identified a total of 30 streams, all or a portion of which were within 100 feet of the Facility; several streams were delineated at more than one Facility location, resulting in a total of 38 stream segments delineated within 100 feet of the Facility. Twelve Modified Class I Primary Headwater Habitat (PHWH) streams, one Class II PHWH stream, ten Modified Class II PHWH streams, five Exceptional Warm Water Habitat (EWH) streams, six Cold Water Habitat (CWH) streams, one Modified Warm Water Habitat (MWH) and three Warmwater habitat (WWH) stream segments were identified within the Facility (see Table 2 for a summary of evaluated streams). The streams were evaluated using Ohio evaluation techniques appropriate to stream type and assigned to an existing use, or assigned an Aquatic Life Use designation based on their listing in Ohio water quality standards (OAC 3745-1).

Based on US Army Corps of Engineers (USACE) guidance in effect at the time of this report, Hull has determined that of the 23 wetlands delineated, fourteen are non-isolated and under the Clean Water Act jurisdiction of federal and state government. Nine wetlands were found to be isolated and under the sole jurisdiction of the Ohio Isolated Wetland Permitting Program. Isolation status was determined based on the December 2008 post-Rapanos guidance issued by the USACE and US Environmental Protection Agency. Hull has determined that all of the streams evaluated within the Facility are under federal jurisdictional and therefore subject to

Clean Water Act regulations through the USACE and the Ohio Environmental Protection Agency (Ohio EPA).

Photographs taken during the delineation are located in Appendix A; wetland delineation data sheets are located in Appendix B; and Appendix C contains the ORAM data sheets. The Headwater Habitat Evaluation Index (HHEI) data sheets and the Ohio Qualitative Habitat Evaluation Index (QHEI) data sheets are located in Appendix D.

Note that this surface water delineation did not cover the entire geographical extent of the Ohio Townships in which it occurs, but instead concentrated on surface waters and ecological features located within 100 feet of the Facility that could potentially be impacted by construction of the Facility.

2.2 Delineation Overview

Hull & Associates, Inc. (Hull) conducted the surface water evaluation in October and December 2011 according to the 1987 US Army Corps of Engineer's wetlands delineation manual (Environmental Laboratory, 1987), the Regional Supplement to the Corps of Engineers Wetland Delineation Manual, Midwest Region Version 2.0, subsequent USACE memoranda and regulatory guidance, and basic principles of plant community ecology. Plant communities were characterized using the three-criterion wetland delineation approach. The wetland indicator status of plant species was determined using Reed (1988). After characterizing the vegetation, hydrology, and soils of a plant stand type and becoming familiar with the soil, vegetation, and/or hydrologic cues that indicate wetland edge, Hull flagged wetland edges with periodic collection of additional soil or hydrologic data to refine the edge. Wetland delineation data sheets appear in Appendix B.

The purpose of the delineation was to determine the extent and quality of wetlands and other surface waters located within or near the Facility that may be subject to regulation under Sections 404 and 401 of the Clean Water Act (1987, as amended) or the Ohio Isolated Wetland Permit Program. This report contains a description of investigations conducted to delineate wetlands and streams, and to assess the value of surface waters found within the Facility. The report includes: a summary of findings; a description of wetland and stream delineation criteria; a summary of resource materials used to plan and conduct field activities; and descriptions of the wetlands and streams delineated within the Facility.

A surface water delineation report is a necessary component of determining whether an entity must submit permit applications to the USACE and/or the Ohio EPA for planned project activities. The USACE issues Clean Water Act (CWA) Section 404 permits, which are required for anyone who plans to discharge dredged or fill material into waters of the U.S., including non-isolated wetlands. The Ohio EPA issues CWA Section 401 water quality certifications, which must be obtained before a Section 404 permit can be granted. In the case of isolated wetlands, Ohio EPA has sole jurisdiction under its Isolated Wetland Permit Program. In addition, Ohio EPA must verify all wetland and stream evaluations.

2.3 Delineation Criteria

Federal regulations define a jurisdictional wetland as an area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. According to current wetland criteria, a wetland has: (1) hydric (i.e., wetland) soils, (2) evidence of inundated or saturated conditions (wetland hydrology), and (3) a predominance of wetland vegetation. When all three of these criteria are met, a wetland is present and is subject to Federal and/or State regulations and permitting.

In wetland delineation, data are collected concerning the vegetation, soils, and hydrology present in various plant communities to determine if the criteria for a jurisdictional wetland are met and the wetland/non-wetland boundaries are flagged. The wetland/non-wetland boundaries and the sample locations are then surveyed and placed on a map. From the wetland map, the acreage of each wetland can be calculated. A preliminary determination is also made as to whether each wetland is isolated and thus under the jurisdiction of the State of Ohio Isolated Wetland Permit Program, or non-isolated, and thus under federal Clean Water Act jurisdiction.

In stream delineation, the location and length of streams is determined from existing mapping information and/or via surveying streams in the field. Note that some streams too small to be included on U.S. Geological Survey (USGS) topographic maps may nevertheless be under CWA jurisdiction. Jurisdictional streams generally have a defined channel, an Ordinary High Water Mark (OHWM) and discernible bed and bank features, and may have other morphological features typical of streams including riffles and pools, meanders, and a floodplain.

Currently, the USACE has sole authority to verify delineations of surface waters and to determine whether wetlands or other water bodies are isolated or non-isolated. Verification occurs after review of a delineation report which typically includes a field visit by USACE staff. Delineations are typically valid for a period of five years from the date of the USACE delineation verification letter.

2.4 Investigation Methods

2.4.1 General

Prior to visiting the Facility, Hull compiled the following existing information about the Facility. This information was compiled on a series of 19 Figures (see Figures 1 through 19 and Figures 1S-19S).

- **Natural Resources Conservation Service (NRCS) Soil Survey of Champaign County, Ohio** – The soil survey identifies soil mapping units within the Facility, including hydric soil mapping units, non-hydric soil mapping units that may contain inclusions of hydric soil units, and non-hydric soil mapping units (see Soils Figures 1S-19S). Descriptions for each unit are available from the above mentioned reference.

- **County Listings of Hydric Soils and Non-hydric Soils with Hydric Inclusions** – Hydric or non-hydric status for each soil unit was determined using the Natural Resources Conservation Service Web Soil Survey 2.0.

- **United States Department of Interior National Wetlands Inventory (NWI) Maps** – These data provide an indication of the presence of wetland and open-water areas across the Facility, as defined by the U.S. Fish and Wildlife Service (USFWS) classification system (Cowardin et al., 1979). The notation of a wetland on a NWI Map indicates that wetlands may occur or have occurred in the area. Often, those wetlands depicted on NWI maps are the wettest spots in a given area. NWI map information is used to supplement knowledge about a site and cannot take the place of field observations due to minimal ground truthing, map age, map scale, and wetland criteria that differ from USACE wetlands criteria. See Figures 2 through 18 for NWI mapped areas within the Facility.

Hull used this preliminary information to perform screening of the Facility to plan and focus on-site investigations. All areas of the Facility were examined using confirmatory soil sampling and wetland and stream data collection.

2.4.2 Wetland Delineation Methods

Field delineation activities performed during October and December 2011 were conducted according to methods outlined in the 1987 US Army Corps of Engineer's wetlands delineation

manual (Manual; Environmental Laboratory, 1987) supplemented by the methods outlined in the 2009 Midwest Regional Supplement to the 1987 Manual. Hull located the wetland edges in the field using these procedures, subsequent USACE memoranda and regulatory guidance, and basic principles of plant community ecology. Plant communities within the Facility were characterized using the three-criterion wetland delineation approach. The wetland indicator status of plant species was determined using Reed (1988). After characterizing the vegetation, hydrology, and soils of a plant stand type, and becoming familiar with the soil, vegetation, and/or hydrologic cues that indicate wetland edge, Hull flagged the wetland edges with collection of additional soil or hydrologic data where needed to refine the edge. Wetland delineation data sheets appear in Appendix B.

2.4.3 Hydrologic Indicators Observed within the Facility

Primary hydrologic indicators observed within wetlands during field activities included surface water, soil saturation within the upper 12 inches, water marks, water-stained leaves, and inundation. Secondary hydrologic indicators observed within some of the wetlands during field activities included the FAC-neutral test, surface soil cracks, drainage patterns, saturation visible on aerial photography, and geomorphic position.

2.4.4 Wetland Evaluation Methods

Hull performed an evaluation of wetlands using Ohio's Rapid Assessment Method for Wetlands (Mack, 2001), Final Version 5.0 (ORAM). The ORAM value assessment is based on review of resource materials, data obtained in the field, and the acreage as determined by delineation and mapping. The wetland value information is provided to the Ohio EPA for the purpose of placing wetlands into the appropriate wetland Category described in Ohio's Wetland Water Quality Standards (Sections 3745-1-05 and Sections 3745-1-50 through 3745-1-54). The ORAM wetland scoring sheets are included in Appendix C.

There are three possible Ohio Wetland Antidegradation tiers to which wetlands may be assigned:

- Category 1 – **Lowest value category.** Generally limited to small, low-diversity wetlands and wetlands with a predominance of non-native invasive species.
- Category 2 – **Middle value category.** Wetlands in this category are of moderate diversity but do not contain rare, threatened, or

endangered species. They are generally degraded, but are capable of attaining higher value. Most wetlands in Ohio are expected to fall into this category.

- Category 3 – **Highest value category.** Wetlands in this category may be large, diverse, represent rare plant community types, contain rare, threatened or endangered species, or any combination of these and several other factors.

2.4.5 Stream Delineation Methods

Streams identified on US Geological Survey (USGS) topographic maps are generally found to be under the Clean Water Act jurisdiction of the USACE. Additional streams may be identified in the field by the presence of a defined bed and bank, an OHWM and other stream morphological features. Suspected stream channels are examined upstream to identify the source of water and downstream to determine if the channel ends in a wetland, a confluence with another stream, a culvert, or another fate.

2.4.6 Stream Evaluation Methods

Hull evaluated streams within the Facility using the Ohio Qualitative Habitat Evaluation Index (QHEI) scoring method, or the Ohio Headwater Habitat Evaluation Index (HHEI) as applicable. Both methods yield a numerical score for the stream reach evaluated, which is then used to estimate the probable existing Aquatic Life Use of each stream. The HHEI and the Ohio Headwater Macroinvertebrate Field Evaluation Index (HMFEI) are used on primary headwater habitat (PHWH) streams with drainage area less than one square mile and with maximum pool depths less than 40 centimeters. Headwater streams are small first-order swales, creeks, and streams that are the origin of most rivers. These small streams join together to form larger streams and rivers, or run directly into larger streams and lakes. Ohio EPA defines a headwater stream as a stream with a watershed less than or equal to 20 square miles. Many streams and drainage ways have a watershed of less than one square mile; these are referred to as primary headwater streams (Ohio EPA, 2002). There are three possible categories to which PHWH streams may be assigned:

- Class I – **Lowest value category.** These streams are limited to intermittent or ephemeral streams with warm water conditions. They may contain ephemeral warm water communities, but are often dry for long periods of time.

- Class II – **Middle value category.** These streams are perennial or intermittent with warm water conditions. They generally contain species of animals that are

adapted to warm water streams, including certain amphibians and pioneering fish species, along with invertebrates such as odonate larvae.

- Class III – **Highest value category.** These streams are perennial with cold water conditions, and are usually groundwater fed. They contain species of animals adapted to the year-round presence of cool water, including certain amphibians or fish species, along with insect larvae such as mayflies, stoneflies, and caddisflies.

In addition to natural channels, different classes of headwater streams can also have modified channels. Many primary headwater streams are being modified through channelization and/or riparian removal, as part of activities related to agricultural activities and urban/suburban development. Such modification is the primary origin of habitat degradation in smaller streams and a leading source of impairment to the water quality of larger streams into which they flow (Ohio EPA, 2002).

The QHEI is used for streams with drainage areas greater than one square mile and/or with pool depths greater than 40 centimeters. This index was designed to provide a measure of habitat quality that corresponds to physical factors that affect communities of fish and aquatic invertebrates, and is based on six main metrics: substrate, instream cover, channel morphology, channel and bank condition, pool and riffle quality, and gradient (Rankin, 1989). These larger and deeper streams have sufficient amounts of water throughout the year to support year-round fish communities. Scores from the QHEI are used to provisionally assign each stream one or more of the following Aquatic Life Use designations, as defined by Ohio Water Quality Standards Water Use Designations (OAC 3745-1-07):

- **Warmwater Habitat (WWH)** – Capable of supporting and maintaining a balanced community of warmwater aquatic organisms. This is the most widely applied use designation assigned to rivers and streams in Ohio.

- **Limited Warmwater Habitat (LWWH)** – Temporary aquatic life habitat use designation created in the 1978 Ohio Water Quality Standards for streams not meeting specific warmwater habitat criteria. This Aquatic Life Use designation is being phased out

- **Exceptional Warmwater Habitat (EWH)** – Capable of supporting and maintaining an exceptional or unusual community of warmwater aquatic organisms with the general characteristics of being highly intolerant of adverse water quality conditions and/or being rare, threatened, endangered, or of special status.

- **Modified Warmwater Habitat (MWH)** – Incapable of supporting and maintaining a balanced community of warmwater aquatic organisms because of extensive and irretrievable modifications to the physical habitat

- **Seasonal Salmonid Habitat (SSH)** – Capable of supporting the passage of salmonids from October to May, and large enough to support recreational fishing.

- **Coldwater Habitat (CWH)** – Capable of supporting populations of coldwater aquatic organisms on an annual basis and/or put-and-take salmonid fishing. These water bodies are not necessarily capable of supporting the successful reproduction of salmonids and may be periodically stocked.

- **Limited Resource Water (LRW)** – Incapable of supporting and maintaining a balanced community of aquatic organisms because of natural background conditions or irretrievable human-induced conditions.

2.4.7 Surveying and Mapping Methods

The boundaries of all wetland areas and sample points were captured in the field using Trimble GeoXT mapping-level portable Global Positioning System (GPS) receivers. Differentially corrected GPS data were determined to be accurate within 0.5 to 2.0 feet. The wetland areas and sample points were placed in a GIS database and assembled with other available geographically referenced information using ARC-GIS v.9.0 software.

2.4.8 Isolated Surface Waters

As a consequence of the 2001 Supreme Court decision in *SWANCC vs. US Army*, isolated wetlands and other isolated water bodies are no longer under USACE jurisdiction. Currently, the USACE has sole authority to determine the isolation status of wetlands and other surface waters, which is determined on a case-by-case basis in the field.

The June 2006 US Supreme Court decision in *Rapanos/Carabell vs. US* resulted in additional limitations on the extent of federal jurisdiction over wetlands and streams that are not immediately adjacent to navigable-in-fact surface waters (e.g., larger streams and rivers). The US Environmental Protection Agency (USEPA) and the USACE issued technical guidance for interpreting the Rapanos/Carabell decision in December 2008. Hull formed its opinion of isolation status of the wetlands and streams within the Facility based on our interpretation of the December 2008 Rapanos guidance. An April 2011 revision of this memorandum is out for public review at this time but it is not yet final.

2.5 Delineation results

The results of the surface water delineation appear in Table 1 (wetlands) and Table 2 (streams). These Tables reference maps organized within a map grid. A map grid index sheet appears as Figure 1. Wetlands and streams are depicted graphically on Figures 2 through 18 and a map legend appears as Figure 19. Wetland delineation data sheets appear in Appendix B, and wetland assessment data sheets (ORAMs) appear in Appendix C. Stream assessment data sheets (HHEIs and QHEIs) appear in Appendix D.

2.5.1 Wetlands

The wetlands summarized in Table 1 are described below. Please note some wetlands delineated are more than 100 feet away from Facility features and there is no potential for project-related impacts. These wetlands are located along routes that were considered during Facility planning, and later removed during plan refinement to minimize impacts to environmental resources or for other design reasons. In an effort to maintain a clear and concise Surface Water Delineation Report, many wetlands and surface waters that will not be in proximity to construction activities for the final Facility configuration have been removed from this report.

Of the 23 wetlands delineated, nine wetlands were considered isolated and under State of Ohio jurisdiction and 14 wetlands were considered nonisolated and under federal jurisdiction.

Wetland J

Wetland J is an isolated emergent wetland dominated by reed canary grass and is in an area mapped as Algiers silt loam, a non-hydric soil unit that may contain inclusions of the Sloan hydric soil unit in depressions and oxbows. Samples were taken in the northern portion of the wetland (SP4); the surface was inundated with approximately 1 inch of water at the time of evaluation. Hydrology for the wetland is provided by direct precipitation.

Wetland J is an Ohio Category 1 wetland. The ORAM score was strongly influenced by lack of buffers, intensity of surrounding land use, and dominance by invasive species.

Wetland M

Wetland M is an isolated emergent wetland dominated by reed canary grass (*Phalaris arundinacea*; FACW+). Wetland M is located in an area mapped as Brookston silty clay loam,

0-2% slopes, a hydric soil unit. Samples were taken in the western portion of the wetland (SP32); the soils of this wetland had a depleted matrix while the surface of the wetland showed primary signs of hydrology with water-stained leaves present. Hydrology for the wetland is provided by direct precipitation.

Wetland M is an Ohio Category 1 wetland. The ORAM score was strongly influenced by the intensity of surrounding land use and the dominance of invasive species coupled with isolation.

Wetland N

Wetland N is a non-isolated emergent wetland dominated by rough barnyard grass (*Echinochloa muricata*; FACW+). Wetland N is located in an area mapped as Brookston silty clay loam, 0-2% slopes, a hydric soil unit. Samples were taken in the northwestern portion of the wetland (SP33); the surface was dry at the time of evaluation, however, primary and secondary signs of hydrology were observed. The soils for this wetland were disturbed or mixed during tile installation and swale configuration; this wetland accepts field drain tiles from the surrounding row crop agriculture fields. Hydrology for the wetland is provided by direct precipitation and field drainage tiles.

Wetland N is an Ohio Category 1 wetland. The ORAM score was strongly influenced by lack of buffers, intensity of surrounding land use, and recent disturbances to vegetation (mowing) and soils.

Wetland T

Wetland T is an isolated emergent wetland dominated by broad-leafed cattail (*Typha latifolia; OBL*). Wetland T is located in an area mapped as Brookston silty clay loam 0-2% slopes, a hydric soil. Samples were taken in the southwest portion of the wetland (SP43). Hydrology for the wetland is provided by direct precipitation and a seep from a probable broken field drain tile.

Wetland T is an Ohio Category 1 wetland. The ORAM score was strongly influenced by lack of buffers, having a high intensity of surrounding land use, and recent habitat and substrate disturbances from farming activities.

Wetland U

Wetland U is an isolated emergent wetland dominated broad-leaved cattail (*Typha latifolia; OBL*) and purple-leaved willow-herb (*Eplilobium coloratum*). Wetland U is located in an area mapped as Brookston silty clay loam 0-2% slopes hydric soil. Samples were taken in the southern portion of the wetland (SP44). Hydrology for the wetland is provided by direct precipitation.

Wetland U is an Ohio Category 1 wetland. The ORAM score was strongly influenced by having small size, narrow buffers, and a high intensity of surrounding land use from farming activities.

Wetland V

Wetland V is an isolated emergent wetland dominated by broad-leaved cattail (*Typha latifolia; OBL*) and rough barnyard grass (*Echinochloa muricata*; FACW+). Wetland V is located in an area mapped as Wea silt loam 0-3% slopes, a non-hydric soil. Samples were taken in the central portion of the wetland (SP45); the surface was inundated with approximately 12 inches of water at the time of evaluation. This wetland is spring-fed which provides its hydrology as well as direct precipitation.

Wetland V is an Ohio Category 1 wetland. The ORAM score was strongly influenced by having very narrow buffers, recent disturbances, and high intensity of surrounding land use because this wetland was located within an open cow pasture.

Wetland W

Wetland W is an emergent isolated wetland dominated by stick tight (*Bidens cernua*; OBL), barnyard grass (*Echinocloa crus-galli*; FACU), blunt spike-rush (*Eleocharis obtusa*; OBL), and mild water-pepper (*Polygonum hydropiperoides*; OBL). Wetland W is located in an area mapped as Brookston silty clay loam 0-2% slopes (BsA), a hydric soil unit. Samples were taken in the central portion of the wetland (SP46). Hydric soils were confirmed by the presence of a thick dark surface (Indicator A12). Surface inundation and soil saturation were lacking at the time of evaluation. However, the presence of wetland hydrology was confirmed by saturation observed on aerial imagery, geomorphic position and a positive FAC neutral test. The combination of these three secondary indicators confirms the presence of wetland hydrology. Hydrology for the wetland is provided by direct precipitation.

Wetland W is an Ohio Category 1 wetland. The ORAM score was strongly influenced by its small size, hydrology, lack of buffers, surrounding land use, limited habitat development, and predominance of invasive plant species.

Wetland Y

Wetland Y is a non-isolated emergent wetland dominated by reed canary grass (*Phalaris arundinacea*; FACW). Wetland Y is located in an area mapped as Brookston silty clay loam 0-2% slopes (BsA), Brookston silty clay loam 2-6% slopes (BsB), and Celina silt loam, 2-6% slopes (CnB). Brookston silty clay loam is a hydric soil unit; Celina silt loam is a non-hydric unit, but may contain inclusions of the hydric Brookston silty clay loam unit in depressions. Samples were taken on the western end of the wetland (SP50). Hydric soils were confirmed by the presence of a thick dark surface (Indicator A12). Hydrology for the wetland is provided by direct precipitation. The surface was inundated with approximately 1 inch of water and soils were saturated to the surface. Additional indicators of wetland hydrology observed include hydrogen sulfide odor, drainage patterns, saturation visible on aerial photography and a positive FAC-neutral test.

Wetland Y is an Ohio Category 1 wetland. The ORAM score was strongly influenced by its buffer condition, limited habitat development, and predominance of invasive plant species.

Wetland Z

Wetland Z is a non-isolated emergent wetland dominated by reed canary grass (*Phalaris arundinacea*; FACW). Wetland Z is located in an area mapped as Brookston silty clay loam 0-2% slopes (BsA), a hydric soil unit. Samples were taken in the western portion of the wetland (SP51). Hydric soils were confirmed by the presence of a depleted matrix (Indicator F3). Hydrology for the wetland is provided by direct precipitation. Soils were saturated at a depth of 12 inches from the surface. Secondary indicators of wetland hydrology observed include saturation visible on aerial photography and a positive FAC-neutral test.

Wetland Z is an Ohio Category 1 wetland. The ORAM score was strongly influenced by buffer condition, intensity of surrounding land use, hydrology, relatively high levels of habitat disturbance and predominance of invasive plant species.

Wetland AA

Wetland AA is a non-isolated, emergent/scrub-shrub/forested wetland dominated by reed canary grass (*Phalaris arundinacea*; FACW), green ash (*Fraxinus pennsylvanica;* FACW) and honey locust (*Gleditisia triacanthos*; FAC-) and is located in an area mapped as Brookston silty clay loam, 0-2% slopes (BsA), a hydric soil unit. Samples were taken in the northeast portion of the wetland (SP52). Hydric soils were confirmed by the presence of a depleted matrix (Indicator F3). Hydrology for the wetland is provided by direct precipitation. Surface inundation and soil saturation were lacking at the time of evaluation. However, water-stained leaves, saturation visible on aerial imagery, geomorphic position, and a positive FAC neutral test indicate the presence of wetland hydrology.

Wetland AA is an Ohio Category 1 wetland. The ORAM score was strongly influenced by the wetland's small size, buffer condition, hydrology, intensity of surrounding land use, lack of habitat development and predominance of invasive species.

Wetland BB

Wetland BB is an isolated emergent/forested wetland associated with a man-made pond. It is dominated by reed canary grass (*Phalaris arundinacea*; FACW) and black willow (*Salix nigra*; FACW). Wetland BB is in an area mapped as Brookston silty clay loam, 0-2% slopes (BsA) and Miami silt loam, 2-6% slopes (MlB2). Brookston silty clay loam, 0-2% slopes is a hydric soil unit; Miami silt loam, 2-6% slopes is a non-hydric unit, but may contain inclusions of the hydric Brookston silty clay loam unit in drainage ways. Samples were taken in the southern portion of the wetland (SP53). Hydric soils were confirmed by the presence of a depleted matrix (Indicator F3). Hydrology for the wetland is provided by direct precipitation. Soils were saturated to the surface; additional indicators of wetland hydrology observed were water marks, inundation on aerial imagery, water stained leaves and a positive FAC-neutral test.

Wetland BB is an Ohio Modified Category 2 wetland. The ORAM score was strongly influenced by buffer condition, intensity of surrounding land use, hydrology, and predominance of invasive plant species.

Wetland CC

Wetland CC is a non-isolated emergent wetland complex that consists of two separate wetland areas (Wetland CC and Wetland CC-2, delineated together; Figure 12) of similar size located

within approximately 90 feet one another. Both wetland areas are dominated by reed canary grass (*Phalaris arundinacea*; FACW) and are in an area mapped as Brookston silty clay loam, 0-2% slopes (BsA), a hydric soil unit. Samples were taken in the central portion of Wetland CC (SP54) and are representative of both wetland areas in this complex. Hydric soils were confirmed by the presence of thick dark surface (Indicator A12) characteristics. Hydrology for the wetland is provided by direct precipitation. Surface inundation and soil saturation were lacking at the time of evaluation. However, the presence of wetland hydrology was confirmed by saturation visible on aerial imagery and a positive FAC neutral test.

Wetland CC is an Ohio Category 1 wetland. The ORAM score was strongly influenced by relatively low intensity surrounding land use, hydrology, lack of habitat development, habitat alteration, and predominance of invasive species.

Wetland DD

Wetland DD is an isolated forested/scrub-shrub wetland dominated by cottonwood, (*Populus* deltoides; FAC), black willow and poison ivy (*Toxicodendron radicans*; FAC). Wetland DD is located in an area mapped as Miami silt loam, 2-6% slopes (MlB), a non-hydric map unit; however, it may contain inclusions of the hydric Brookston silty clay loam soil unit in drainage ways. Samples were taken in the northern portion of the wetland (SP55). Hydric soils were confirmed by the presence of depleted matrix (Indicator F3) conditions. Hydrology for the wetland is provided by direct precipitation. Surface inundation and soil saturation were lacking at the time of evaluation. However, the presence of wetland hydrology was confirmed by water marks, water stained leaves, saturation visible on aerial imagery, geomorphic position and a positive FAC-neutral test.

Wetland DD is an isolated Ohio Category 2 wetland. The ORAM score was strongly influenced by buffer condition, hydrology and intensity of surrounding land use.

Wetland EE

Wetland EE is a non-isolated emergent wetland dominated reed canary grass (*Phalaris arundinacea*; FACW). Wetland EE is located in an area mapped as Brookston silty clay loam, 2-6% slopes (BsB), a hydric soil unit. Samples were taken in the southeast portion of the wetland (SP56). Hydric soils were confirmed by the presence of a depleted matrix (Indicator F3). Hydrology for the wetland is provided by direct precipitation. Wetland EE was inundated to

a depth of 1" and soils were saturated to the surface. Additional indicators of wetland hydrology were a thin muck surface, drainage patterns, saturation visible on aerial imagery and a positive FAC-neutral test.

Wetland EE is a non-isolated Ohio Category 1 wetland. The ORAM score was strongly influenced by narrow buffers, relatively high intensity of surrounding land use, hydrology and prevalence of invasive species.

Wetland FF

Wetland FF is a non-isolated emergent/scrub-shrub wetland dominated by reed canary grass (*Phalaris arundinacea*; FACW) and cottonwood (*Populus deltoids*; FACW). Wetland FF is located in an area mapped as Brookston silty clay loam, 0-2% slopes (BsA), Crosby silt loam, 2-6% slopes (CsB), and Miami silt loam, 6-12% slopes (MlC2). Brookston silty clay loam is a hydric soil unit. The Crosby silt loam and Miami silt loam units are non-hydric; however, they may contain inclusions of the hydric Brookston unit in depressions and drainage ways. Samples were taken in the eastern portion of the wetland (SP57). Hydric soils were confirmed by the presence of a depleted matrix (Indicator F3). Hydrology for the wetland is provided by direct precipitation. Surface inundation and soil saturation were lacking at the time of evaluation. However, the presence of wetland hydrology was confirmed by the presence of drainage patterns and a positive FAC neutral test.

Wetland FF is an Ohio Category 1 wetland. The ORAM score was strongly influenced by narrow buffers, the intensity of surrounding land use, hydrology, lack of habitat development and the predominance of invasive species.

Wetland GG

Wetland GG is a non-isolated emergent/scrub-shrub wetland dominated by reed canary grass (*Phalaris arundinacea*; FACW), sandbar willow (*Salix exigua; OBL*) and black willow (*Salix nigra, FACW*). Wetland GG is located in an area mapped as Miami silt loam 2-6% slopes, a non-hydric soil that may contain inclusions of the Brookston Silty clay loam hydric soil unit in drainageways. Samples were taken in the eastern portion of the wetland (SP58). Hydrology for the wetland is provided by direct precipitation and soil was saturated to the surface at the time of evaluation.

Wetland GG is an Ohio Category 1 wetland. The ORAM score was strongly influenced by having fairly narrow buffers and a high percent coverage of invasive plants.

Wetland HH

Wetland HH is a non-isolated emergent wetland dominated by reed canary grass (*Phalaris arundinacea*; FACW). Wetland HH is located in an area mapped as Miami silt loam, 2-6% slopes. Miami silt loam units are non-hydric; however, they may contain inclusions of the hydric Brookston unit in drainage ways. Samples were taken in the southern portion of the wetland (SP59). Hydric soils were confirmed by the presence of a depleted matrix (Indicator F3). Hydrology for the wetland is provided by direct precipitation and a small drainage located at the northern point of the wetland. The presence of wetland hydrology was confirmed by the presence of drainage patterns and a positive FAC neutral test.

Wetland HH is a Modified Ohio Category 2 wetland. The ORAM score was strongly influenced by having no observed modifications to the natural hydrologic regime.

Wetland II

Wetland II is an isolated emergent wetland dominated by false nettle (*Boehmeria cylindrica*; FACW). Wetland II is located in an area mapped as Brookston silty clay loam, 2-6% slopes (BsB), a hydric soil unit. Samples were taken in the northern portion of the wetland (SP60). Hydric soils were confirmed by the presence of a depleted matrix (Indicator F3). The hydrology for Wetland II was confirmed by surface water and soil saturation provided by direct precipitation.

Wetland II is an Ohio Category 1 wetland. The ORAM score was strongly influenced by very narrow buffers, a high intensity of surrounding land use, and a lack of habitat development.

Wetland JJ

Wetland JJ is a non-isolated emergent wetland dominated by calico aster (*Aster lateriflorus*; FACW), and sandbar willow (*Salix exigua; OBL*). Wetland JJ is located in an area mapped as Miami silt loam 2-6% slopes, a non-hydric soil that may contain inclusions of the Brookston hydric soil unit in drainageways. Samples were taken in the northwest portion of the wetland (SP62). Hydrology for the wetland is provided by direct precipitation, soil was saturated to the surface and there was surface water up to 3 inches at the time of evaluation.

Wetland JJ is an Ohio Category 1 wetland. The ORAM score was strongly influenced by being small in size, having very narrow buffers and a moderately high intensity of surrounding land use.

Wetland KK

Wetland KK is a non-isolated forested wetland dominated by creeping bentgrass (*Agrostis stolonifera*; FACW) and green ash (*Fraxinus pennsylvanica*; FACW). Wetland KK is located in an area mapped as Brookston silty clay loam 0-2% slopes, a hydric soil unit. Samples were taken in the southwest portion of the wetland (SP63). Hydrology for the wetland is provided by direct precipitation, soil was saturated and there were pockets of surface water at the time of evaluation.

Wetland KK is an Ohio Category 2 wetland. The ORAM score was strongly influenced by good habitat development and habitat that has recovered from past alteration.

Wetland LL

Wetland LL is a non-isolated emergent wetland dominated by reed canary grass (*Phalaris arundinacea*; FACW). Wetland LL is located in an area mapped as Miami silt loam, 6-12% Miami silt loam units are non-hydric; however, they may contain inclusions of the hydric Brookston unit in drainage ways. Samples were taken in the north-central portion of the wetland (SP64). Hydric soils were confirmed by the presence of a redox dark surface (Indicator F6). Hydrology for the wetland is provided by direct precipitation and Stream D. Surface inundation and soil saturation were present at the time of evaluation.

Wetland LL is a Modified Ohio Category 2 wetland. The ORAM score was strongly influenced by wide buffer and having no observed modifications to the natural hydrologic regime.

Wetland MM

Wetland MM is a non-isolated emergent/scrub-shrub wetland dominated by broadleaf cattail (*Typha latifolia*; OBL). Wetland MM is located in an area mapped as Miami silt loam, 6-12% slopes, a hydric soil unit. Samples were taken in the western portion of the wetland (SP65). Hydric soils were confirmed by the presence of a depleted matrix (Indicator F3). Hydrology for

the wetland is provided by direct precipitation. Soil saturation was present at the time of evaluation.

Wetland MM is in the Ohio Category 1/2 gray zone, and assumed to be Category 2.

Wetland NN

Wetland NN is a non-isolated emergent wetland with a forested component dominated by broadleaf cattail (*Typha latifolia*; OBL) and black willow (*Salix nigra*; FACW+). Wetland NN is located in an area mapped as Miami silt loam 2-6% slopes, a non-hydric soil that may contain inclusions of the Brookston Silty clay loam hydric soil unit in drainageways. Samples were taken in the southwest portion of the wetland (SP66). Hydrology for the wetland is provided by direct precipitation, soil was saturated to the surface and there was up to 3 inches of surface water at the time of evaluation.

Wetland NN is an Ohio Category 1 wetland. The ORAM score was strongly influenced by having high to moderately high surrounding land use, narrow buffers and moderate amounts of invasive plant cover.

2.5.2 Streams

The streams summarized in Table 2 are described below. Please note some stream segments delineated are more than 100 feet away from Facility features and there is no potential for project-related impacts. These streams are located along routes that had been proposed during Facility planning, and later removed during plan refinement to minimize impacts to environmental resources or for other design reasons. In an effort to maintain a clear and concise Surface Water Delineation Report, many resources that will not be in proximity to construction activities for the final Facility configuration have been removed from this report.

All 30 streams and 38 stream segments within the Facility were determined to be nonisolated and under federal jurisdiction.

Stream D-2

Stream D-2 is an unnamed primary headwaters stream that has a watershed area of 0.55 square miles and was therefore evaluated using the HHEI. Stream D does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life

and chemical parameters. The HHEI score for Stream D-2 (49) identifies it as a Modified Class II PHWH ephemeral stream. Substrates within the assessed reach consisted primarily of clay hardpan with lesser amounts of gravel sand and silt.

Stream D-3

Stream D-3 is an unnamed stream that has a watershed area of 1.59 square miles and therefore was evaluated using the QHEI. Stream D-3 does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The QHEI score of 65.5 for Stream D-3 identifies it as an intermittent potential Warm Water Habitat stream. Substrates within the assessed reach consisted primarily of gravel with lesser amounts of cobble sand and silt.

Stream D-4

Stream D-4 is an unnamed primary headwaters stream that has a watershed area of 1.6 square miles and was dry at the time of assessment; thus Stream D-4 was evaluated using the HHEI. Stream D-4 does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 47 for Stream D-4 identifies it as a Class II PHWH intermittent stream, which constitutes the stream's existing use. Substrates within the assessed reach consisted primarily of cobble and gravel with lesser amounts of sand, silt and clay hardpan.

Stream E

Stream E is a named intermittent stream (Dugan Run). Although Stream E has a watershed area of 2.73 square miles, it was dry during an earlier assessment and was initially evaluated using the HHEI. The stream had water and was flowing during the June 2011 field reconnaissance and was therefore also evaluated with the QHEI. In 2005, the Ohio EPA recommended that Dugan Run be given a Cold Water Habitat Aquatic Life Use designation but this has not yet been promulgated in rule. The sampled reach of Stream E lacks the features necessary for a Cold Water Habitat designation (i.e. substrate types of bedrock, boulder, boulder slabs, and cobble comprising >20% of the substrate and presence of a natural channel), and the HHEI score is less than 70 and the QHEI score was 44. The HHEI score for Stream E identifies it as a Modified Class II PHWH intermittent stream and the QHEI score indicates a Modified Warmwater Habitat, which likely constitutes the stream's existing use. Substrates within the assessed reach consisted primarily of gravel and sand.

Stream F

Stream F is an unnamed primary headwaters stream that has a watershed area of 0.24 square miles and a maximum pool depth of 20 cm, and therefore was evaluated using the HHEI. Stream F does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. While the HHEI score (74) for Stream F identifies it as a potential Modified Class III perennial PHWH stream, the HMFEI score (14), and a lack of amphibians observed during the VES indicate that Stream F is a Modified Class II perennial PHWH stream. The lower existing use may be due to organic enrichment from runoff from adjacent agricultural fields. Substrates within the assessed reach consisted primarily of gravel and sand.

Stream J-2

Stream J-2 is an unnamed intermittent stream that has a watershed area of 0.65 square miles and a maximum pool depth of 80 cm, and was therefore evaluated using the QHEI. Stream J-2 does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The QHEI score of 72 for Stream J-2 identifies it as a Warmwater Habitat stream. Substrates within the assessed reach consisted primarily of cobble and gravel.

Stream L

Stream L is a named primary headwaters stream (Little Darby Creek) that has a watershed area of 1.95 square miles, and was dry during the assessment, so was therefore evaluated using both the HHEI and QHEI. Stream L has assigned Aquatic Life Use designations of Exceptional Warm Water Habitat and Cold Water Habitat based on evaluation by Ohio EPA in 2004. The HHEI score for Stream L identifies it as a Class II PHWH intermittent stream and the QHEI score indicates a Warmwater Habitat resource, but this assessment is overridden by the promulgated rule. Interstitial perennial flow is assumed to be present. Substrates within the assessed reach consisted primarily of silt, sand, and gravel.

Stream M

Stream M is an unnamed primary headwaters stream that has a watershed area of 0.07 square miles and was dry during the assessment; therefore was evaluated using the HHEI. Stream M does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score for Stream M identifies it as a

Modified Class I PHWH ephemeral stream, which constitutes the stream's existing use. Substrates within the assessed reach consisted primarily of silt and sand.

Stream O

Stream O is a named perennial stream (East Fork Buck Creek) that has a watershed area of 4.4 square miles and a maximum pool depth greater than 40 cm; therefore was evaluated using the QHEI. Stream O has an assigned Aquatic Life Use designation of Cold Water Habitat which was verified based on field data collected by the Ohio EPA in 2005. The QHEI score of 46.5 for Stream O places it in the "fair" narrative range and suggests that the stream habitat in this reach is not capable of supporting cold-water aquatic communities; however this assessment is overridden by the promulgated rule.

Stream S

Stream S is an unnamed primary headwaters stream that has a watershed area of 0.08 square miles and a maximum pool depth of 6 cm, therefore was evaluated using the HHEI. Stream S does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score for Stream S identifies it as a Modified Class I ephemeral PHWH stream, which constitutes the stream's existing use. Substrates within the assessed reach consisted entirely of silt.

Stream Y

Stream Y is a named intermittent stream (Buck Creek) that has a watershed area of 5.56 square miles; therefore was evaluated using the QHEI. Stream Y has an assigned Aquatic Life Use designation of Cold Water Habitat (CWH) which was verified based on field data collected by the Ohio EPA in 2005. The QHEI score for Stream Y (47.5) places it in the fair narrative range and suggests that the stream habitat in this reach is not capable of supporting cold-water aquatic communities; however this assessment is overridden by the promulgated use designation in rule. Stream Y was dry at the time of assessment. Substrate within the assessed reach consisted of mostly sand with lesser amounts of gravel, cobble, and silt.

Stream Y-2

Stream Y-2 is a named intermittent stream (Buck Creek) that has a watershed area of 3.51 square miles and was therefore evaluated using the QHEI. Stream Y-2 has an assigned Aquatic Life Use designation of Cold Water Habitat (CWH) which was verified based on field

data collected by the Ohio EPA in 2005. The combination of the stream being a dry channel at the time of evaluation along with a QHEI score of 25.5 for Stream Y-2 places it in the "very poor" narrative range and suggests the stream habitat in this reach is not capable of supporting cold-water aquatic communities; however this assessment is overridden by the promulgated use designation in rule. Substrate within the assessed reach consisted primarily of silt.

Stream Y-3

Stream Y-3 is a named intermittent stream (Buck Creek) that has a watershed area of 1.87 square miles and was therefore evaluated using the QHEI. Stream Y-3 has an assigned Aquatic Life Use designation of Cold Water Habitat which was verified based on field data collected by the Ohio EPA in 2005. The combination of the stream being a dry channel at the time of evaluation along with a QHEI score of 22 for Stream Y-3 places it in the "very poor" narrative range and suggests the stream habitat in this reach is not capable of supporting cold-water aquatic communities; however this assessment is overridden by the promulgated use designation in rule. Substrate within the assessed reach consisted primarily of silt.

Stream Y-4

Stream Y-4 is a named stream (Buck Creek) that has a watershed area of 1.85 square miles; therefore was evaluated using the QHEI. Stream Y-4 has an assigned Aquatic Life Use designation of Cold Water Habitat which was verified based on field data collected by the Ohio EPA in 2005. The QHEI score of 33 for Stream Y-4 identifies it as a Modified Warm Water Habitat stream; however, this assessment is overridden by the promulgated use designation in rule. Substrates within the assessed reach consisted primarily of clay hardpan and gravel with lesser amounts of cobble, sand, and silt.

Stream AA-2

Stream AA-2 is a named primary headwaters stream (Buck Creek) that has a watershed area of <0.10 square miles and was dry during the field reconnaissance; therefore was evaluated using the HHEI. Stream AA-2 has an assigned Aquatic Life Use designation of Cold Water Habitat which was verified based on field data collected by the Ohio EPA in 2005. The HHEI score of 13 for Stream AA-2 identifies it as a Modified Class I PHWH ephemeral stream; however, this assessment is overridden by the promulgated use designation in rule. Substrates within the assessed reach consisted primarily of silt with a few boulders. Note: This stream originates on

the south side of an existing farm access lane to the north from agricultural drainage tiles and overland flow through an upland grassy drainage swale in an active agriculture field to the north.

Stream BB

Stream BB is a named intermittent stream (Treacle Creek) that has a watershed area of 1.11 square miles and was flowing during the assessment. Due to the perceived small drainage area and shallow pool depths measured during the June 2011 field reconnaissance, this stream was evaluated with both the QHEI and HHEI. Stream BB has an assigned Aquatic Life Use designation of Exceptional Warm Water Habitat based on evaluations by Ohio EPA in 2004. The HHEI score for Stream BB identifies it as a Modified Class II PHWH intermittent stream and the QHEI score indicates it is likely a Modified Warmwater Habitat; however, these assessments are overridden by the promulgated rule. Substrates within the assessed reach consisted primarily of cobble, sand, clay hardpan, and gravel.

Stream BB-2

Stream BB-2 is a named perennial stream (Treacle Creek) that has a watershed area of 7.14 square miles and was flowing during the assessment. Due to the large drainage area and deep pool depths measured during the October 2011 field reconnaissance, this stream was evaluated with the QHEI. Stream BB-2 has an assigned Aquatic Life Use designation of Exceptional Warmwater Habitat based on evaluations by Ohio EPA in 2005. The QHEI score of 73 supports this designation. Substrates within the assessed reach consisted primarily of gravel with lesser amounts of sand, clay hardpan, cobble, and silt. An existing dilapidated farm equipment access bridge was present at the proposed crossing. Evidence of live and dead mussels was sought during this investigation; several dead weathered shells were observed along the banks and on gravel bars consisting of Asian clam (*Corbicula fluminea*), kidneyshell (*Ptychobranchus fasciolaris*), and a mucket (*Actinonaias ligamentina carinata*). No live mussels or fresh dead shells were observed during this field investigation.

Stream BB-3

Stream BB-3 is a named stream (Treacle Creek) that has a watershed area of 0.15 square miles and was flowing during the assessment. Due to the small drainage area this stream was evaluated with the HHEI. Stream BB-3 has an assigned Aquatic Life Use designation of Exceptional Warm Water Habitat based on evaluations by Ohio EPA in 2005. The HHEI score of 61 indicates it is Modified Class II PHWH intermittent stream; however, this assessment is

overridden by the promulgated use designation in rule. Substrates within the assessed reach consisted primarily of gravel and sand with lesser amounts of cobble, leaf pack/woody debris, boulder, and silt.

Stream CC

Stream CC is an unnamed primary headwaters stream that has a watershed area of 0.63 square miles but was dry during the site visit; therefore this stream was evaluated using the HHEI. Stream CC does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score for Stream CC identifies it as a Modified Class I ephemeral PHWH stream, which constitutes the stream's existing use. Substrates within the assessed reach consisted primarily of cobble, gravel and clay hardpan.

Stream DD

Stream DD is an unnamed primary headwaters stream that has a watershed area of 0.068 square miles with a dry stream channel; thus evaluated using the HHEI. Stream DD does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score for Stream DD identifies it as a Modified Class I ephemeral PHWH stream, which constitutes the stream's existing use. Substrates within the assessed reach consisted primarily of cobble and clay hardpan. Note: Stream DD drains to Stream L (Little Darby Creek) which was also dry during this investigation.

Stream EE

Stream EE is an unnamed primary headwaters stream that has a watershed area of 0.31 square miles with a dry stream channel; therefore was evaluated using the HHEI. Stream EE does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score for Stream EE identifies it as a Modified Class II ephemeral PHWH stream, which constitutes the stream's existing use. Substrates within the assessed reach consisted primarily of gravel and silt.

Stream II

Stream II is an unnamed primary headwaters stream that had a dry channel at the time of evaluation and has a watershed area of 0.04 square miles, and was therefore evaluated using the HHEI. Stream II does not have an assigned Aquatic Life Use designation and has not been

monitored by Ohio EPA for aquatic life and chemical parameters. Stream II is classified as a Modified Class I ephemeral PHWH stream with an HHEI score of 25. Substrate within the assessed reach consisted primarily of silt.

Stream JJ

Stream JJ is an unnamed intermittent stream that has a watershed area of 1.08 square miles and was therefore evaluated using the QHEI. Stream JJ does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The QHEI score of 36.5 for Stream JJ identifies it as a Modified WWH stream. Substrates within the assessed reach consisted primarily of cobble and gravel with lesser amounts of silt, sand and boulder.

Stream MM

Stream MM is an unnamed ephemeral primary headwaters stream that was a dry channel at the time of evaluation and has a watershed area of 0.13 square miles; it was therefore evaluated using the HHEI. Stream MM does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 29 for Stream MM identifies it as a Modified Class I PHWH stream. Substrate within the assessed reach consisted primarily of silt.

Stream NN

Stream NN is an unnamed ephemeral primary headwaters stream that had a dry channel at the time of evaluation and has a watershed area of 0.51 square miles and a maximum pool depth of 25.4 cm; therefore it was evaluated using the HHEI. Stream NN does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 46 for Stream NN identifies it as a Modified Class II PHWH stream. Substrates within the assessed reach consisted primarily of gravel and cobble.

Stream OO

Stream OO is an unnamed ephemeral primary headwaters stream that had a dry channel at the time of evaluation and has a watershed area of 0.69 square miles; thus it was evaluated using the HHEI. Stream OO does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 36

for Stream OO identifies it as a Modified Class II PHWH stream. Substrates within the assessed reach consisted primarily of gravel and silt with lesser amounts of cobble and boulder.

Stream PP

Stream PP is an unnamed ephemeral primary headwater stream (UT to Little Darby Creek) that has a watershed area of less than 0.10 square mile and was dry during this assessment; thus Stream PP was evaluated using the HHEI. Stream PP does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 15 for Stream PP identifies it as a Modified Class I PHWH ephemeral stream, which constitutes the stream's existing use. Substrates within the assessed reach consisted primarily of silt with minor amounts of cobble, clay hardpan, and boulder.

Stream QQ

Stream QQ is an unnamed ephemeral stream (UT to Treacle Creek) that has a watershed area of 0.20 square mile and was dry during this assessment; thus Stream QQ was evaluated using the HHEI. Stream QQ does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 15 for Stream QQ identifies it is a Modified Class I PHWH ephemeral stream, which constitutes the stream's existing use. Substrates within the assessed reach consisted primarily of silt with minor amounts of clay hardpan, cobble, and gravel.

Stream SS

Stream SS is an unnamed ephemeral primary headwaters stream (UT to Treacle Creek) that has a watershed area of 0.19 square miles and was dry at the time of assessment; thus Stream SS was evaluated using the HHEI. Stream SS does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 46 for Stream SS identifies it as a Modified Class II PHWH ephemeral stream. The assessed reach contained substrate consisting primarily of gravel, with lesser amounts of cobble, clay hardpan, and sand.

Stream TT

Stream TT is an unnamed ephemeral primary headwaters stream (UT to Treacle Creek) that has a watershed area of 0.21 square miles and was dry at the time of assessment; thus Stream TT was evaluated using the HHEI. Stream TT does not have an assigned Aquatic Life Use

designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 23 for Stream TT identifies it as a Modified Class I PHWH ephemeral stream, which constitutes the stream's existing use. Substrates within the assessed reach consisted primarily of clay hardpan and silt with lesser amounts of gravel and sand.

Stream UU

Stream UU is a named primary headwaters stream (Jumping Run) that has a watershed area of 0.65 square miles and had maximum pool depths of 15 cm; thus Stream UU was evaluated using the HHEI. Stream UU has an assigned Aquatic Life Use designation of Exceptional Warm Water Habitat based on Ohio EPA evaluation. The HHEI score of 49 for Stream UU identifies it as a Modified Class II PHWH intermittent stream; however this assessment is overridden by the promulgated use designation in rule. Interstitial perennial flow is assumed to be present. Substrates within the assessed reach consisted primarily of clay hardpan with lesser amounts of silt, sand, and gravel.

Stream VV

Stream VV is an unnamed primary headwaters stream (UT to UT to Jumping Run) that has a watershed area of 0.04 square miles and was dry during the time of assessment; thus Stream VV was evaluated using the HHEI. Stream VV does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 9 for Stream VV identifies it as a Modified Class I PHWH ephemeral stream, which constitutes the stream's existing use. Substrates within the assessed reach consisted primarily of clay hardpan, with lesser amounts of silt, cobble, and gravel.

Stream WW

Stream WW is an unnamed primary headwaters stream that had a dry channel at the time of evaluation and has a watershed area of 0.42 square miles; therefore it was evaluated using the HHEI. Stream WW does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 42 for Stream WW identifies it as a Modified Class II PHWH ephemeral stream. Substrates within the assessed reach consisted primarily of gravel.

Stream XX

Stream XX is an unnamed primary headwaters stream that was a dry channel at the time of evaluation and has a watershed area of 0.01 square miles; therefore was evaluated using the HHEI. Stream XX does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 38 for Stream XX identifies it as a Modified Class II PHWH ephemeral stream. Substrates within the assessed reach consisted primarily of gravel with lesser amounts of silt and clay hardpan.

Stream YY

Stream YY is an unnamed primary headwaters stream (UT to Little Darby Creek) that has a watershed area of 0.27 square miles and was dry at time of assessment; therefore was evaluated using the HHEI. Stream YY does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 8 for Stream YY identifies it as a Modified Class I ephemeral PHWH stream, which constitutes the stream's existing use. Substrates within the assessed reach consisted primarily of clay hardpan with lesser amounts of cobble and gravel.

Stream ZZ

Stream ZZ is an unnamed primary headwaters stream (UT to Buck Creek) that has a watershed area of 0.24 square miles and the stream bed was dry at time of evaluation; therefore it was evaluated using the HHEI. Stream ZZ does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score for Stream ZZ identifies it as a Modified Class II PHWH ephemeral stream. Substrates within the assessed reach consisted primarily of gravel with lesser amounts of cobble sand and boulder.

Stream ZZ-2

Stream ZZ-2 is an unnamed primary headwaters stream (UT to Buck Creek) that has a watershed area of 0.10 square miles and had a dry channel at the time of assessment; therefore was evaluated using the HHEI. Stream ZZ-2 does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 29 for Stream ZZ-2 identifies it as a Modified Class I ephemeral PHWH stream, which constitutes the stream's existing use. Substrates within the assessed reach consisted almost entirely of silt with lesser amounts of leaf pack/woody debris.

Stream AAA

Stream AAA is an unnamed primary headwaters stream that has a watershed area of 0.05 square miles therefore it was evaluated using the HHEI. Stream AAA does not have an assigned Aquatic Life Use designation and has not been monitored by Ohio EPA for aquatic life and chemical parameters. The HHEI score of 34 for Stream AAA identifies it as a potential Modified Class II PHWH ephemeral stream. Substrates within the assessed reach consisted primarily of clay hardpan and silt with lesser amounts of boulder, gravel, sand and cobble.

3.0 ECOLOGICAL COMMUNITIES EVALUATION

Hull assessed all plant communities within ¼ mile of the Facility, and compiled plant species lists for these communities. Some animal species within ¼ mile of the Facility were observed in the field, and other animal species were inferred to be present based on the composition of the plant communities within ¼ mile of the Facility.

3.1 Ecological Evaluation Methods

The GIS data base was used to prepare maps for desktop review, which included aerial photos of the proposed Facility, a ¼ mile buffer around the entire Facility, and vegetation coverages from the National Land Cover Data (NLCD) 2001 dataset. Note that the ¼ mile buffer defined in GIS includes the entire Project Area. A desktop review of the maps was performed, during which plant community types were identified on the maps. Plant communities with sufficient vegetative cover to be included on the NLCD (e.g., woodlands and scrub-shrub communities) were classified into a small subset of generalized plant community types and indicated on Figures 2 through 18. Other plant community types with ecological value identifiable on aerials (e.g., old fields) were also mapped.

Identification of the plant community types and their species composition was informed by the consultant's botanical, ecological, and topographical data from the Facility. In cases where a proposed plant community type (e.g., Upland Ridge Woods) had not been previously surveyed, the consultant returned to the field to verify the community type and prepare a species list.

The consultant then compiled lists of the species of animal life likely to be associated with each plant community type, supplemented with animal species directly or indirectly observed during field activities. In compiling animal species lists, the consultant considered only vertebrate fauna including birds, mammals, and reptiles. Invertebrate fauna were not listed or inferred.

3.2 Ecological Communities Evaluation Results

A map grid index sheet appears as Figure 1, plant communities are depicted graphically on Figures 2 through 18, and a map legend appears as Figure 19.

Hull identified and mapped seven plant community types within ¼ mile of the Facility: old field, scrub-shrub, young woods, upland ridge, upland woods, forested wetlands, and riparian woods

(Table 3). Note that agricultural row crops comprise a majority of the area within ¼ mile of the Facility, but this land use is not included as an ecological community. Agricultural land in active row crops is assumed to have nominal ecological value and therefore it was not included. Similarly, residential lawns and hedgerows were not included. The plant assemblages within each of these plant community types are described below.

3.3.1 Old Field

The old field community type comprises approximately 1.02% of the ¼ mile buffer area. Old fields develop on land abandoned from agriculture and persist for 10 to 20 years until they succeed to scrub shrub or forest community or are converted back to agriculture. This community type is dominated by upland herbaceous vegetation. Common species include goldenrods (*Solidago* spp.), Queen Anne's lace (*Daucus carota),* teasel *(Dipsacus fullonum), Aster* spp., ragweeds (*Ambrosia* spp.), thistles (*Cirsium* spp.), and upland grasses. Old fields can occur on flat to sloping terrain, but usually do not occur on steep slopes.

Old field plant communities provide habitat and foraging for numerous animal species. Mammals that would most likely utilize this plant community include white-tailed deer, red fox, coyote, groundhog, striped skunk, eastern cottontail rabbit, field mouse, and meadow vole.

Many ground-nesting bird and song bird species utilize old field plant communities for nesting and foraging. Ground-nesting bird species most likely to frequent old field communities in the project area include ring-neck pheasant, eastern wild turkey, bobwhite quail, eastern meadowlark, and bobolink. Songbirds that also use old field communities in the Facility area include eastern bluebird, goldfinch, field sparrow, horned lark, and red-winged blackbird.

Reptiles that would utilize this plant community type include several garter snake species, eastern hognose snake, black rat snake, and blue racer.

3.3.2 Scrub-Shrub

The scrub-shrub community type comprises approximately 0.48% of the ¼ mile buffer area. This community type is an intermediate successional stage between old field and forest. The scrub shrub community is dominated by upland shrubs and small trees; common species include green ash (*Fraxinus pensylvanica),* maples *(Acer* spp.), hackberry *(Celtis occidentalis),* raspberry and/or blackberry *(Rubus* spp.), multiflora rose (*Rosa multiflora)*, and honeysuckles

(*Lonicera* spp). The scrub-shrub type can occur on flat to sloping terrain, but usually does not occur on steep slopes. Where scrub-shrub communities are in an advanced stage of ecological succession (i.e., recovery from disturbance), they approach and merge into the Young Woods community type.

Scrub-shrub plant communities provide habitat and foraging for numerous animal species. Mammals that would most likely utilize the scrub-shrub plant community include white tailed deer, red fox, coyote, groundhog, striped skunk, eastern cottontail rabbit, field mouse, and meadow vole.

A variety of songbird species utilize scrub-shrub communities for nesting and rearing young including indigo bunting, dark-eyed junco, robin, eastern towhee, tree sparrow and other sparrow species, mourning dove, cardinal and kingbird.

Reptiles are typically not found in scrub-shrub areas, but a few snake species could inhabit these areas including several garter snake species and eastern hognose snake.

3.3.3 Young Woods

This community type (including the Young Woods/Scrub Shrub type) comprises approximately 0.83% of the ¼ mile buffer area. Young woods are dominated by small trees and may have a dense shrub layer. Common species include maples, green ash, oaks *(Quercus* spp.), hickories (*Carya* spp.), hackberry*,* poplars *(Populus* spp.), beech (*Fagus grandifolia)*, cherry species (*Prunus* spp.) and species found in scrub-shrub areas. Young woods may occur on any terrain within the Project Area.

Young woods are utilized by numerous mammal species. Some of the mammal species that may be found in young woods within the project area include white tailed deer, red fox, gray fox, coyote, raccoon, opossum, fox squirrel, and eastern chipmunk. In addition, several bat species may utilize young woods for foraging or as travel corridors, particularly when wetlands or streams are also present in the woods or in the immediate vicinity.

Bird species that would be expected in young woods in the project area include numerous raptor species, scarlet tanager, Baltimore oriole, black-capped chickadee, vireos, blue jay, and a variety of woodpecker species.

3.3.4 Upland Ridge

This wooded community type occurs on steeply sloped ridges that are inaccessible for agricultural purposes and comprises approximately 0.35% of the ¼ mile buffer area. Typically comprised of upland forest, species found here include black cherry (*Prunus serotina*), catalpa (*Catalpa speciosa*), sugar maple (*Acer saccharum*), hackberry, white oak (*Quercus alba*), red oak (*Q. rubra*), sycamore (*Platanus occidentalis*), and green ash in the canopy, hop hornbeam (*Carpinus caroliniana*), paw paw (*Asimina triloba*), honeysuckles, and blackberries in the shrub layer. Species observed in the herb layer include *Geum* sp., *Aster* sp., and garlic mustard (*Alliaria petiolata*), and may also include a diverse herbaceous spring flora.

Mammals that would most likely utilize this plant community include white-tailed deer, opossum, eastern cottontail rabbit, fox squirrel, and eastern chipmunk.

Many raptor species including, red-tailed hawk, turkey vulture, and numerous owl species utilize upland ridge communities for hunting or scavenging and nesting.

Reptilian species that are most likely present in upland ridge in the Facility area include eastern box turtle, eastern hognose snake, and several garter snake species.

3.3.5 Upland Woods

This community type comprises approximately 6.00% of the ¼ mile buffer area, and occurs on flat to gently sloping terrain on well-drained soils. Species typically observed within the canopy of this community type include honey locust (*Gleditsia triacanthos*), white oak, shagbark hickory (*Carya ovata*), green ash, ironwood (*Ostrya virginiana*), American elm (*Ulmus americana*), black cherry, cottonwood (*Populus deltoides*), tupelo (*Nyssa sylvatica*), white ash (*Fraxinus americana*), osage orange (*Maclura pomifera*), burr oak (*Quercus macrocarpa*), sugar maple, red oak, and post oak (*Q. stellata*), while the shrub layer is dominated by honeysuckle shrubs.

In some locations, the upland woods community type either includes significant stands of or is dominated by pine (*Pinus* spp), particularly red pine (*P. resinosa*) and eastern white pine (*P. strobus*). Figures 2 through 18 map these communities as ‘Upland Woods with Pine’.

Many of the same animal species listed under the young woods community type would also occur in upland woods communities including white tailed deer, red fox, gray fox, coyote,

raccoon, opossum, fox squirrel, and eastern chipmunk. In addition, several bat species may utilize upland woods for foraging or as travel corridors, particularly when wetlands or streams in the immediate vicinity.

Bird species that would be expected in upland woods within the project area include numerous raptor species, scarlet tanager, Baltimore oriole, black-capped chickadee, vireos, blue jay, and a variety of woodpecker species. In addition, several bat species may utilize young woods for foraging or as travel corridors, particularly when wetlands or streams are also present in the woods or in the immediate vicinity.

Reptilian species that are most likely present in upland woods in the Facility area include eastern box turtle, eastern hognose snake, and several garter snake species.

3.3.7 Riparian Woods

Riparian woods occur along streams and creeks and within floodplains, and comprise approximately 1.88% of the ¼ mile buffer area. Riparian woods typically occur on moderately well-drained alluvial soils, but this community type can also include wetland areas in depressions. Species typically observed within the canopy include black cherry, honey locust, box elder (*Acer negundo*), green ash, American elm, cottonwood, burr oak, osage orange, red maple (*Acer rubrum*), swamp white oak (*Quercus bicolor*), red oak, tupelo, mockernut hickory (*Carya tomentosa*), Ohio buckeye (*Aesculus glabra*), and hackberry. Species within the shrub layer include honeysuckles, hawthorne (*Crataegus* spp.), spicebush (*Lindera benzoin*), and multiflora rose.

Riparian woods are utilized by numerous mammal species including raccoon, muskrat, mink, long-tailed weasel, and beaver. In addition, several bat species may utilize riparian woods particularly because riparian woods occur along streams which are a major travel corridor for bats.

Bird species that would be expected in riparian woods in the project area include numerous raptor species, gold finch, nuthatch, cedar waxwing and a variety of woodpecker species.

3.3.8 Forested Wetlands

Forested wetlands are areas that made up a portion of the ¼ mile buffer area and were recorded on the U.S. Fish and Wildlife's National Wetland Inventory mapping, but did not fall within 100 feet of a facility feature, and therefore were not delineated. This community type comprised approximately 0.09% of the ¼ mile buffer area. The soils in this community consist of silty and clayey alluvial materials and they are subject to annual flooding. Common species often include cottonwood, silver maple (*Acer saccharinum*), sycamore, buttonbush (*Cephalanthus occidentalis*, and green ash.

Animal species expected within the forested wetlands community are similar to those described for the riparian woods community including raccoon, muskrat, mink, long-tailed weasel, beaver, numerous species of raptors, bats, woodpeckers, and owls.

Mammal species that would utilize all four wooded plant community types (Upland Ridge, Upland Woods, Riparian Woods, and Forested Wetlands) include white tailed deer, eastern fox squirrel, gray squirrel, raccoon, opossum, red squirrel and eastern chipmunk. In addition, several bat species may utilize these wooded communities for roosting, foraging or as travel corridors, particularly when wetlands or streams are also present in the woods or in the immediate vicinity.

Bird species that would utilize the three wooded plant community types include various warbler species, wood thrush, hermit thrush, numerous woodpecker species, nuthatches, screech owl, barred owl, great-horned owl, whip-poor-will, eastern wild turkey and various hawk species.

4.0 THREATENED AND ENDANGERED (T & E) SPECIES EVALUATION

Champaign Wind LLC's consultant team screened the entire Facility for major species of biota, including those of commercial or recreational value and species designated as threatened or endangered by the US Fish and Wildlife Service (USFWS) or the Ohio Department of Natural Resources (ODNR). This screening was performed using a desktop review.

4.1 Screening of Listed Threatened and Endangered Species

Champaign Wind LLC initiated a review of records on file at the Ohio DNR, Division of Natural Areas and Preserves, and at the USFWS Ecological Services Office to determine if any records exist of State or federally listed threatened, endangered or species of other statuses (T & E species) occurring within the Project Area.

The Ohio DNR responded that records of two state-listed threatened fish species, the Lake Chubsucker (*Erimyzon sucetta*) and the Tongue-tied Minnow (*Exoglossum laurae*), and one potentially threatened plant species, Flat-stemmed Pondweed (*Potamogeton zosteriformis*), occur in an area northeast of Urbana. However, none of these species occur within ¼ mile of the Facility. The Ohio DNR stated that it has not surveyed all areas of the State, and additional state-listed T & E species may occur within the Project Area.

The USFWS responded that the Project Area is within the range of the Indiana bat (*Myotis sodalis*; endangered species), the rayed bean mussel (*Villosa fabalis*; endangered species), the clubshell (*Pleurobema clava;* endangered species), and the eastern massasauga rattlesnake (*Sistrurus catenatus catenatus*; candidate species). The status of the Indiana bat with respect to Facility construction and operation has been evaluated and reported separately to the USFWS. Champaign Wind LLC is developing a habitat conservation plan in order to obtain an incidental take permit from the USFWS for potential impacts to the Indiana bat.

The rayed bean mussel occurs in the Little Darby Creek and may also occur in perennial streams tributary to the Little Darby Creek in Champaign County. The rayed bean mussel has the potential to occur in the vicinity of the Project Area, and the USFWS recommends that surveys for the presence of the rayed bean mussel be conducted where the Facility will directly or indirectly affect habitat types known to support this species. Habitat with the potential to support rayed bean mussel was encountered during field review at one stream crossing

location, Stream BB-2, Treacle Creek. A presence/absence mussel survey was conducted at this stream crossing. A few shells of common mussel species were found, but no live mussels or fresh dead shells were observed during this field investigation.

The USFWS concluded that the proposed project should not impact the eastern Massasauga or its habitat, but recommended further consultation should additional information on listed species or critical habitats become available, or if new information reveals effects of the Facility that were not previously considered. A field investigation conducted with USFWS staff examined three areas for potential eastern Massasauga habitat. These potential habitat areas were identified from secondary sources by Stantec and then visited in October 2011 to determine current conditions. One of the three areas, which is depicted on Figure 9 (Grid C2) west of Ludlow Road, was determined to have necessary habitat characteristics to support the eastern Massasauga. This area is not within the Project Area, and therefore Facility-related impacts are not anticipated.

Although there are very few records of state-listed species in the vicinity of the Project Area, the Ohio DNR has not surveyed all areas of the State and additional state-listed species may occur within the Project Area. Therefore, Hull compiled a list of state-listed plant and animal species with potential to occur within the Project Area to supplement those species listed for the area on state and federal lists.

To compile the list of State-listed plant and animal species with potential to occur within the Project Area, Hull first extended a 5-mile buffer around the proposed Facility. The 5-mile buffer area includes portions of Champaign County, Logan County, Clark County, Madison County, and Union County, Ohio. Champaign Wind LLC's consultant team then obtained the state species lists for these five counties from Ohio DNR, and lists of aquatic animal species that occur within the Big Darby Creek Watershed from the Darby Creek Association. Big Darby Creek is a unique, high-quality aquatic resource with special protections implemented by the State of Ohio. Please note that the Ohio EPA considers the Little Darby Creek watershed to be part of the Big Darby Watershed.

Within the five counties, there are records of 92 state-listed plant species and 30 state-listed animal species (Tables 4 and 5, respectively). The Big Darby Creek Watershed includes an additional 10 state-listed fish species and an additional 11 state-listed mussel species. Tables 4

and 5 indicate Latin name, common name, general habitat type and specific habitat requirements, the Ohio counties or watershed within which the species is listed, and its state and federal listing status. Of the 92 listed plant species in the five counties adjacent to the Project Area, the prairie fringed orchid (*Platanthera leucophaea*) is also federally listed (threatened). Of the 30 state-listed animal species in the five counties adjacent to the Project Area, four animal species are federally listed as endangered: the northern riffleshell mussel (*Epioblasma torulosa rangiana*), the Indiana bat (*Myotis sodalis)*, the clubshell mussel (*Pleurobema clava*), and the Scioto madtom (*Noturus trautmani*), and one animal species, the rayed bean (*Villosa fabalis*) is a candidate species.

Based on the results of the surface water evaluation study (Section 2.0), and the ecological communities evaluation (Section 3.0), Hull determined that certain generalized habitat types occur within the Project Area, including: agricultural fields, old fields, dry, mesic and wet forest, floodplain forest, open wooded slopes, small streams and marshes. Additional habitat types that have not been observed but which could occur within the Project Area include remnant prairie vegetation and fen or seep wetlands.

Using the range of known and possible habitat types within the Project Area, Hull then prepared a listing of state- and federally-listed plant and animal species with the highest potential to occur within the Project Area, together with their general and specific habitat requirements (Table 6). Threatened and endangered species specifically requiring stream or emergent wetland habitat are excluded from Table 6, as the large degree of design flexibility inherent in the project is likely to allow avoidance of these habitat types. In addition, the consultant's botanical, ecological and topographical field review and GIS screening of the Facility area did not reveal the presence of dry prairies, prairie remnants, or fen or seep wetlands, and so species requiring these habitats have also been eliminated from Table 6.

Based on the habitat types expected within the Facility area, 24 listed plant species and 5 listed animal species may occur within the Project Area (Table 6). These species and their habitats were the focus of field survey conducted in conjunction with the surface water delineation activities in 2011. The 2011 survey included inspection by qualified experts (including a botanist and a wildlife expert) for the species listed in Table 6 at proposed turbine locations, along the proposed route of access roads, buried interconnections and crane paths, and at construction staging areas.

4.2 Species of Commercial or Recreational Value

Animal species of commercial value are present in the Project Area and within ¼ mile of the Facility. Ohio DNR regulates the hunting and trapping of furbearers in Champaign County, including muskrat, raccoon, red fox, gray fox, coyote, mink, opossum, striped skunk, weasel, and beaver. Given the remoteness of the Project Area from urbanized areas, it is possible that hunting, trapping and predator calling occur, and that furbearing animals are harvested and sold as regulations permit; however this type of commercial activity is probably very limited in this area.

Stands of mature forest located within ¼ mile of the Facility could yield commercial-grade lumber. Based on observation of young, even-aged forest stands in eastern Champaign County; commercial harvesting of trees is assumed to occur to a very limited degree.

The area within ¼ mile of the proposed Facility contains habitats suitable for species of recreational value. Woodland and scrub shrub areas within the Project Area support populations of white-tail deer, ringneck pheasant, and wild turkey, all of which were directly observed in the field. These habitats are used by hunters during hunting season. The average diversity of birds expected within ¼ mile of the Facility is unlikely to attract more than a few avocational birdwatchers. With the exception of a few larger streams with deeper pools including Dugan Run and the East Fork of Buck Creek, the streams within ¼ mile of the proposed Facility are too small to be of value for recreational fishing.

5.0 ASSESSMENT OF ECOLOGICAL IMPACTS DUE TO PROJECT CONSTRUCTION

Based on the Surface Water Evaluation (Section 2.0), the Ecological Communities Evaluation (Section 3.0), and the Threatened and Endangered Species Evaluation (Section 4.0), Champaign Wind LLC expects that unavoidable impacts to surface waters, terrestrial habitats and major species due to facility construction will be minimal throughout the entire Project Area. Anticipated impacts throughout the Facility have been minimized and avoided through redesign of the Facility layout. This avoidance and minimization process reflects close interaction between Champaign Wind LLC, its project design consultant, and its ecological survey consultants.

Minimal impacts to surface waters and aquatic ecology could include temporary water flow, substrate or plant community disturbance in surface waters resulting from the burial of electrical cables. Limited permanent impacts to surface waters will result if construction of culverted road crossings proves necessary. The types of impacts to terrestrial habitats and major species that could occur as a result of installation of electrical interconnections include tree cutting, creation of high-light openings within forest areas, possible removal of listed plant species or displacement of listed animal species, forest habitat fragmentation, and disturbance of intact plant communities resulting in an increase in invasive plant species.

Because the wind turbines and their associated construction work areas will all be located in currently or recently active row-crop agricultural fields, surface water and ecological impacts will be negligible at the turbine locations. The greatest potential for surface water and ecological impacts will be in the construction of turbine access roads and installation of buried electrical interconnections among the turbines. Surface water impacts could include a small number of stream crossings for turbine access roads. In some cases it will be possible to utilize existing stream crossings constructed for farm equipment, although some improvements may be necessary to accommodate turbine component delivery. In other cases, impacts to surface waters may be avoided by installation of a span above the ordinary high water mark of a stream. Installation of buried electrical line crossings of streams or wetlands could potentially result in surface water impacts, however, such impacts would be temporary only. If feasible, these impacts may be avoided via directional boring or by carrying the electrical line across a stream on a span installed above ordinary high water.

Relative to other energy development projects, the proposed project has a high degree of flexibility to avoid and minimize environmental impacts. Because of this inherent flexibility, significant project impacts on surface waters, terrestrial ecology or listed species are not anticipated. If impacts in fact occur, effective techniques are available for mitigation of unavoidable impacts to surface waters and potentially sensitive habitats.

5.1 Impact Assessment for Construction of the Facility

The assessment of ecological impacts due to construction of the Facility is detailed in the following sections.

5.1.1 Impacts to Wetlands

Table 7 includes specifications for all delineated and estimated wetlands in close proximity to the Facility. Champaign Wind LLC has determined that, through implementation of avoidance techniques, none of these wetlands will be directly impacted by construction of the Facility. However, some of the wetlands are close enough to planned Facility elements that specific avoidance steps should be taken during construction. These steps may include prominently flagging or temporarily fencing the wetland edges prior to construction, and proper implementation of a Storm Water Pollution Prevention Plan, and associated Sediment and Erosion Control Measures.

5.1.2 Impacts to Streams

Table 8 includes specifications for all streams occurring in close proximity to the Facility, including those that must be crossed by turbine access roads, interconnects, and crane paths. Champaign Wind LLC has determined that for all identified stream crossing points, effective construction techniques will be used to avoid and minimize stream impacts that will require CWA Section 404 and 401 permits to the extent practicable. For example, existing stream crossings will be used whenever possible. These existing crossings may need to be temporarily strengthened via placement of a steel plate to allow crossing by heavy equipment (e.g., cranes) and turbine components. After construction, the steel plate will be removed, and maintenance vehicles will use the existing crossing without modification. In situations where there is no existing crossing, a permanent bridge span may be placed above the ordinary high water mark and designed so as not to require a CWA permit. In other cases, new permanent stream crossings may be installed that will require CWA permitting.

5.1.3 Impacts to Major Species

During field surveys conducted for the Surface Water Evaluation (Section 2.0), ecological communities encountered within proposed construction areas were identified (see Section 3.0) and examined for the presence of species of commercial or recreational value and for listed threatened or endangered species. Access road locations were carefully selected by the Facility designer to follow existing farm lanes or active farm fields wherever possible. Where new access roads are to be constructed, wherever possible these roads are routed at the edges of active agricultural fields to minimize the fragmenting of farm fields. New access roads do not cross ecological communities with the exception of old-fields and scrub-shrub communities. Ecological impact resulting from access road construction in these community types is expected to be minimal.

The impact of Facility construction on species of recreational value is expected to be minimal. Scrub-shrub and old-field communities are important to a variety of vertebrate species; however, impacts from road construction will be narrowly confined to a linear corridor and will not adversely affect usage of these habitats.

No listed threatened or endangered species were found within the Facility, staging areas, or temporary crane paths, therefore impacts are not anticipated.

5.1.4 Mitigation

Compensatory mitigation is generally required to offset permanent impacts to surface waters, although mitigation is not typically required for temporary impacts. Mitigation may be required for permanent stream impacts that occur as a result of constructing the Buckeye II Wind Farm. All proposed stream impacts, including those resulting from construction of crossings for access roads, interconnects and crane paths, may be covered by one or more USACE Nationwide Permits (NWPs). Applicable NWPs (e.g. NWP 12) for this project do not require submittal of notification to the USACE if impacts to surface waters do not exceed 1/10 acre, and certain other requirements are met. For example, temporary construction, access, and dewatering in perennial streams require notification to the USACE. As another example, any proposed impact to the Little Darby Creek requires notification. When notification is not required, mitigation is also not required. When temporary impacts occur, the stream channel and banks must be restored to permit specifications. All construction activities in streams must be conducted in compliance with the general and regional specific federal conditions of the NWPs, and also in

compliance with applicable general and specific conditions of the Section 401 Water Quality Certification. These permit conditions generally specify best management practices that must be employed in order to minimize impacts, including placement of sediment and erosion control measures and working during low flow conditions.

Champaign Wind LLC anticipates that the stream impacts proposed for the Buckeye II Wind Farm will be permitted under the new activity-specific Nationwide Permit for Land-Based Renewable Energy Generation Facilities which will be released with the new 2012-2017 Nationwide Permits on March 19, 2012. The general and specific conditions of this new permit have not yet been released, but they are expected to be similar to those of existing permits.

Mitigation of impacts to riparian areas is also required by Ohio EPA's General NPDES Permit for Storm Water Associated with Construction Activity in the Big Darby Creek Watershed (which is more fully discussed in the next Section). This permit specifies zones of riparian impact around streams of varying watershed size and meander belt width, and the types of mitigation that must be conducted if vegetation is cleared within these zones. Depending upon the type and degree of impact and the zone in which it occurs, mitigation may consist of in-stream restoration, riparian zone vegetation restoration, and riparian protection through binding easements or environmental covenants.

6.0 POTENTIALLY APPLICABLE ENVIRONMENTAL REGULATORY PROGRAMS

Based on the potential construction impacts of the proposed Buckeye II Wind Farm, environmental regulatory authority over various portions of the project may include:

- The Federal Clean Water Act (Sections 401, 402 and 404);
- The Ohio Isolated Wetland Permitting Program;
- The Ohio Water Quality Standards program; and
- The Federal Endangered Species Act.

The following is a list of regulatory programs, the lead agency for each program, and contact information within the program office.

Regulatory Program	Lead Agency	Description	Contact	Address	Phone
Clean Water Act, Section 404	US Army Corps of Engineers,	Regulates the discharge of dredged and fill material into waters of the US	Chief of North Regulatory Section	US Army Corps Of Engineers, Louisville District, ATTN: CELRL-OP-F, Room 822-A, 600 Dr. Martin Luther King Jr. Place, Louisville, KY, 40202	(502) 315-6678
Clean Water Act, Section 401	Ohio Environmental Protection Agency	Issues Water Quality Certifications, certifying that proposed federal projects are in compliance with Ohio's Water Quaity Standards	Manager, Section 401 and Wetlands Unit	Ohio EPA, Division of Surface Water, 50 W. Town St., Suite 700, Columbus, Ohio 43215	(614) 644-2001
Clean Water Act, Section 402	Ohio Environmental Protection Agency	Regulates the discharge of pollutants to surface waters, including stormwater discharges, under the NPDES program	Manager, Permits Section	Ohio EPA, Division of Surface Water, 50 W. Town St., Suite 700, Columbus, Ohio 43215	(614) 644-2001
Ohio Isolated Wetland Permitting Program	Ohio Environmental Protection Agency	Regulates the discharge of fill material into isolated wetlands in Ohio	Manager, Section 401 and Wetlands Unit	Ohio EPA, Division of Surface Water, 50 W. Town St., Suite 700, Columbus, Ohio 43215	(614) 644-2001
Ohio Water Quality Standards Program	Ohio Environmental Protection Agency	Oversees the development of surface water quality standards used in the regulation of proposed impacts to surface waters	Manager, Water Quality Standards program	Ohio EPA, Division of Surface Water, 50 W. Town St., Suite 700, Columbus, Ohio 43215	(614) 644-2001
Endangered Species Act	Department of the Interior, US Fish and Wildlife Service	Maintains lists of federally endangered and threatened species; reviews proposed projects for consistency with the Act	Manager, Ecological Services Office	6950 Americana Pkwy, Suite H, Reynoldsburg, OH 43068-4127	(614) 469-6923

6.1 Federal Regulatory Program Applicability to the Buckeye II Wind Farm

The overall goal of the federal Clean Water Act (CWA) is to restore and protect the physical, chemical and biological integrity of the nation's waters. The sections of the CWA with most relevance for wind turbine projects are Section 404 (permits for the discharge of dredged and fill material to surface waters), Section 401 (Water Quality Certifications), and Section 402 (National Pollution Discharge Elimination System permits).

Section 404 of the Clean Water Act regulates the discharge of dredged or fill material into surface waters of the US, including wetlands. The US Army Corps of Engineers (USACE) is responsible for administration of Section 404. As the lead federal agency in issuing Section 404 permits, the USACE is responsible for meeting the requirements of the National Environmental Policy Act (NEPA) for each permit issued. In complying with NEPA, the USACE consults with other federal agencies in determining the overall impact to the environment of each proposed permit. Typically, the USACE consults with the US Fish and Wildlife Service (US FWS) to determine the potential for impacts to species protected by the federal Endangered Species Act, the Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act. Although the USACE has reviewed and permitted several wind turbine facilities nationwide, no activity-specific guidelines or permitting processes specific to wind turbines have been released as of the date of this report. However a new activity-specific Nationwide Permit for Land-Based Renewable Energy Generation Facilities has been proposed, and it will be released with the new 2012-2017 Nationwide Permits on March 19, 2012. This permit is expected to have similar limits on impacts to the limits in other Nationwide Permits (e.g., ½ acre of wetland impact, 300 feet of stream impact). The biggest change to the surface water regulatory process for wind farms is that a Preconstruction Notification (PCN) will be required for all activities, whereas under the 2007-2012 Nationwide Permits a PCN was not required for impacts to wetlands or streams under 1/10 acre.

The USACE also consults with the state agency responsible for administration of the National Historic Preservation Act, which is usually the State Historic Preservation Office (SHPO), to determine the potential for a proposed permit to impact cultural and historic resources. Champaign Wind LLC is preparing a separate Study Plan to address archaeological, historical, and cultural concerns within the Project Area and coordinating the study with the Ohio Historic Preservation Office.

Section 401 of the CWA establishes the Water Quality Certification program, which is administered in Ohio by the State water quality regulatory agency (Ohio Environmental Protection Agency). The State agency reviews proposed Section 404 permits and other federal permits for compliance with State Water Quality Standards (see State programs below), and may issue or deny certification of the permit. Section 404 permits are not validated until a water quality certification has been issued.

Champaign Wind LLC has made a strenuous effort to avoid federally regulable surface water impacts from discharge of fill material via rerouting access roads, repositioning turbines, and other approaches, and is exploring methods for crossing streams during construction that do not involve any impacts to streams, including using large steel plates as temporary spans. These avoidance efforts notwithstanding, a limited amount of permanent and temporary surface water impact from discharge of fill material is unavoidable during construction of this project. It appears that all proposed surface water impacts can be covered under a Clean Water Act Section 404 general permit (e.g., the Nationwide Permit program) and that individual Section 404 and 401 permits will not be necessary.

Section 402 of the CWA establishes the National Pollution Discharge Elimination System (NPDES). Section 402 is typically administered by the State water quality regulatory agency. Permits are required for discharging pollutants to surface waters. Relevant permitting programs for the proposed wind turbine project include construction stormwater permitting. Construction projects which will disturb more than one acre of ground are required to notify the Ohio EPA and develop, implement and maintain an acceptable Storm Water Pollution Prevention Plan (SWPPP) for the project.

Champaign Wind LLC anticipates full compliance with Ohio EPA's General Permit for Storm Water Discharges Associated with Construction Activities ('Construction Activities'; NPDES Permit #OHC000003) and Ohio EPA's General Permit for Storm Water Associated with Construction Activity in the Big Darby Creek Watershed ('Construction Activities in the Big Darby Watershed'; NPDES Permit No. OHCD00001).

These two General Permits have differing notification requirements with which Champaign Wind LLC will comply. Champaign Wind LLC anticipates that the NOI and associated fee for the Construction Activities General Permit will be filed at least 21 days prior to commencement of

construction activities. Under the Construction Activities in the Big Darby Watershed General Permit, Champaign Wind LLC anticipates that the NOI, an approvable SWPPP and the associated fee will be filed at least 45 days prior to commencement of construction activities.

Champaign Wind LLC expects aquatic discharge from clearing and construction of the Facility to be limited to surface runoff generated by precipitation. Potential entrainment of silt via contact of direct precipitation or surface runoff with exposed soil will be minimized by following an appropriate re-vegetation plan. In addition, the quantity of entrained silt leaving the Facility will be minimized via implementation of containment practices including installation of silt fencing. Silt fencing and other sedimentation and erosion control practices will be designed and constructed in compliance with the Ohio Department of Natural Resources' Rainwater and Land Development Manual (2006).

6.2 Ohio State Laws and Regulations

The Ohio Isolated Wetland Permitting Program (OIWPP) was established in 2001 after a US Supreme Court decision (SWANCC vs. the Army) resulted in elimination of the USACE's Section 404 jurisdiction over isolated waters including wetlands. The OIWPP was implemented to regulate proposed impacts to isolated wetlands, and roughly parallels the permitting structure and review and mitigation requirements of the USACE's Section 404 program.

Ohio's water quality standards program is comprehensive, and is arguably the most advanced program of its type in the country. Chemical and biological criteria are established for all surface waters of the state, and the standards include tiered Aquatic Life Use designations and an anti-degradation policy. The water quality standards are developed and administered by the Ohio Environmental Protection Agency (Ohio EPA) and implemented under the state's authority to administer the Section 401 water quality certification program and the Section 402 NPDES program, and may also be implemented and enforced directly by the director of Ohio EPA.

The Ohio Department of Natural Resources (ODNR), among its other responsibilities, is the agency responsible for coordinating the protection of game and non-game wildlife species and rare plant and animal species in Ohio. The ODNR Division of Wildlife has the authority to adopt rules restricting the taking or possession of native wildlife threatened with statewide extirpation and to develop and periodically update a list of endangered species (Ohio Revised Code

1531.25). Protection of endangered non-game wildlife can be triggered through federal or state permitting or review processes, or through the police powers of Division of Wildlife officers.

The Ohio DNR Division of Natural Areas and Preserves maintains a state listing of rare plant species. Rare plant species are protected largely through coordination efforts triggered by federal or state permitting or review processes.

The Ohio lists of endangered and threatened animal and plant species is considerably more extensive than the federal list for Ohio, in part reflecting the relative rarity of species that are near the edge of their natural ranges which tend to extend well outside Ohio's borders.

6.3 Other Relevant Regulatory Programs

If a project meets or exceeds 5 megawatts (MW) in installed capacity, the Ohio Power Siting Board (OPSB) has jurisdiction over the siting and installation of the facility. Although individual wind turbines of the type proposed for the Buckeye II Wind Farm typically generate 1.8 to 2.5 MW, in aggregate their output will exceed the minimum threshold necessary for OPSB jurisdiction. OPSB has stated that they will assert jurisdiction over the proposed wind turbine Facility.

7.0 REPORT LIMITATIONS

The conclusions presented herein are based on the level of effort and investigative techniques defined under the Scope of Work. Hull & Associates, Inc. has conducted this investigation in a manner consistent with published guidance, sound ecological practices, and best professional judgment. No other warranty or guarantee, expressed or implied, is made. This report does not attempt to evaluate past or present compliance with Federal, State and Local environmental or land use laws and regulations. Furthermore, Hull & Associates, Inc. makes no guarantees regarding the completeness or accuracy of any information obtained in review of public or private files or previous investigations at the Facility not conducted by Hull & Associates, Inc. The results of the surface water delineation and the surface water evaluation are subject to verification by the USACE and Ohio EPA, respectively.

8.0 REFERENCES

Cowardin, L.M., V. Carter, F.C. Golet and E.T. LaRoe, 1979. Classification of Wetlands and Deepwater Habitats of the United States, US Department of the Interior, Fish and Wildlife Service, BSP, Washington DC, 103p.

Environmental Laboratory, 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, US Army Engineer Waterways Experiment Station, Vicksburg Miss.

Mack, John J. 2001. Ohio Rapid Assessment Method for Wetlands v. 5.0, User's Manual and Scoring Forms. Ohio EPA Technical Report WET/2001-1. Ohio Environmental Protection Agency, Division of Surface Water, 401/Wetland Ecology Unit, Columbus, Ohio.

Ohio Environmental Protection Agency, Division of Surface Water, 2006. Methods for Assessing Habitats in Flowing Waters: Using the Qualitative Habitat Evaluation Index (QHEI). Columbus, Ohio.

Ohio Environmental Protection Agency, Division of Surface Water, 2002. Field Evaluation Manual for Ohio's Primary Headwater Habitat Streams. Columbus, Ohio.

Reed, P.B. 1988. National List of Plant Species that Occur in Wetlands: Northeast (Region 1), Fish and Wildlife Service, US Department of the Interior Washington, DC 20240.

U.S. Army Corps of Engineers, 1999. Standard Operating Procedures for the Regulatory Program.

U.S. Army Corps of Engineers. 2009. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region, ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-08-27. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

US Environmental Protection Agency and US Army Corps of Engineers. 2007. Memo entitled: Clean Water Act Jurisdiction following the US Supreme Court's Decision in Rapanos v. United States and Carabell v. United States. December 2, 2008.

TABLES

BUCKEYE II WIND FARM

TABLE 1

SUMMARY OF WETLAND DATA

Wetland ID	Sample Point	Map Grid No.	Figure No.	Nearest Turbine No.	Mapped Hydric Soil	Cowardin Classification	NWI Mapped As:	Hydric Soils Present?	Hydrology Present?	Hydrophytic Plant Community Present?	Wetland Present?	Wetland Size (ac)[§]	Size Method	ORAM Score[†]	ORAM Category[†]	Isolation status[§]	Photo No.
J	SP4	C4	11	84	no	PEM	PEMA	yes	yes	yes	yes	0.74	GPS/GIS	7.5	1	Isolated	71
M	SP32	C4	11	115	yes	PEM	none	yes	yes	yes	yes	0.19	GPS/GIS	11	1	Isolated	72
N	SP33	B4	6	72	yes	PEM	none	yes	yes	yes	yes	0.017	GPS/GIS	14	1	Non-isolated	73
T	SP43	C4	11	90	yes	PEM	PEM1C	yes	yes	yes	yes	0.2	GPS/GIS	14	1	Isolated	74
U	SP44	D4	17	90	yes	PEM	none	yes	yes	yes	yes	0.07	GPS/GIS	20	1	Isolated	75
V	SP45	D4	17	132	no	PEM	PEM1A	yes	yes	yes	yes	~0.20**	GPS/GIS	25	1	Isolated	76
W	SP46	B4	6	73	yes	PEM	PEM1C	yes	yes	yes	yes	0.19	GPS/GIS	10	1	Isolated	77
Y	SP50	B3	5	81	yes	PEM/PSS/PFO	none	yes	yes	yes	yes	1.61	GPS/GIS	26	1	Non-isolated	78
Z	SP51	B3	5	81	yes	PEM/PSS	none	yes	yes	yes	yes	0.06	GPS/GIS	9	1	Non-isolated	79
AA	SP52	B3	5	82	yes	PEM/PSS	PSS1C	yes	yes	yes	yes	0.13	GPS/GIS	23.5	1	Non-isolated	80
BB	SP53	C3	10	83	yes	PEM/POW/PSS/PFO	PUBGh	yes	yes	yes	yes	0.65	GPS/GIS	36	Modified 2	Isolated	81
CC	SP54	C5	12	94	yes	PEM	none	yes	yes	yes	yes	0.13	GPS/GIS	17.5	1	Non-isolated	82
DD	SP55	C5	12	94	no	PFO/PEM	PSS1C	yes	yes	yes	yes	0.45	GPS/GIS	47	2	Isolated	83
EE	SP56	C5	12	96	yes	PEM	PEM1C	yes	yes	yes	yes	0.30	GPS/GIS	23	1	Non-isolated	84
FF	SP57	D4	17	88	yes	PEM	none	yes	yes	yes	yes	0.39	GPS/GIS	16.5	1	Non-isolated	85
GG	SP58	D3	16	89	yes	PEM/PSS	none	yes	yes	yes	yes	~0.30-3**	GPS/GIS	23	1	Non-isolated	86
HH	SP59	B3	5	107	no	PEM	none	yes	yes	yes	yes	0.04	GPS/GIS	34	Modified 2	Non-isolated	87
II	SP60	C3	10	108	yes	PEM	none	yes	yes	yes	yes	0.02	GPS/GIS	12	1	Isolated	88
JJ	SP62	B4	6	72	no	PEM	PEM1A	yes	yes	yes	yes	0.19	GPS/GIS	27	1	Non-isolated	89
KK	SP63	B5	7	100	yes	PFO/PSS	PFO1A/PSS1C	yes	yes	yes	yes	~0.30-3**	GPS/GIS	45	2	Non-isolated	90
LL	SP64	C4	11	71	no	PEM	none	yes	yes	yes	yes	0.13	GPS/GIS	38	Modified 2	Non-isolated	91
MM	SP65	C5	12	101	yes	PEM, PUB	PEM1C, PUBGx	yes	yes	yes	yes	~1.2-3.0**	GPS/GIS	32	2	Non-isolated	92
NN	SP66	C4	11	90	yes	PSS/PUB	PSS1C/PUBGh	yes	yes	yes	yes	~0.30-3**	GPS/GIS	28	1	Non-isolated	93

n/a = Not Applicable
ND = No Data Obtained
GPS = Global Positioning System
GIS = Global Information System
** = Wetland size estimated, wetland extended out of delineation area
[§]Subject to verification by US Army Corps of Engineers.
[†]Subject to verification by Ohio EPA.

BUCKEYE II WIND FARM

TABLE 2

SUMMARY OF STREAM DATA

Stream ID	Map Grid	Figure No.	Nearest Turbine	Watershed Size (mi^2)	HHEI Score†	QHEI Score†	Named Stream?	Existing Beneficial Use†	Flow Regime§	Photo No.	Existing Crossing?
D-2	B4	6	100	0.55	49	n/a	No	Modified Class II PHWH	Ephemeral	1-2	No
D-3	C4	11	71	1.59	n/a	65.5	No	WWH	Intermittent	3-4	No
D-4	C4	11	71	1.6	47	n/a	No	Class II PHWH	Intermittent	5-6	No
E	B2	4	133	2.73	37	44	Dugan Run	WWH	Intermittent	7-8	No
F	B5	7	126	0.24	74	n/a	No	Modified Class II PHWH	Perennial	9-10	No
J-2	C3	10	107	0.65	n/a	72	No	WWH	Intermittent	11-12	No
L	C5	12	78	1.95	46	51.5	Little Darby Creek	EWH and CWH	Intermittent	13	No
M	B5	7	127	0.07	27	n/a	No	Modified Class I PHWH	Ephemeral	14	No
O	D3, D4	15, 16	89	4.11	n/a	46.5	East Fork Buck Creek	CWH[1]	Perennial	15-16	No
S	B4	6	100	0.08	27	n/a	No	Modified Class I PHWH	Ephemeral	17-18	Yes
Y	C3/D3	15	118	5.56	n/a	47.5	Buck Creek	CWH[1]	Intermittent	19-20	No
Y-2	C3	10	118	3.51	n/a	25.5	Buck Creek	CWH[1]	Intermittent	21-22	No
Y-3	C3	10	112	1.87	n/a	22	Buck Creek	CWH[1]	Intermittent	23-24	No
Y-4	C3	10	112	1.85	n/a	33	Buck Creek	CWH[2]	Intermittent	25-26	No
AA-2	B3	5	106	0.1	13	n/a	Buck Creek	CWH[2]	Ephemeral	27-28	No
BB	B4	6	115	1.11	69	44	Treacle Creek	EWH	Intermittent	29	
BB-2	C5	12	93	7.14	n/a	73	Treacle Creek	EWH[1]	Perennial	30-31	Yes
BB-3	B4	6	74	0.15	61	n/a	Treacle Creek	EWH[1]	Intermittent	32-33	No
CC	D3	15	118	0.63	21	n/a	No	Modified Class I PHWH	Ephemeral	34	No
DD	C5	12	53	0.068	22	n/a	No	Modified Class I	Ephemeral	35	No
EE	D4	16	89	0.31	34	n/a	No	Modified Class II PHWH	Ephemeral	36	No
II	C3	10	119	0.04	25	n/a	No	Modified Class I PHWH	Ephemeral	37-38	No
JJ	C3	10	112	1.08	n/a	36.5	No	Modified WWH	Intermittent	39-40	Yes
MM	B5	7	129	0.13	29	n/a	No	Modified Class I PHWH	Ephemeral	41-42	No
NN	D4	17	132	0.51	46	n/a	No	Modified Class II PHWH	Ephemeral	43-44	No
OO	D3	16	118	0.69	36	n/a	No	Modified Class II PHWH	Ephemeral	45-46	No
PP	C4	11	80	0.05	15	n/a	No	Modified Class I PHWH	Ephemeral	47-48	Yes
QQ	B4	6	116	0.2	15	n/a	No	Modified Class I PHWH	Ephemeral	49-50	No
SS	C5	12	93	0.19	46	n/a	No	Modified Class II PHWH	Ephemeral	51-52	No
TT	C5	12	101	0.21	23	n/a	No	Modified Class I PHWH	Ephemeral	53-54	No
UU	C5	12	96	0.65	49	n/a	Jumping Run	EWH	Intermittent	55-56	No
VV	C5	12	94	0.04	9	n/a	No	Modified Class I PHWH	Ephemeral	57-58	Yes
WW	D5	18	78	0.42	42	n/a	No	Modified Class II PHWH	Ephemeral	59-60	No
XX	D5	18	78	0.01	38	n/a	No	Modified Class II PHWH	Ephemeral	61-62	No
YY	D5	18	114	0.27	8	n/a	No	Modified Class I PHWH	Ephemeral	63-64	No
ZZ	C4	11	84	0.24	43	n/a	No	Modified Class II PHWH	Ephemeral	65-66	No
ZZ-2	C4	11	99	0.1	29	n/a	No	Modified Class I PHWH	Ephemeral	67-68	No
AAA	D3	16	89	0.05	34	n/a	No	Modified Class II PHWH	Ephemeral	69-70	Yes

HHEI = Headwater Habitat Evaluation Index
HMFEI = Headwater Macroinvertebrate Field Evaluation Index
VES = Visual Encounter Survey
QHEI = Qualitative Habitat Evaluation Index
PHWH = Primary Headwater Habitat
CWH = Coldwater Habitat
EWH = Exceptional Warmwater Habitat
WWH = Warmwater Habitat
n/a = Not Applicable.
ND = No Data Obtained.
[1]Verified by the OEPA in 2005
[2] Recommended for Coldwater Habitat by OEPA in 2005.
§Subject to verification by US Army Corps of Engineers.
†Subject to verification by Ohio EPA.

BUCKEYE II WIND FARM

TABLE 3

PLANT COMMUNITIES WITHIN 1/4 MILE OF FACILITY

NLCD Plant Community Types Within Phase II 1/4		Total Buffer Area:
		662014490.73
Name	**Acres**	**Percentage of Buffer Area**
Old Field	155.27	1.02%
Scrub Shrub	73.21	0.48%
Young Woods	126.45	0.83%
Upland Ridge	53.12	0.35%
Upland Woods	912.00	6.00%
Forested Wetlands	14.17	0.09%
Riparian Woods	285.71	1.88%

TABLE 4
BUCKEYE II WIND FARM
LISTED PLANT SPECIES WITHIN FIVE COUNTIES ADJACENT TO PROJECT AREA

Scientific Name	Common Name	General Habitat	Specific Habitat Requirements[1]	Listed in (County)	Status in Ohio[2]	Federal Status[2]
Eriocaulon aquaticum	White-buttons	aquatic	Margins of lakes, shores, deep water	Logan	E	
Isoetes engelmannii	Appalachian Quillwort	aquatic	Open sun in shallow water	Clark	E	
Myriophyllum heterophyllum	Two-leaved Water-milfoil	aquatic	Calcareous waters	Logan, Union	E	
Myriophyllum sibiricum	American Water-milfoil	aquatic	Still, neutral to calcareous waters	Logan	T	
Potamogeton natans	Floating Pondweed	aquatic	In fairly shallow water	Logan	P	
Potamogeton zosteriformis	Flat-stemmed Pondweed	aquatic	Shallow to deep water	Champaign, Logan	P	
Sagittaria graminea	Grass-leaved Arrowhead	aquatic	Shallow water of ponds, marshes, ditches, and wet shores	Clark	E	
Hypnum pratense	Wrinkled-leaved Marsh Hypnum	bog	Moss often found growing with sphagnum	Clark	E	
Poa paludigena	Marsh Spear Grass	bog	Moist, open situations; often with Sphagnum or other mosses	Clark	P	
Pogonia ophioglossoides	Rose Pogonia	bog	Sphagum bogs; requires acidic substrates and constant water	Logan	T	
Betula pumila	Swamp Birch	bog/fen	Cinquefoil-Sedge Fen	Champaign, Logan	T	
Carex bebbii	Bebb's Sedge	bog/fen	Moist situations on sandy soil	Logan	P	
Deschampsia cespitosa	Tufted Hair Grass	bog/fen	Full sun, constant moisture, neutral-basic soils	Champaign, Clark, Logan	P	
Menyanthes trifoliata	Buckbean	bog/fen	Sphagum Bog	Logan	T	
Plagiothecium latebricola	Lurking Leskea	bog/fen	Swamps on decaying logs	Champaign	T	
Rhynchospora alba	White Beak-rush	bog/fen	Variety of wet, open situations; acidic or basic substrates	Champaign, Clark, Logan	P	
Tofieldia glutinosa	False Asphodel	bog/fen	Wet, open marly soil	Champaign, Clark, Logan	T	
Triglochin maritimum	Seaside Arrow-grass	bog/fen	Full sun, calcareous substrates	Champaign, Clark, Logan	T	
Utricularia intermedia	Flat-leaved Bladderwort	bog/fen	Floating or rooted in mud in quiet, shallow waters	Champaign, Clark, Logan	T	
Utricularia minor	Lesser Bladderwort	bog/fen	Floating or rooted in mud in quiet, shallow waters	Champaign	P	
Potentilla palustris	Marsh Five-finger	bog/swamp	Swamps, bogs, streambanks, wet meadows	Logan	T	
Verbesina helianthoides	Hairy Wingstem	dry open woodlands	Dry, open woodlands on sandy soil	Clark, Madison	P	
Calamintha arkansana	Limestone Savory	dry open areas	On calcareous soils; quarries, etc.	Clark	T	
Liatris squarrosa	Scaly Blazing-star	dry prairies	Dry prairies, poor soil on oak ridges	Madison	P	
Poa languida	Weak Spear Grass	dry prairies	Sun to semi-shade on neutral to basic substrates	Logan	P	
Spiranthes magnicamporum	Great Plains Ladies'-tresses	dry prairies	Dry, open areas with calcareous soils	Clark	P	
Viola pedatifida	Prairie Violet	dry prairies	Full sun, well-drained, calcareous soil	Clark, Madison	E	
Carex timida	Timid Sedge	dry to mesic woods/cedar	Cedar woodlands on limestone soils	Champaign	E	
Melica nitens	Three-flowered Melic	dry woods/prairies	Full sun to semi shade in rocky woods	Clark, Union	T	
Cacalia plantaginea	Fen Indian-plantain	fen	Restricted to fen in Ohio	Champaign, Clark	P	
Carex diandra	Lesser Panicled Sedge	fen	Wet, open; calcareous to neutral soils	Champaign, Clark, Logan	P	
Carex flava	Yellow Sedge	fen	Wet, open; calcareous to neutral soils	Champaign, Clark, Logan	P	
Carex lasiocarpa	Slender Sedge	fen	Wet, open; deeper water	Champaign, Clark, Logan	P	
Cuscuta glomerata	Glomerate Dodder	fen	Prairies and fens	Logan, Union	T	
Eleocharis quinqueflora	Few-flowered Spike-rush	fen	Wet, open; calcareous to neutral soils	Champaign, Clark	T	
Eriophorum viridicarinatum	Green Cotton-grass	fen	Open, moist; alkaline substrates	Champaign, Logan	P	
Gentianopsis procera	Small Fringed Gentian	fen	Fens, calcareous shores, marly sand	Champaign, Clark, Logan	P	
Juncus balticus	Baltic Rush	fen	Fens, dunes, beaches and wet ditches; calcareous soil	Champaign, Clark, Logan	P	
Melanthium virginicum	Bunchflower	fen	Restricted to fen in Ohio	Clark, Madison	T	
Prenanthes racemosa	Prairie Rattlesnake-root	fen	Fens, wet prairies and meadows	Champaign, Clark, Logan	T	
Salix candida	Hoary Willow	fen	Calcareous wetlands	Logan	T	
Salix myricoides	Blue-leaved Willow	fen	Open areas in fens, usually in marl or along streamlets	Champaign, Clark, Logan	P	
Triglochin palustre	Marsh Arrow-grass	fen	Open areas of calcareous wetlands	Champaign, Clark, Logan	P	
Utricularia cornuta	Horned Bladderwort	fen	Marl flats in fens	Champaign, Clark	E	
Valeriana ciliata	Prairie Valerian	fen	Low peaty hummocks, fens, wet prairies	Champaign, Logan	E	
Zigadenus elegans	White Wand-lily	fen	Open areas in fens, wet calcareous cliffs and shores	Champaign,Clark,Logan	P	
Platanthera leucophaea	Prairie Fringed Orchid	fen, marsh, old field	Full sun, neutral to calcareous soils	Clark	T	T
Desmodium glabellum	Hairy Tick-trefoil	floodplain forest	Moist-wet woods; shade	Clark	E	
Buxbaumia minakatae	Ethereal Elf Cap Moss	in swamps on logs	Swamps on decaying logs	Champaign	E	
Juglans cinerea	Butternut	mesic woods	Rich, moist soil in woods	Champaign	P	
Spiranthes ovalis	Lesser Ladies'-tresses	moist forest, field	Full to partial sun, moist, calcareous soils	Champaign	P	
Vitis cinerea	Pigeon Grape	moist woods, edges	Moist, open to semi-open situations	Madison	P	
Botrychium biternatum	Sparse-lobed Grape Fern	moist/shaded	Variety of moist, shaded situations	Clark	T	
Amelanchier sanguinea	Rock Serviceberry	open woods, slopes	Open woods on calcareous soil	Clark	E	
Thuja occidentalis	Arbor Vitae	open woods, slopes	Arbor vitae fen	Champaign, Clark	P	
Gentiana alba	Yellowish Gentian	prairie/damp woods	Mesic prairies, savannas, grassy meadows and damp woods	Union	T	
Lathyrus venosus	Wild Pea	prairie/open woods	Dry, sandy soil in upland woods	Union	E	
Panicum leibergii	Leiberg's Panic Grass	prairies	Neutral to slightly alkaline sandy loam	Clark, Madison	T	
Silene regia	Royal Catchfly	prairies	Prairie remnants, cemeteries, railroad, powerlines, & roadsides	Champaign,Clark,Madison,Union	T	
Sporobolus heterolepis	Prairie Dropseed	prairies	Dry to moist calcareous soils in full sun	Champaign,Clark,Madison	T	
Vernonia missurica	Missouri Ironweed	prairies	Mesic prairies and grassy roadsides in oak openings region	Clark	E	
Ranunculus fascicularis	Early Buttercup	prairies/dry woods	Calcareous soils of prairies, pastures, and dry, open woods	Clark	P	
Schoenoplectus smithii	Smith's Bulrush	shore/beach	Sandy or muddy shores, neutral substrates	Logan	E	
Salix petiolaris	Slender Willow	shore/stream	Moist soil along shores, wet marly meadows	Clark	T	
Armoracia lacustris	Lake Cress	shores/streams	Pond/river shores in full sun	Madison	T	
Carex aquatilis	Leafy Tussock Sedge	shores/streams	Esp. along lakes and streams	Logan	P	
Hypericum majus	Tall St. John's-wort	shores/streams	Sandy or mucky shores of lakes and streams	Champaign, Logan	P	
Zizania aquatica	Wild Rice	shores/streams	Full sun along streams	Union	T	
Anemone cylindrica	Prairie Thimbleweed	variety	Dry open woods, prairies, quarries, etc.	Clark	T	
Arabis hirsuta var. adpressipilis	Southern Hairy Rock Cress	variety	Diverse, including sand, cliffs, and open woods	Clark	P	
Baptisia lactea	Prairie False Indigo	variety	Wet to dry; open to shaded woods	Madison	P	
Carex bicknellii	Bicknell's Sedge	variety	Dry to moist situations; sandy soil	Madison	T	
Carex retroflexa	Reflexed Sedge	variety	Woods, slopes, dry fields; sandy or rocky soil	Madison	T	
Delphinium exaltatum	Tall Larkspur	variety	Full sun-part shade; calcareous soils	Clark, Logan	P	
Elymus trachycaulus	Bearded Wheat Grass	variety	Wide range of soils and climates	Champaign	T	
Rosa blanda	Smooth Rose	variety	Dry to moist, calcareous to circumneutral soils	Union	E	
Sphenopholis obtusata var. obtusata	Prairie Wedge Grass	variety	Moist to dry soil of open woods, prairies, old fields	Clark, Logan	T	
Helianthus mollis	Ashy Sunflower	variety open	Well-drained, sunny openings	Clark	T	
Nothoscordum bivalve	False Garlic	variety open	Moist openings in rocky or sandy soils	Clark	T	
Calopogon tuberosus	Grass-pink	wet	Full sun and constant water	Champaign, Logan	T	
Carex alata	Broad-winged Sedge	wet	Moist situations on neutral substrates	Logan	P	
Cypripedium parviflorum var. parviflorum	Small Yellow Lady's-slipper	wet	Wet situations on alkaline substrates	Champaign	E	
Eleocharis flavescens	Green Spike-rush	wet	Wet, open; deeper water	Champaign, Logan	T	
Iris brevicaulis	Leafy Blue Flag	wet	Wet situations in shade to semi-shade	Madison	T	
Platanthera psycodes	Small Purple Fringed Orchid	wet	Wet situations, semi-shade, neutral-subacidic substrates	Champaign	E	
Sphenopholis pensylvanica	Swamp-oats	wet	Wet places in full sun	Logan	P	
Carex cryptolepis	Little Yellow Sedge	wet open	Wet, open; calcareous or sandy soils	Champaign	P	
Carex viridula	Little Green Sedge	wet open	Open, wet; calcareous or sandy soils	Champaign, Clark	P	
Cypripedium reginae	Showy Lady's-slipper	wet open	Full sun-part shade; wet situations on alkaline soil	Champaign	T	
Spiranthes lucida	Shining Ladies'-tresses	wet open	Calcareous soils with constant water supply	Clark	P	
Carex atherodes	Wheat Sedge	wet prairie	Wet, open; calcareous to neutral soils	Logan	P	
Vernonia fasciculata	Prairie Ironweed	wet prairie	Wet to moist, open situations; rich soil	Clark	P	

[1]Ohio Department of Natural Areas and Preserves, 2007

[2]E = Endangered, T = Threatened, P = Potentially Threatened, C = Candidate

TABLE 5
BUCKEYE II WIND FARM
LISTED ANIMAL SPECIES WITHIN FIVE COUNTIES ADJACENT TO PROJECT AREA

Scientific Name	Common Name	Animal	Habitat	Specific Habitat Requirements[1]	Listed in (County/Watershed)	Status in Ohio[2]	Federal Status[2]
Cistothorus platensis	Sedge Wren	bird	bog/wet meadow	Large sedge meadows and damp grassy fields	Clark	SC	
Lanius ludovicianus	Loggerhead Shrike	bird	old field/prairie	Grasslands and open areas with scattered trees	Clark, Madison, Union	E	
Bartramia longicauda	Upland Sandpiper	bird	open uplands	Grasslands, pastures, unkempt agricultural land	Clark	T	
Haliaeetus leucocephalus	Bald Eagle	bird	variety	Near an open water source	Logan, Union	SC	
Falco peregrinus	Peregrine Falcon	bird	variety/nests on tall structures	Cliffs and rock outcrops near a water source	Clark	E	
Ixobrychus exilis	Least Bittern	bird	wetlands	Dense emergent marshes	Clark	T	
Rallus elegans	King Rail	bird	wetlands	Freshwater marshes and wetland edges	Madison	E	
Argia bipunctulata	Seepage Dancer	damsel fly	sunny seeps	Seeps in full sun	Champaign, Clark	E	
Nannothemis bella	Elfin Skimmer	dragonfly	bog/fen	Bogs/fens with sedge meadows and marl deposits	Champaign	E	
Exoglossum laurae	Tonguetied Minnow	fish	creeks/sm rivers	Cool-warm, usually clear, creeks & small-medium rivers	Champaign, Clark, Logan	T	
Etheostoma exile	Iowa Darter	fish	headwaters	Clear sluggish vegetated headwaters	Clark, Logan	SC	
Esox masquinongy	Muskellunge	fish	lakes/large streams	Heavily vegetated lakes or large stream pools	Big Darby Watershed	SC	
Noturus trautmani	Scioto madtom	fish	riffle areas in Big Darby Creek	deeply undercut banks near riffles in Big Darby	Madison, Union	E	E
Anguilla rostrata	American Eel	fish	rivers	Moderate or large rivers with continuous flow	Big Darby Watershed	T	
Hiodon alosoides	Goldeye	fish	rivers	Sluggish pools and backwaters of large rivers	Big Darby Watershed	E	
Moxostoma carinatum	River Redhorse	fish	rivers	Clear, large creeks and rivers	Madison, Union	SC	
Polyodon spathula	Paddlefish	fish	rivers	Sluggish pools and backwaters of large rivers	Big Darby Watershed	T	
Erimyzon sucetta	Lake Chubsucker	fish	slow water	Fresh water with little or no flow	Champaign, Logan	T	
Ichthyomyzon fossor	Northern Brook Lamprey	fish	streams	Clear brooks with fast flowing water and gravel bottoms	Big Darby Watershed	E	
Taxidea taxus	Badger	mammal	variety	Variety of upland habitats; fields and woods	Logan, Madison, Union	SC	
Myotis sodalis	Indiana bat	mammal	woodlands	Trees w/exfoliating bark, stream corridors, riaprian areas	all Ohio counties	E	E
Litobrancha recurvata	A burrowing mayfly	mayfly	wetlands/ponds	Wetlands and ponds with muddy substrates	Champaign	E	
Megalonaias nervosa	Washboard	mussel	large rivers	Large rivers with good current; occasional medium rivers	Big Darby Watershed	E	
Obliquaria reflexa	Three-horned wartyback	mussel	large rivers	Large rivers in coarse sand or gravel	Big Darby Watershed	T	
Pleurobema sintoxia	Round Pigtoe	mussel	large rivers	Medium to large rivers in mud, sand, or gravel	Madison, Union	SC	
Truncilla truncata	Deertoe	mussel	large rivers	Medium to large rivers in mud, sand, or gravel	Big Darby Watershed	SC	
Alasmidonta marginata	Elktoe	mussel	medium rivers	Medium-sized streams in gravel or mixed sand and gravel	Big Darby Watershed	SC	
Epioblasma torulosa rangiana	Northern Riffleshell	mussel	riffle areas in gravel	Medium to large rivers in gravel riffles	Madison, Union	E	E
Fusconaia maculata maculata	Long-solid	mussel	riffle areas in gravel	Large riffles in gravel	Big Darby Watershed	E	
Cyclonaias tuberculata	Purple Wartyback	mussel	rivers in gravel	Medium to large rivers in gravel or sand/gravel	Madison, Union	SC	
Epioblasma triquetra	Snuffbox	mussel	rivers in gravel	Medium to large rivers in clear, gravel riffles	Madison, Union	E	E
Ligumia recta	Black Sandshell	mussel	rivers in gravel	Medium-large rivers in riffles/raceways in gravel/firm sand	Big Darby Watershed	T	
Ptychobranchus fasciolaris	Kidneyshell	mussel	rivers in gravel	Medium to large rivers in gravel	Union	SC	
Simpsonaias ambigua	Salamander Mussel	mussel	rivers in gravel	Medium-large rivers on mud/gravel bars & under flat stones	Big Darby Watershed	SC	
Truncilla donaciformis	Fawnsfoot	mussel	rivers in gravel	Large rivers or medium-sized streams in sand or gravel	Big Darby Watershed	T	
Elliptio crassidens	Elephant-ear	mussel	rivers in mud	Large rivers in mud, sand, or fine gravel	Madison	E	
Cryptobranchus alleganiensis	Eastern Hellbender	mussel	rivers/large creeks	Large, swift flowing streams	Logan	E	
Quadrula cylindrica cylindrica	Rabbitsfoot	mussel	sm rivers/fast current	Medium to large rivers in mixed sand and gravel	Madison, Union	E	C
Pleurobema clava	Clubshell	mussel	streams in gravel	Medium to large rivers in gravel or gravel/sand	Champaign, Madison, Union	E	E
Lampsilis fasciola	Wavy-rayed Lampmussel	mussel	streams in riffles	Medium-sized streams in gravel riffles	Clark, Logan, Madison, Union	SC	
Villosa fabalis	Rayed Bean	mussel	streams in riffles	Shoal/riffle areas of small streams or near shore in lakes	Champaign, Madison, Union	E	E
Lasmigona compressa	Creek Heelsplitter	mussel	streams in sand	Creeks or headwaters in fine gravel or sand	Big Darby Watershed	SC	
Clonophis kirtlandii	Kirtland's Snake	snake	wetlands	Open, wet grasslands, meadows, prairie fens	Champaign, Clark	T	
Sistrurus catenatus	Eastern Massasauga	snake	wetlands/fens	Wet prairies, sedge meadows, prairie fens	Champaign, Clark, Union	E	C
Clemmys guttata	Spotted Turtle	turtle	wetlands	Shallow, sluggish waters with ample vegetation	Champaign, Clark, Logan	T	

[1]Ohio Department of Natural Resources, 2006; Nature Serve, 2007; Illinois Natural History Survey, 1997.
[2]E = Endangered, T = Threatened, SC = Species of Concern, C = Candidate

TABLE 6
BUCKEYE II WIND FARM
RARE PLANT AND ANIMAL SPECIES THAT MAY OCCUR IN PROJECT AREA

Scientific Name	Common Name	General Habitat	Specific Habitat Requirements[1]	Status in Ohio[2]	Federal Status[2]
Plants					
Calamintha arkansana	Limestone Savory	dry open areas	On calcareous soils; quarries, etc.	T	
Verbesina helianthoides	Hairy Wingstem	dry open woodlands	Dry, open woodlands on sandy soil	P	
Liatris squarrosa	Scaly Blazing-star	dry prairies	Dry prairies, poor soil on oak ridges	P	
Poa languida	Weak Spear Grass	dry prairies	Sun to semi-shade on neutral to basic substrates	P	
Spiranthes magnicamporum	Great Plains Ladies'-tresses	dry prairies	Dry, open areas with calcareous soils	P	
Viola pedatifida	Prairie Violet	dry prairies	Full sun, well-drained, calcareous soil	E	
Carex timida	Timid Sedge	dry to mesic woods/cedar	Cedar woodlands on limestone soils	E	
Melica nitens	Three-flowered Melic	dry woods/prairies	Full sun to semi shade in rocky woods	T	
Platanthera leucophaea	Prairie Fringed Orchid	fen, marsh, old field	Full sun, neutral to calcareous soils	T	T
Desmodium glabellum	Hairy Tick-trefoil	floodplain forest	Moist-wet woods; shade	E	
Juglans cinerea	Butternut	mesic woods	Rich, moist soil in woods	P	
Spiranthes ovalis	Lesser Ladies'-tresses	moist forest, field	Full to partial sun, moist, calcareous soils	P	
Vitis cinerea	Pigeon Grape	moist woods, edges	Moist, open to semi-open situations	P	
Botrychium biternatum	Sparse-lobed Grape Fern	moist/shaded	Variety of moist, shaded situations	T	
Amelanchier sanguinea	Rock Serviceberry	open woods, slopes	Open woods on calcareous soil	E	
Thuja occidentalis	Arbor Vitae	open woods, slopes	Arbor vitae fen	P	
Gentiana alba	Yellowish Gentian	prairie/damp woods	Mesic prairies, savannas, grassy meadows and damp woods	T	
Lathyrus venosus	Wild Pea	prairie/open woods	Dry, sandy soil in upland woods	E	
Panicum leibergii	Leiberg's Panic Grass	prairies	Neutral to slightly alkaline sandy loam	T	
Silene regia	Royal Catchfly	prairies	Prairie remnants, cemeteries, railroad, powerlines, & roadsides	T	
Sporobolus heterolepis	Prairie Dropseed	prairies	Dry to moist calcareous soils in full sun	T	
Vernonia missurica	Missouri Ironweed	prairies	Mesic prairies and grassy roadsides in oak openings region	E	
Ranunculus fascicularis	Early Buttercup	prairies/dry woods	Calcareous soils of prairies, pastures, and dry, open woods	P	
Anemone cylindrica	Prairie Thimbleweed	variety	Dry open woods, prairies, quarries, etc.	T	
Arabis hirsuta var. adpressipilis	Southern Hairy Rock Cress	variety	Diverse, including sand, cliffs, and open woods	P	
Baptisia lactea	Prairie False Indigo	variety	Wet to dry; open to shaded woods	P	
Carex bicknellii	Bicknell's Sedge	variety	Dry to moist situations; sandy soil	T	
Carex retroflexa	Reflexed Sedge	variety	Woods, slopes, dry fields; sandy or rocky soil	T	
Delphinium exaltatum	Tall Larkspur	variety	Full sun-part shade; calcareous soils	P	
Elymus trachycaulus	Bearded Wheat Grass	variety	Wide range of soils and climates	T	
Rosa blanda	Smooth Rose	variety	Dry to moist, calcareous to circumneutral soils	E	
Sphenopholis obtusata var. obtus.	Prairie Wedge Grass	variety	Moist to dry soil of open woods, prairies, old fields	T	
Helianthus mollis	Ashy Sunflower	variety open	Well-drained, sunny openings	T	
Nothoscordum bivalve	False Garlic	variety open	Moist openings in rocky or sandy soils	T	
Animals					
Lanius ludovicianus	Loggerhead Shrike	old field/prairie	Grasslands and open areas with scattered trees	E	
Bartramia longicauda	Upland Sandpiper	open uplands	Grasslands, pastures, unkempt agricultural land	T	
Taxidea taxus	Badger	variety	Variety of upland habitats; fields and woods	SC	
Falco peregrinus	Peregrine Falcon	variety/nests on tall structures	Cliffs and rock outcrops near a water source	E	
Myotis sodalis	Indiana bat	woodlands	Trees w/exfoliating bark, stream corridors, riparian areas	E	E

[1]Ohio Department of Natural Areas and Preserves, 2007; Ohio Department of Natural Resources, 2006; Nature Serve, 2007; Illinois Natural History Survey, 1997.
[2]E = Endangered, P = Potentially Threatened, T = Threatened, C = Candidate, SC = Species of Concern

BUCKEYE II WIND FARM

TABLE 7

FACILITY WETLAND IMPACT ASSESSMENT

Wetland ID	Sample Point	Map Grid No.	Figure No.	Nearest Turbine No.	Mapped Hydric Soil	Cowardin Classification	NWI Mapped As:	Wetland Size (ac)[§]	ORAM Score[†]	ORAM Category[†]	Isolation status[§]	Photo No.	Facility Features with Potential Impact	Impact Assessment	Regulated Impact to Surface Waters?
J	SP4	C4	11	84	no	PEM	PEMA	0.74	7.5	1	Isolated	71	Interconnect	Buried Interconnect located close to wetland boundary; can be avoided during construction.	No Impact
M	SP32	C4	11	115	yes	PEM	none	0.19	11	1	Isolated	72	Interconnect	Buried Interconnect located close to wetland boundary; can be avoided during construction.	No impact
N	SP33	B4	6	72	yes	PEM	none	0.017	14	1	Non-isolated	73	Interconnect	Buried Interconnect is routed through wetland.	No impact if direct bored.
T	SP43	C4	11	90	yes	PEM	PEM1C	0.2	14	1	Isolated	74	Interconnect, Crane Path	Buried Interconnect and Crane Path located close to wetland boundary; can be avoided during construction.	No impact
U	SP44	D4	17	90	yes	PEM	none	0.07	20	1	Isolated	75	Interconnect	No Impacts. Buried Interconnect route was altered to go around Wetland U to avoid any impacts.	No impact
V	SP45	D4	17	132	no	PEM	PEM1A	~0.20**	25	1	Isolated	76	Interconnect	No Impacts. Buried Interconnect route was altered to go around Wetland V to avoid any impacts.	No impact
W	SP46	B4	6	73	yes	PEM	PEM1C	0.19	10	1	Isolated	77	Interconnect	Buried Interconnect located close to wetland boundary; can be avoided during construction.	No impact
Y	SP50	B3	5	81	yes	PEM/PSS/PFO	none	1.61	26	1	Non-isolated	78	Access Road, Interconnect	Access Road and Buried Interconnect located close to wetland boundary; can be avoided during construction.	No impact
Z	SP51	B3	5	81	yes	PEM/PSS	none	0.06	9	1	Non-isolated	79	Interconnect	No Impacts. Buried Interconnect route was altered to go around Wetland Z to avoid any impacts.	No impact
AA	SP52	B3	5	82	yes	PEM/PSS	PSS1C	0.13	23.5	1	Non-isolated	80	Access Road, Interconnect	Access Road and Buried Interconnect located close to wetland boundary; can be avoided during construction.	No impact
BB	SP53	C3	10	83	yes	PEM/POW/PSS/PFO	PUBGh	0.65	36	Modified 2	Isolated	81	Access Road, Interconnect	Access Road and Buried Interconnect located close to wetland boundary; can be avoided during construction.	No impact
CC	SP54	C5	12	94	yes	PEM	none	0.13	17.5	1	Non-isolated	82	Access Road, Interconnect	No Impacts. Access Road and Buried Interconnect route weave between Wetlands CC and CC-2 to avoid impacts. The wetlands are located close to the access road and interconnect, but can be avoided during construction	No impact
DD	SP55	C5	12	94	no	PFO/PEM	PSS1C	0.45	47	2	Isolated	83	Interconnect, Crane Path	Crane Path, and Buried Interconnect are located close to this wetland; can be avoided during construction.	No impact
EE	SP56	C5	12	96	yes	PEM	PEM1C	0.30	23	1	Non-isolated	84	Interconnect, Crane Path	No Impacts. Buried Interconnect and Crane Path route were altered to go around Wetland EE to avoid any impacts.	No impact
FF	SP57	D4	17	88	yes	PEM	none	0.39	16.5	1	Non-isolated	85	Interconnect	Buried Interconnect is routed through Wetland FF. To avoid impacts direct bore.	No impact if direct bored
GG	SP58	D3	16	89	yes	PEM/PSS	none	~0.30-3**	23	1	Non-isolated	86	Interconnect	No Impacts. Buried Inteconnect will be routed through a break in Wetland GG created by boulders during construction	No impact
HH	SP59	B3	5	107	no	PEM	none	0.04	34	Modified 2	Non-isolated	87	Access Road, Interconnect	Access road and Buried Interconnect located close to wetland boundary; can be avoided during construction.	No impact
II	SP60	C3	10	108	yes	PEM	none	0.02	12	1	Isolated	88	Access Road	Access Road located close to wetland boundary; can be avoided during construction.	No impact
JJ	SP62	B4	6	72	no	PEM	PEM1A	0.19	27	1	Non-isolated	89	Interconnect	Buried Interconnect located close to wetland boundary; can be avoided during construction.	No impact
KK	SP63	B5	7	100	yes	PFO/PSS	PFO1A/PSS1C	~0.30-3**	45	2	Non-isolated	90	Interconnect	Buried Interconnect located close to wetland boundary; can be avoided during construction.	No impact
LL	SP64	C4	11	71	no	PEM	none	0.13	38	Modified 2	Non-isolated	91	Interconnect	Buried Interconnect located close to wetland boundary; can be avoided during construction.	No impact
MM	SP65	C5	12	101	yes	PEM, PUB	PEM1C, PUBGx	~1.2-3.0**	32	2	Non-isolated	92	Interconnect, Crane Path	Interconnect and Crane Path located close to wetland boundary; can be avoided during construction.	No impact
NN	SP66	C4	11	90	yes	PSS/PUB	PSS1C/PUBGh	~0.30-3**	28	1	Non-isolated	93	Interconnect	Interconnect located close to wetland boundary; can be avoided during construction.	No impact

NWI = National Wetlands Inventory
ORAM = Ohio Rapid Assessment Method for Wetlands v. 5.0
*No data collected; will be avoided
[§]Subject to verification by US Army Corps of Engineers.
[†]Subject to verification by Ohio EPA.
n/a = Not applicable.
ND = No Data Obtained
GPS = Global Positioning System
GIS = Global Information System
** = Wetland size estimated, wetland extended out of delineation area

BUCKEYE II WIND FARM

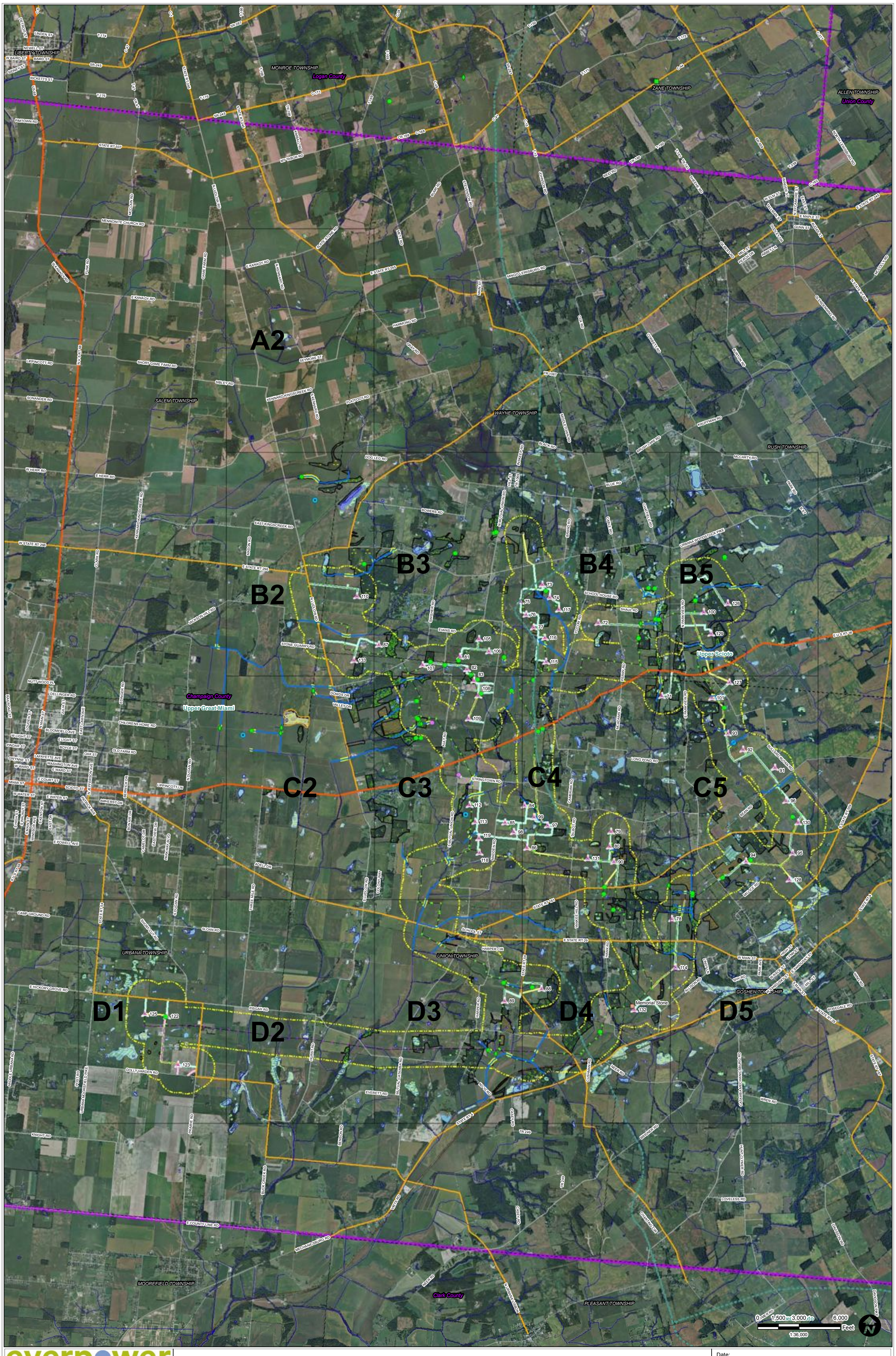
TABLE 8

FACILITY STREAM IMPACT ASSESSMENT

Stream ID	Map Grid	Figure No.	Nearest Turbine	Watershed Size (mi^2)	HHEI Score†	QHEI Score†	Named Stream?	Darby Creek Watershed?	Existing Beneficial Use†	Flow Regime§	Photo No.	Existing Crossing?	Facility Features with Potential to Impact	Impact Assessment	Regulated Impact to Surface Waters?
D-2	B4	6	100	0.55	49	n/a	No	Yes	Modified Class II PHWH	Ephemeral	1-2	No	Interconnect	Buried Interconnect for Turbine 100 crosses Stream D-2. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No surface water impact if direct bored, temporary impact if trenched
D-3	C4	11	71	1.59	n/a	65.5	No	Yes	WWH	Intermittent	3-4	No	Interconnect	Buried Interconnect for Turbine 71 crosses Stream D-3. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No surface water impact if direct bored, temporary impact if trenched
D-4	C4	11	71	1.6	47	n/a	No	Yes	Class II PHWH	Intermittent	5-6	No	No features	N/A	No impact
E	B2	4	133	2.73	37	44	Dugan Run	No	WWH	Intermittent	7-8	No	Interconnect	Buried Interconnect for Turbine 133 crosses Stream E. Could be trenched or direct bored.	No surface water impact if direct bored, temporary impact if trenched
F	B5	7	126	0.24	74	n/a	No	Yes	Modified Class II PHWH	Perennial	9-10	No	Access Road, Interconnect	Access Road and Buried Interconnect for Turbine 126 cross Stream F. No existing crossing. Disturbance to riparian community will trigger NPDES stormwater mitigation.	IMPACT
J-2	C3	10	107	0.65	n/a	72	No	No	WWH	Intermittent	11-12	No	Interconnect	Interconnect for Turbine 107 crosses Stream J-2.	No surface water impact if direct bored, temporary impact if trenched
L	C5	12	78	1.95	46	51.5	Little Darby Creek	Yes	EWH and CWH	Intermittent	13	No	Interconnect	Buried Interconnect for Turbine 78 crosses Stream L. No existing crossing. Because Little Darby Creek is listed as EWH & CWH, impacts should be avoided. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No surface water impact if direct bored.
M	B5	7	127	0.07	27	n/a	No	Yes	Modified Class I PHWH	Ephemeral	14	No	Crane Path	Crane Path for Turbine 127 crosses Stream M. No existing crossing. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No impact if crane path is spanned, temporary impact if culverted.
O	D3, D4	15, 16	89	4.11	n/a	46.5	East Fork Buck Creek	No	CWH[1]	Perennial	15-16	No	Interconnect	Buried Interconnect crosses East Fork Buck Creek at two locations. Because East Fork Buck Creek is listed as CWH, impacts should be avoided.	No surface water impact if direct bored
S	B4	6	100	0.08	27	n/a	No	Yes	Modified Class I PHWH	Ephemeral	17-18	Yes	Interconnect	Buried Interconnect crosses at existing crossing location	No impact
Y	C3/D3	15	118	5.56	n/a	47.5	Buck Creek	No	CWH[1]	Intermittent	19-20	No	Interconnect	Buried Interconnect crosses Stream Y. No existing crossing. Because Buck Creek is listed as CWH, impacts should be avoided.	No surface water impact if direct bored
Y-2	C3	10	118	3.51	n/a	25.5	Buck Creek	No	CWH[1]	Intermittent	21-22	No	Interconnect	Buried Interconnect crosses Stream Y-2. No existing crossing. Because Buck Creek is listed as CWH, impacts should be avoided.	No surface water impact if direct bored
Y-3	C3	10	112	1.87	n/a	22	Buck Creek	No	CWH[1]	Intermittent	23-24	No	Interconnect	Buried Interconnect crosses Stream Y-3. No existing crossing. Because Buck Creek is listed as CWH, impacts should be avoided.	No surface water impact if direct bored
Y-4	C3	10	112	1.85	n/a	33	Buck Creek	No	CWH[2]	Intermittent	25-26	No	Access Road	Access Road for Turbine 112 crosses Stream Y-4 (Buck Creek). Because Buck Creek is listed as CWH, impacts should be avoided.	No impact if spanned
AA-2	B3	5	106	0.1	13	n/a	Buck Creek	No	CWH[2]	Ephemeral	27-28	No	No Features	Buried Interconnect route and access road were altered to avoid impacts to Stream AA-2.	No impact
BB	B4	6	115	1.11	69	44	Treacle Creek	Yes	EWH	Intermittent	29		Interconnect	Buried Interconnect crosses Stream BB. No existing crossing. Because Treacle Creek is listed as EWH, impacts should be avoided. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No surface water impact if direct bored
BB-2	C5	12	93	7.14	n/a	73	Treacle Creek	Yes	EWH[1]	Perennial	30-31	Yes	Interconnect, Crane Path	Interconnect and Crane Path cross Stream BB-2 (Treacle Creek). Because Treacle Creek is listed as EWH, impacts should be avoided. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No impact if interconnect is bored and crane path is spanned.
BB-3	B4	6	74	0.15	61	n/a	Treacle Creek	Yes	EWH[1]	Intermittent	32-33	No	Access Road, Interconnect	Access Road and Buried Interconnect for Turbines 74 and 117 are located near Stream BB-3 (Treacle Creek), but can be avoided during construction.	No impact
CC	D3	15	118	0.63	21	n/a	No	No	Modified Class I PHWH	Ephemeral	34	No	Interconnect	Buried Interconnect crosses Stream CC. Could be trenched or direct bored.	No surface water impact if direct bored, temporary impact if trenched
DD	C5	12	53	0.068	22	n/a	No	Yes	Modified Class I	Ephemeral	35	No	Interconnect	Buried Interconnect is located near Stream DD, but can be avoided during construction. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No impact
EE	D4	16	89	0.31	34	n/a	No	No	Modified Class II PHWH	Ephemeral	36	No	Interconnect	Buried Interconnect is located near Stream EE, but can be avoided during construction.	No impact
II	C3	10	119	0.04	25	n/a	No	No	Modified Class I PHWH	Ephemeral	37-38	No	Interconnect	Buried Interconnect crosses Stream II. Could be trenched or direct bored.	No surface water impact if direct bored, temporary impact if trenched
JJ	C3	10	112	1.08	n/a	36.5	No	No	Modified WWH	Intermittent	39-40	Yes	Interconnect	Buried Interconnect crosses Stream JJ. Could be trenched or direct bored.	No surface water impact if direct bored, temporary impact if trenched
MM	B5	7	129	0.13	29	n/a	No	Yes	Modified Class I PHWH	Ephemeral	41-42	No	Interconnect, Crane Path	Buried Interconnect and Crane Path for Turbine 129 crosses Stream MM. Interconnect Could be trenched or direct bored. Crane Path could be culverted or spanned Disturbance to riparian community will trigger NPDES stormwater mitigation.	No surface water impact from interconnect if direct bored, temporary impact if trenched. No impact from crane path if spanned, temporary impact if culverted.
NN	D4	17	132	0.51	46	n/a	No	Yes	Modified Class II PHWH	Ephemeral	43-44	No	Interconnect	Buried Interconnect crosses Stream NN. Could be trenched or direct bored. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No surface water impact if direct bored, temporary impact if trenched
OO	D3	16	118	0.69	36	n/a	No	No	Modified Class II PHWH	Ephemeral	45-46	No	Interconnect	Buried Interconnect crosses Stream OO. Could be trenched or direct bored.	No surface water impact if direct bored, temporary impact if trenched
PP	C4	11	80	0.05	15	n/a	No	Yes	Modified Class I PHWH	Ephemeral	47-48	Yes	Interconnect, Crane Path	Buried Interconnect for Turbines 79 and 80 crosses Stream PP. Could either be trenched or direct bored. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No surface water impact from interconnect if direct bored, temporary impact if trenched; CP will have no impact as it does not cross Stream PP.
QQ	B4	6	116	0.2	15	n/a	No	Yes	Modified Class I PHWH	Ephemeral	49-50	No	Interconnect	Buried Interconnect for Turbines 115 and 116 crosses Stream QQ; could be trenched or direct bored. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No surface water impact proposed if direct bored, temporary impact if trenched
SS	C5	12	93	0.19	46	n/a	No	Yes	Modified Class II PHWH	Ephemeral	51-52	No	Access Road, Interconnect	Stream turns into a Grass Waterway at point of crossing for a buried interconnect and access road.	No impact
TT	C5	12	101	0.21	23	n/a	No	Yes	Modified Class I PHWH	Ephemeral	53-54	No	Access Road, Interconnect	Access Road and Buried Interconnect crosses Stream TT to access Turbine 101. Interconnect could be trenched or direct bored. No existing crossing for access road. Disturbance to riparian community will trigger NPDES stormwater mitigation.	IMPACT
UU	C5	12	96	0.65	49	n/a	Jumping Run	Yes	EWH	Intermittent	55-56	No	Access Road, Interconnect	Access Road and Buried Interconnect cross Stream UU (Jumping Run) between Turbines 91 and 96. Because Jumping Run is listed as EWH, impacts should be avoided. No existing crossing for Access Road. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No surface water impact from interconnect if direct bored; no impact from access road if spanned.
VV	C5	12	94	0.04	9	n/a	No	Yes	Modified Class I PHWH	Ephemeral	57-58	Yes	Interconnect	Buried Interconnect toTurbine 94 crosses Stream VV; could be trenched or direct bored. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No surface water impact proposed if direct bored, temporary impact if trenched
WW	D5	18	78	0.42	42	n/a	No	Yes	Modified Class II PHWH	Ephemeral	59-60	No	Interconnect, Crane Path	Buried Interconnect between Turbines 78 and Turbine 114 crosses Stream WW. Trench or direct bore the interconnect. no existing crossing for the crane path. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No surface water impact from interconnect if direct bored, temporary impact if trenched; no impact from crane path if spanned, temporary impact if culverted.
XX	D5	18	78	0.01	38	n/a	No	Yes	Modified Class II PHWH	Ephemeral	61-62	No	Interconnect, Crane Path	Buried Interconnect between Turbines 78 and Turbine 114 crosses Stream XX. Trench or direct bore the Interconnect. no existing crossing for the Crane Path. Disturbance to riparian community will trigger NPDES stormwater mitigation.	No surface water impact from interconnect if direct bored, temporary impact if trenched; no impact from crane path if spanned, temporary impact if culverted.
YY	D5	18	114	0.27	8	n/a	No	Yes	Modified Class I PHWH	Ephemeral	63-64	No	Access Road, Interconnect	Access Road and Buried Interconnect to Turbine 114 crosses Stream YY. No existing crossing. Disturbance to riparian community will trigger NPDES stormwater mitigation.	IMPACT
ZZ	C4	11	84	0.24	43	n/a	No	No	Modified Class II PHWH	Ephemeral	65-66	No	Interconnect	Buried Interconnect for Turbine 84 crosses Stream ZZ-1; could be trenched or direct bored.	No surface water impact proposed if direct bored, temporary impact if trenched
ZZ-2	C4	11	99	0.1	29	n/a	No	No	Modified Class I PHWH	Ephemeral	67-68	No	Access Road, Interconnect, and Crane Path	Buried Interconnect for Turbine 99 crosses Stream ZZ-2; could be trenched or direct bored; Access Road and Crane Path are located near Stream ZZ-2, but it can be avoided during construction.	No surface water impact if interconnect is direct bored, temporary impact if trenched
AAA	D3	16	89	0.05	34	n/a	No	No	Modified Class II PHWH	Ephemeral	69-70	Yes	Interconnect	Buried Interconnect crosses at existing crossing location	No impact

HHEI = Headwater Habitat Evaluation Index
HMFEI = Headwater Macroinvertebrate Field Evaluation Index
VES = Visual Encounter Survey
QHEI = Qualitative Habitat Evaluation Index
PHWH = Primary Headwater Habitat
CWH = Coldwater Habitat
EWH = Exceptional Warmwater Habitat
WWH = Warmwater Habitat
n/a = Not Applicable.
ND = No Data Obtained.
[1]Verified by the OEPA in 2005
[2] Recommended for Coldwater Habitat by OEPA in 2005.
§Subject to verification by US Army Corps of Engineers.
†Subject to verification by Ohio EPA.

FIGURES



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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Index

Please See Key for Legend

Date: February 2012

Project Number: EVP010

Geodatabase: EVP010.mdb

File:EVP010_12_SWSoils_Fig1_PhII-Index.mxd

Figure: 1

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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid A2

Please See Key for Legend

Date: February 2012

Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

File: EVP010_12_SWSoils_PhII-Mapbook.mxd

Figure: 2

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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid B2

Please See Key for Legend

Date: February 2012

Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid B3

Please See Key for Legend

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Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

File: EVP010_12_SWSoils_PhII-Mapbook.mxd

Figure: 5

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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid B4

Please See Key for Legend

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Figure: 6

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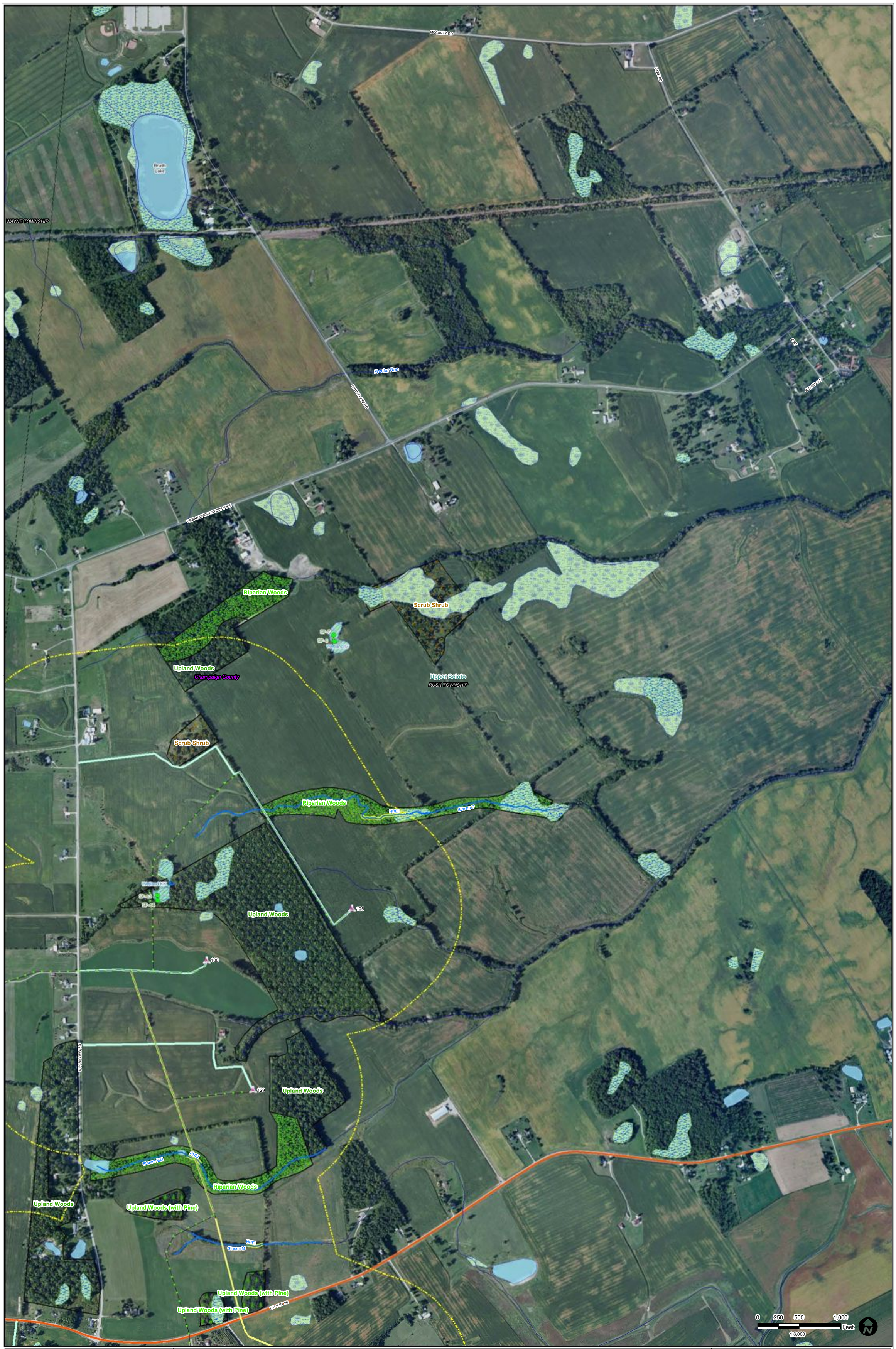

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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid B5

Please See Key for Legend

Date: February 2012

Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

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Figure: 7

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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid C2

Please See Key for Legend

Date: February 2012

Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

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Figure: 9

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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid C3

Please See Key for Legend

Date: February 2012

Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

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Figure: 10

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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid C4

Please See Key for Legend

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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid C5

Please See Key for Legend

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Geodatabase: EVP007_OPSB.mdb
File: EVP010_12_SWSoils_PhII-Mapbook.mxd

Figure:
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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid D1

Please See Key for Legend

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Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

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Figure: 14

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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid D2

Please See Key for Legend

Date: February 2012

Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

File: EVP010_12_SWSoils_PhII-Mapbook.mxd

Figure: 15

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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid D3

Please See Key for Legend

Date: February 2012

Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

File: EVP010_12_SWSoils_PhII-Mapbook.mxd

Figure: 16

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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid D4

Please See Key for Legend

Date: February 2012

Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

File: EVP010_12_SWSoils_PhII-Mapbook.mxd

Figure: 17

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Surface Water Delineation, and Plant Communities within ¼ Mile of Facility - Grid D5

Please See Key for Legend

Date: February 2012

Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

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Figure: 18

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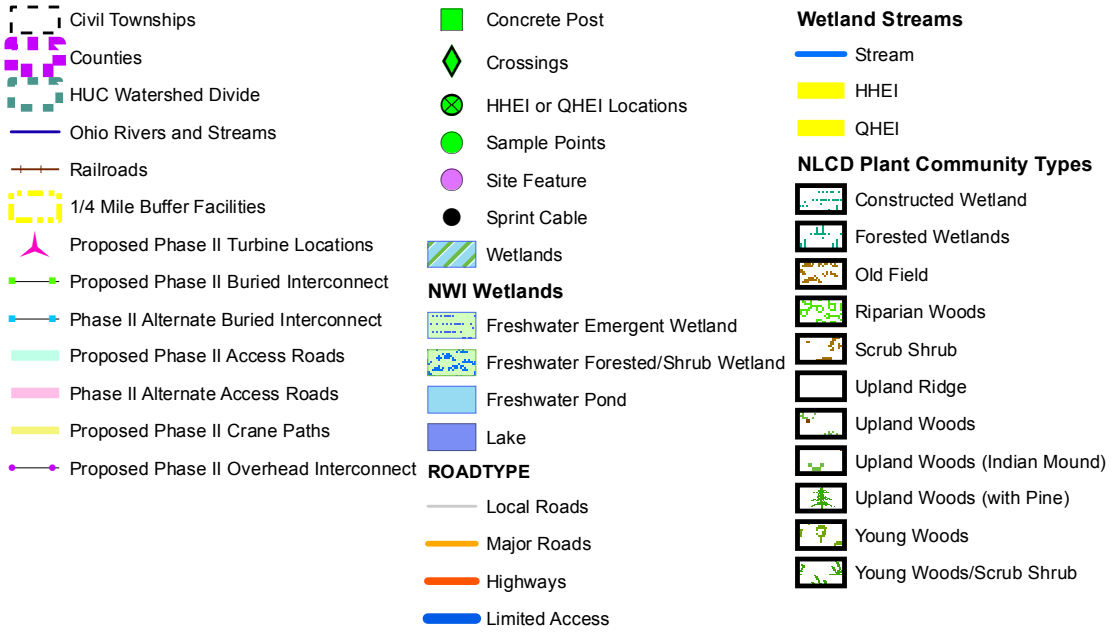

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Figure
19

Project Number: EVP010
File Name:
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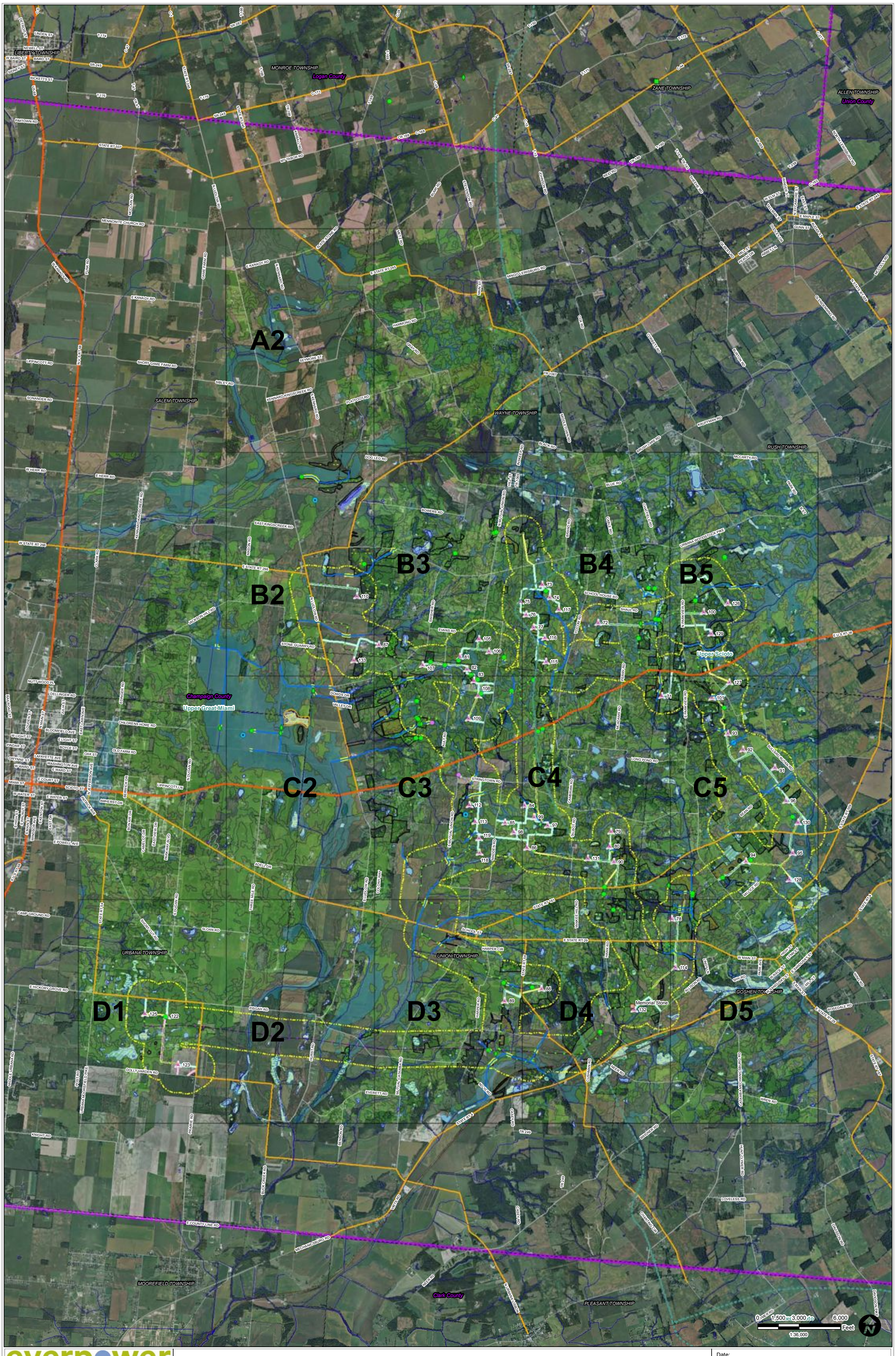

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Index

Please See Key for Legend

Date: February 2012

Project Number: EVP010

Geodatabase: EVP010.mdb

File: EVP010_12_SWSoils_Fig1S_PhII-Index.mxd

Figure: 1S

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid A2

Soils List

BsA	So	CnC2	HeB	MlB2	CcB	FnB	KeD2	MoF2	RgD2	
BsB	Wa	CrA	HoA	MlC	CcC2	FnB2	MlD	MrF2	RgF2	
Ca	Wn	CrB	IoA	MlC2	CgD2	FnC2	MlD2	MsE2	Ua	
Ed	Ag	CsB	IoB	MmC3	CmD2	FoC2	MlE	OcA	W	
Ln	CnA	Ee	KaA	Rn	FlB	KeA	MlE2	OcB	WrA	
Lp	CnB	Gn	MlA	Sh	FmB	KeB	MmD3	Pg	WrB	
Pa	CnB2	HeA	MlB	UnB	FnA	KeC2	MmE3	Pq	WsA	

Please See Key for Legend

Date:

February 2012

Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

FileEVP010_12_SWSoils_PhIIS-MpbkSoils.mxd

Figure:

2S

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid B2

Soils List

BsA	So	CnC2	HeB	MlB2	CcB	FnB	KeD2	MoF2	RgD2	
BsB	Wa	CrA	HoA	MlC	CcC2	FnB2	MlD	MrF2	RgF2	
Ca	Wn	CrB	IoA	MlC2	CgD2	FnC2	MlD2	MsE2	Ua	
Ed	Ag	CsB	IoB	MmC3	CmD2	FoC2	MlE	OcA	W	
Ln	CnA	Ee	KaA	Rn	FlB	KeA	MlE2	OcB	WrA	
Lp	CnB	Gn	MlA	Sh	FmB	KeB	MmD3	Pg	WrB	
Pa	CnB2	HeA	MlB	UnB	FnA	KeC2	MmE3	Pq	WsA	

Please See Key for Legend

Date: February 2012

Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

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Figure: 4S

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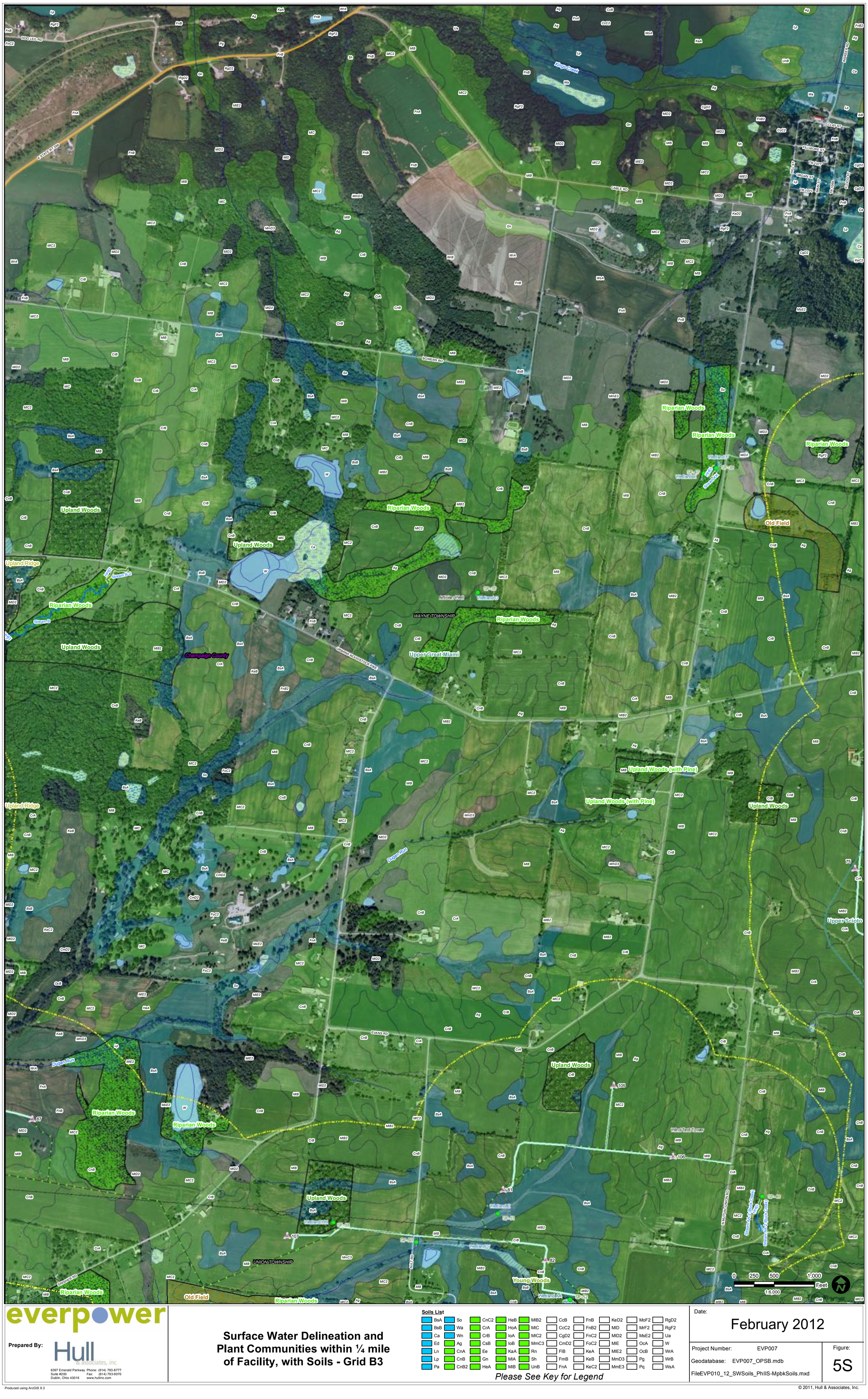

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid B3

Soils List

BsA	So	CnC2	HeB	MlB2	CcB	FnB	KeD2	MoF2	RgD2
BsB	Wa	CrA	HoA	MlC	CcC2	FnB2	MlD	MrF2	RgF2
Ca	Wn	CrB	IoA	MlC2	CgD2	FnC2	MlD2	MsE2	Ua
Ed	Ag	CsB	IoB	MmC3	CmD2	FoC2	MlE	OcA	W
Ln	CnA	Ee	KaA	Rn	FlB	KeA	MlE2	OcB	WrA
Lp	CnB	Gn	MlA	Sh	FmB	KeB	MmD3	Pg	WrB
Pa	CnB2	HeA	MlB	UnB	FnA	KeC2	MmE3	Pq	WsA

Please See Key for Legend

Date:

February 2012

Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

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Figure:

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid B4

Soils List

BsA	So	CnC2	HeB	MlB2	CcB	FnB	KeD2	MoF2	RgD2	
BsB	Wa	CrA	HoA	MlC	CcC2	FnB2	MlD	MrF2	RgF2	
Ca	Wn	CrB	IoA	MlC2	CgD2	FnC2	MlD2	MsE2	Ua	
Ed	Ag	CsB	IoB	MmC3	CmD2	FoC2	MlE	OcA	W	
Ln	CnA	Ee	KaA	Rn	FlB	KeA	MlE2	OcB	WrA	
Lp	CnB	Gn	MlA	Sh	FmB	KeB	MmD3	Pg	WrB	
Pa	CnB2	HeA	MlB	UnB	FnA	KeC2	MmE3	Pq	WsA	

Please See Key for Legend

Date:

February 2012

Project Number: EVP007

Geodatabase: EVP007_OPSB.mdb

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Figure:

6S

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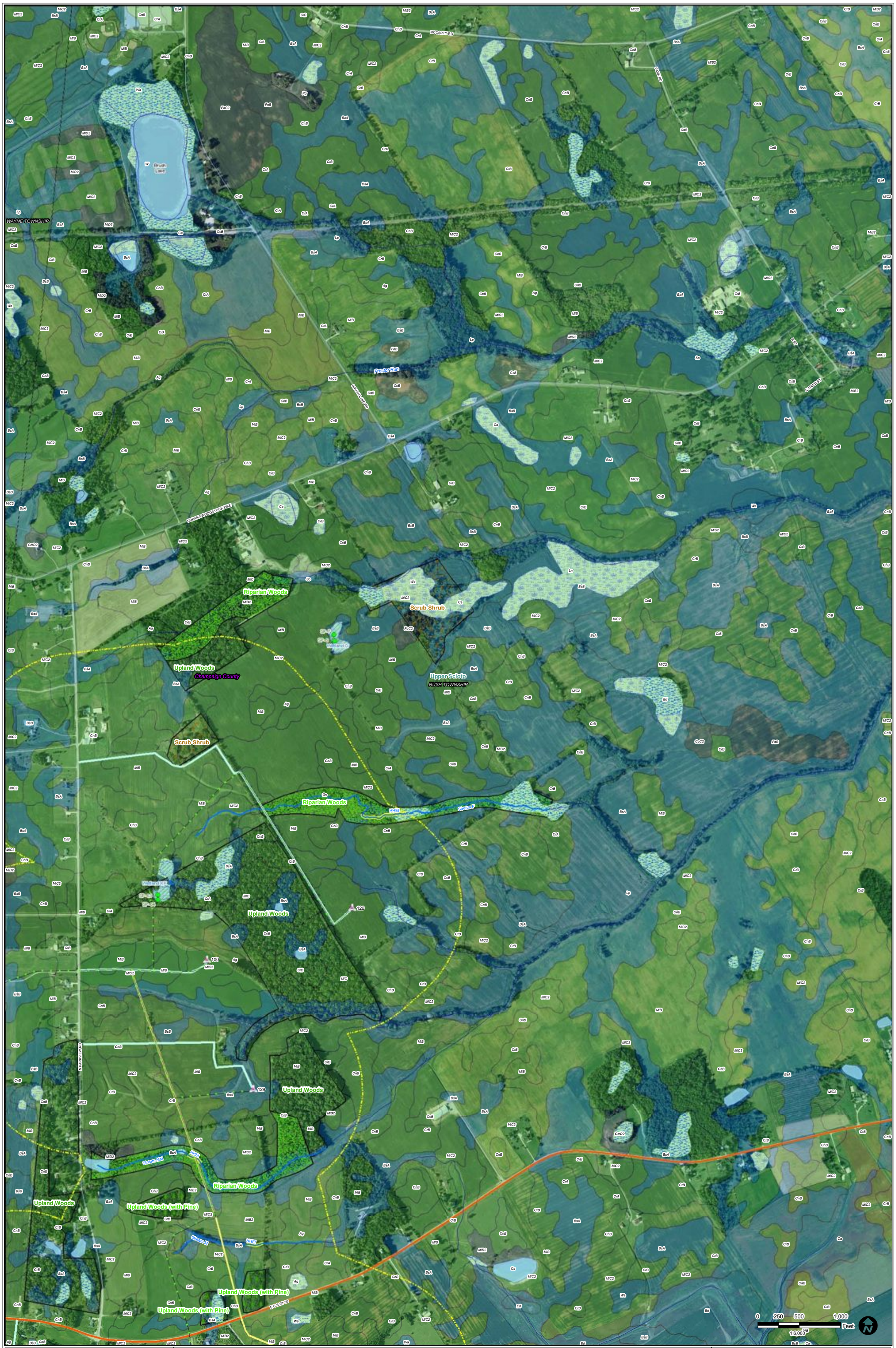

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid B5

Soils List

BsA	So	CnC2	HeB	MIB2	CcB	FnB	KeD2	MoF2	RgD2	
BsB	Wa	CrA	HoA	MIC	CcC2	FnB2	MlD	MrF2	RgF2	
Ca	Wn	CrB	IoA	MIC2	CgD2	FnC2	MlD2	MsE2	Ua	
Ed	Ag	CsB	IoB	MmC3	CmD2	FoC2	MlE	OcA	W	
Ln	CnA	Ee	KaA	Rn	FlB	KeA	MlE2	OcB	WrA	
Lp	CnB	Gn	MlA	Sh	FmB	KeB	MmD3	Pg	WrB	
Pa	CnB2	HeA	MlB	UnB	FnA	KeC2	MmE3	Pq	WsA	

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FileEVP010_12_SWSoils_PhIIS-MpbkSoils.mxd

Figure: 7S

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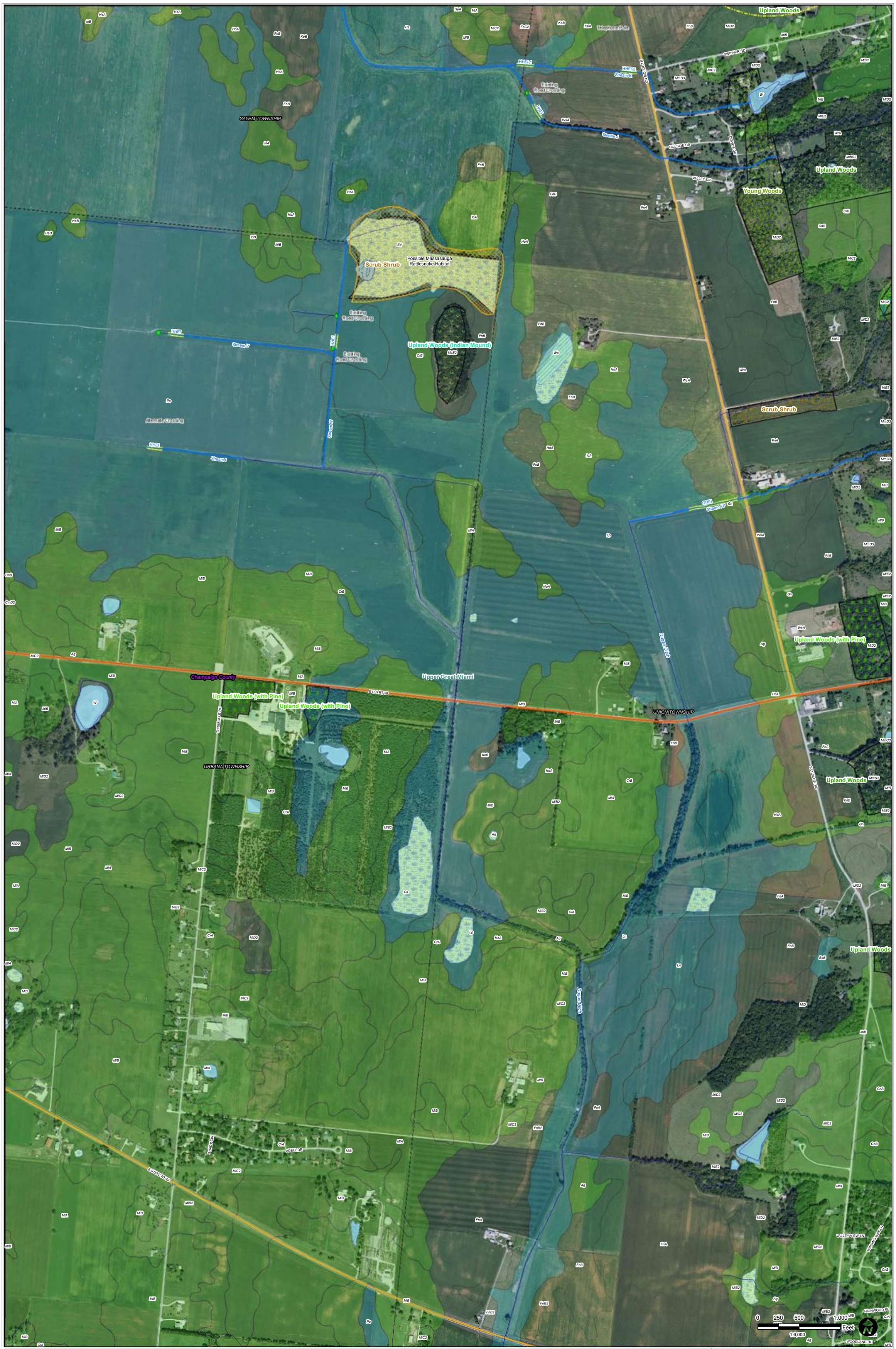

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid C2

Soils List

BsA	So	CnC2	HeB	MlB2	CcB	FnB	KeD2	MoF2	RgD2	
BsB	Wa	CnA	CrA	HoA	MlC	CcC2	FnB2	MlD	MrF2	RgF2
Ca	Wn	CnB	CrB	IoA	MlC2	CgD2	FnC2	MlD2	MsE2	Ua
Ed	Ag	CnB2	CsB	IoB	MmC3	CmD2	FoC2	MlE	OcA	W
Ln	CnA	Ee	Gn	KaA	Rn	FlB	KeA	MlE2	OcB	WrA
Lp	CnB	Gn	HeA	MlA	Sh	FmB	KeB	MmD3	Pg	WrB
Pa	CnB2	HeA	MlB	UnB	FnA	KeC2	MmE3	Pq	WsA	

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid C3

Soils List

BsA	So	CnC2	HeB	MlB2	CcB	FnB	KeD2	MoF2	RgD2
BsB	Wa	CrA	HoA	MlC	CcC2	FnB2	MlD	MrF2	RgF2
Ca	Wn	CrB	IoA	MlC2	CgD2	FnC2	MlD2	MsE2	Ua
Ed	Ag	CsB	IoB	MmC3	CmD2	FoC2	MlE	OcA	W
Ln	CnA	Ee	KaA	Rn	FlB	KeA	MlE2	OcB	WrA
Lp	CnB	Gn	MlA	Sh	FmB	KeB	MmD3	Pg	WrB
Pa	CnB2	HeA	MlB	UnB	FnA	KeC2	MmE3	Pq	WsA

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid C4

Soils List

BsA	So	CnC2	HeB	MIB2	CcB	FnB	KeD2	MoF2	RgD2	
BsB	Wa	CrA	HoA	MIC	CcC2	FnB2	MID	MrF2	RgF2	
Ca	Wn	CrB	IoA	MIC2	CgD2	FnC2	MID2	MsE2	Ua	
Ed	Ag	CsB	IoB	MmC3	CmD2	FoC2	MIE	OcA	W	
Ln	CnA	Ee	KaA	Rn	FlB	KeA	MIE2	OcB	WrA	
Lp	CnB	Gn	MIA	Sh	FmB	KeB	MmD3	Pg	WrB	
Pa	CnB2	HeA	MlB	UnB	FnA	KeC2	MmE3	Pq	WsA	

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid C5

Soils List

BsA	So	CnC2	HeB	MIB2	CcB	FnB	KeD2	MoF2	RgD2
BsB	Wa	CrA	HoA	MIC	CcC2	FnB2	MID	MrF2	RgF2
Ca	Wn	CrB	IoA	MIC2	CgD2	FnC2	MID2	MsE2	Ua
Ed	Ag	CsB	IoB	MmC3	CmD2	FoC2	MIE	OcA	W
Ln	CnA	Ee	KaA	Rn	FlB	KeA	MIE2	OcB	WrA
Lp	CnB	Gn	MIA	Sh	FmB	KeB	MmD3	Pg	WrB
Pa	CnB2	HeA	MIB	UnB	FnA	KeC2	MmE3	Pq	WsA

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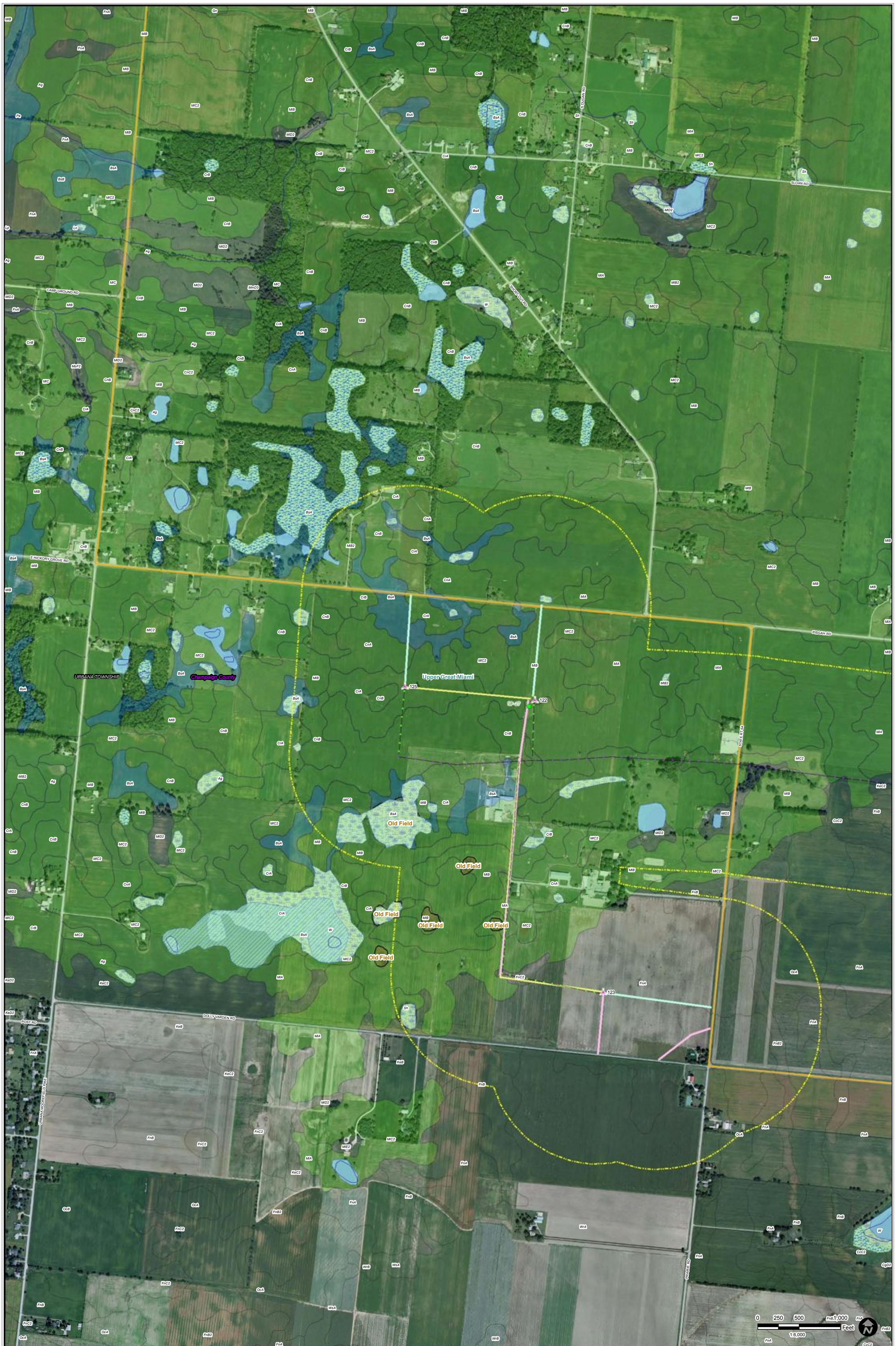

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid D1

Soils List

BsA	So	CnC2	HeB	MlB2	CcB	FnB	KeD2	MoF2	RgD2
BsB	Wa	CrA	HoA	MlC	CcC2	FnB2	MlD	MrF2	RgF2
Ca	Wn	CrB	IoA	MlC2	CgD2	FnC2	MlD2	MsE2	Ua
Ed	Ag	CsB	IoB	MmC3	CmD2	FoC2	MlE	OcA	W
Ln	CnA	Ee	KaA	Rn	FlB	KeA	MlE2	OcB	WrA
Lp	CnB	Gn	MlA	Sh	FmB	KeB	MmD3	Pg	WrB
Pa	CnB2	HeA	MlB	UnB	FnA	KeC2	MmE3	Pq	WsA

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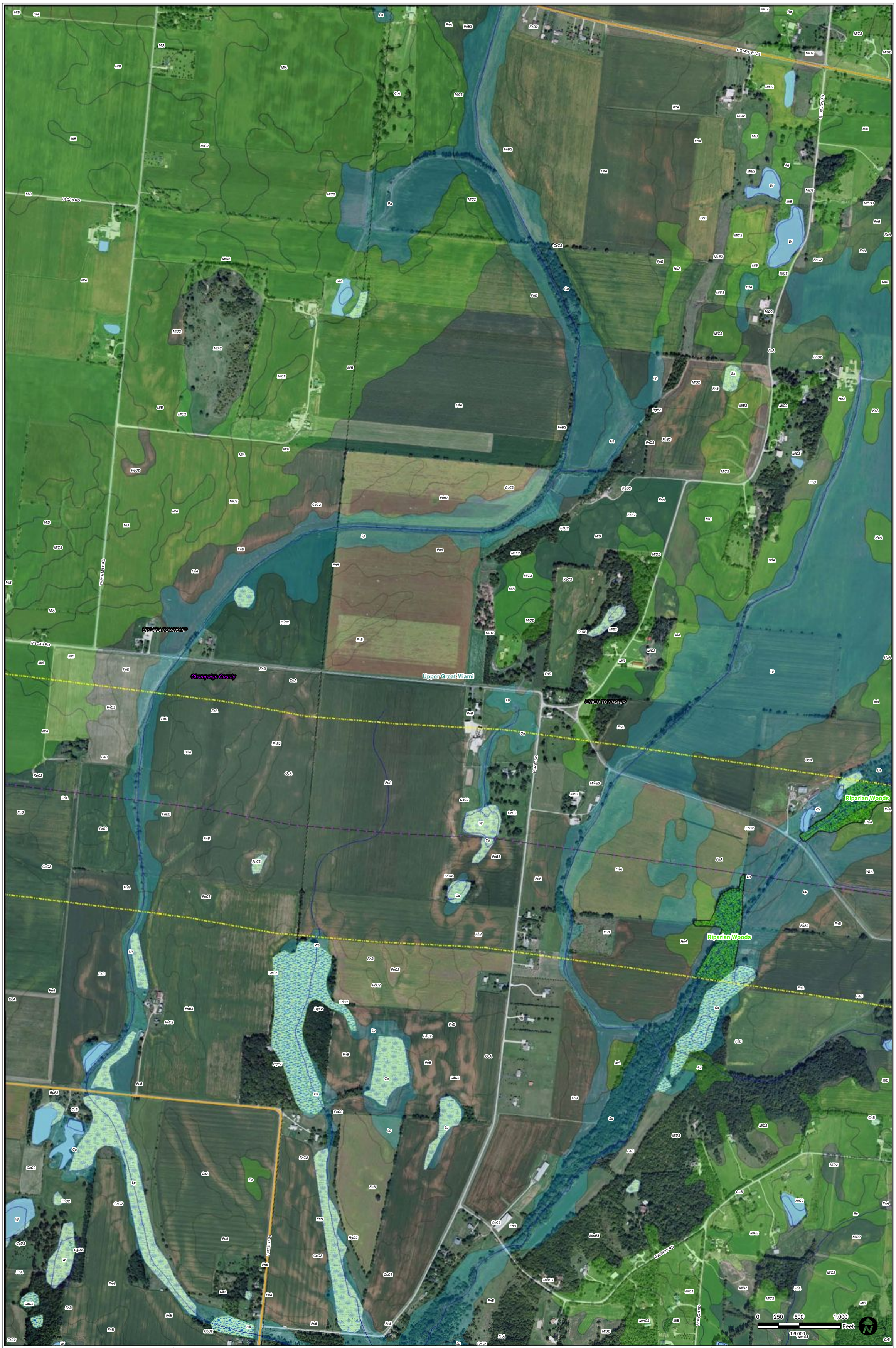

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid D2

Soils List

BsA	So	CnC2	HeB	MlB2	CcB	FnB	KeD2	MoF2	RgD2	
BsB	Wa	CrA	HoA	MlC	CcC2	FnB2	MlD	MrF2	RgF2	
Ca	Wn	CrB	IoA	MlC2	CgD2	FnC2	MlD2	MsE2	Ua	
Ed	Ag	CsB	IoB	MmC3	CmD2	FoC2	MlE	OcA	W	
Ln	CnA	Ee	KaA	Rn	FlB	KeA	MlE2	OcB	WrA	
Lp	CnB	Gn	MlA	Sh	FmB	KeB	MmD3	Pg	WrB	
Pa	CnB2	HeA	MlB	UnB	FnA	KeC2	MmE3	Pq	WsA	

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid D3

Soils List

BsA	So	CnC2	HeB	MIB2	CcB	FnB	KeD2	MoF2	RgD2
BsB	Wa	CrA	HoA	MIC	CcC2	FnB2	MID	MrF2	RgF2
Ca	Wn	CrB	IoA	MIC2	CgD2	FnC2	MID2	MsE2	Ua
Ed	Ag	CsB	IoB	MmC3	CmD2	FoC2	MIE	OcA	W
Ln	CnA	Ee	KaA	Rn	FIB	KeA	MIE2	OcB	WrA
Lp	CnB	Gn	MIA	Sh	FmB	KeB	MmD3	Pg	WrB
Pa	CnB2	HeA	MIB	UnB	FnA	KeC2	MmE3	Pq	WsA

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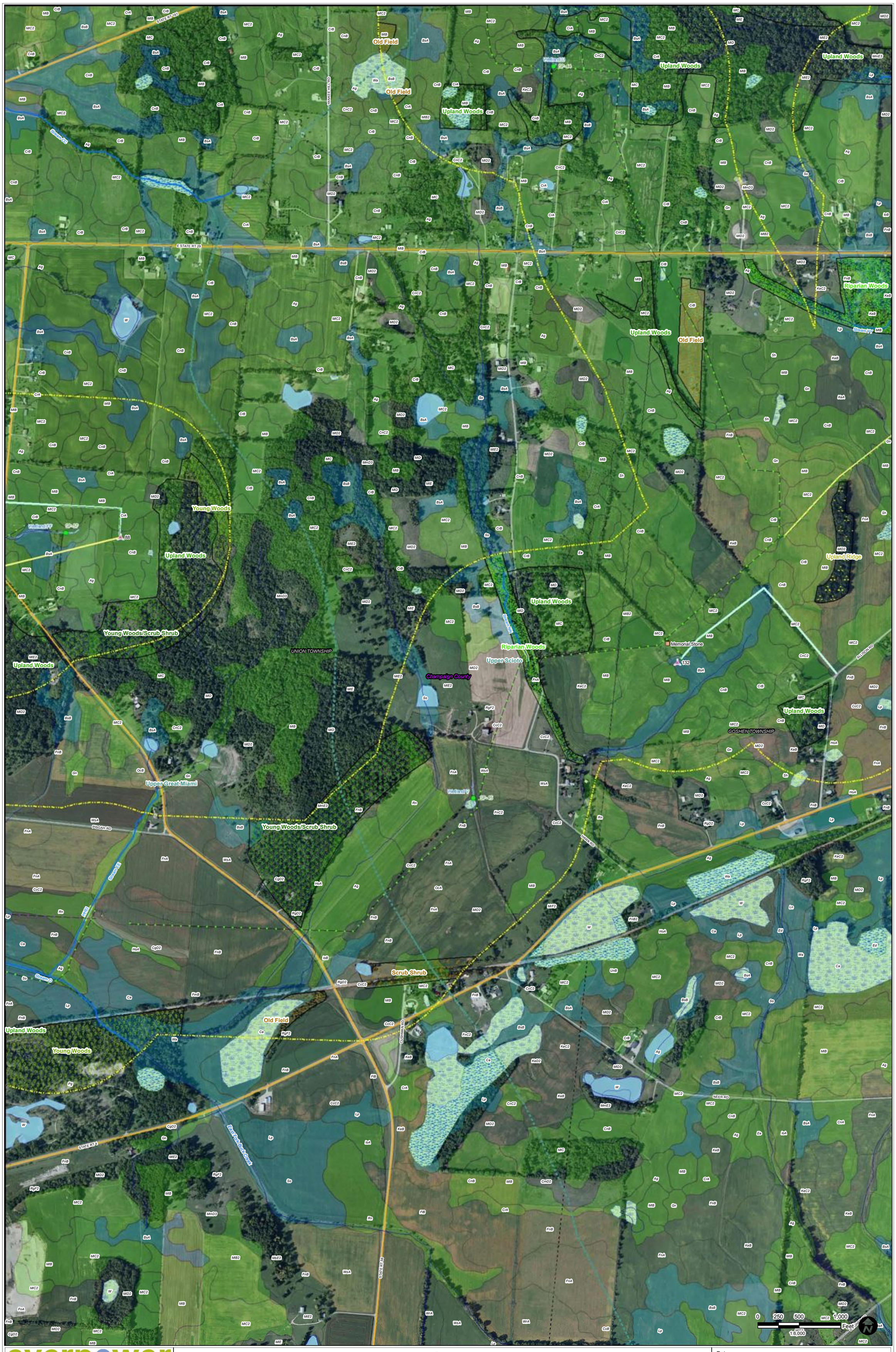

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid D4

Soils List

BsA	So	CnC2	HeB	MlB2	CcB	FnB	KeD2	MoF2	RgD2
BsB	Wa	CrA	HoA	MlC	CcC2	FnB2	MlD	MrF2	RgF2
Ca	Wn	CrB	IoA	MlC2	CgD2	FnC2	MlD2	MsE2	Ua
Ed	Ag	CsB	IoB	MmC3	CmD2	FoC2	MlE	OcA	W
Ln	CnA	Ee	KaA	Rn	FlB	KeA	MlE2	OcB	WrA
Lp	CnB	Gn	MlA	Sh	FmB	KeB	MmD3	Pg	WrB
Pa	CnB2	HeA	MlB	UnB	FnA	KeC2	MmE3	Pq	WsA

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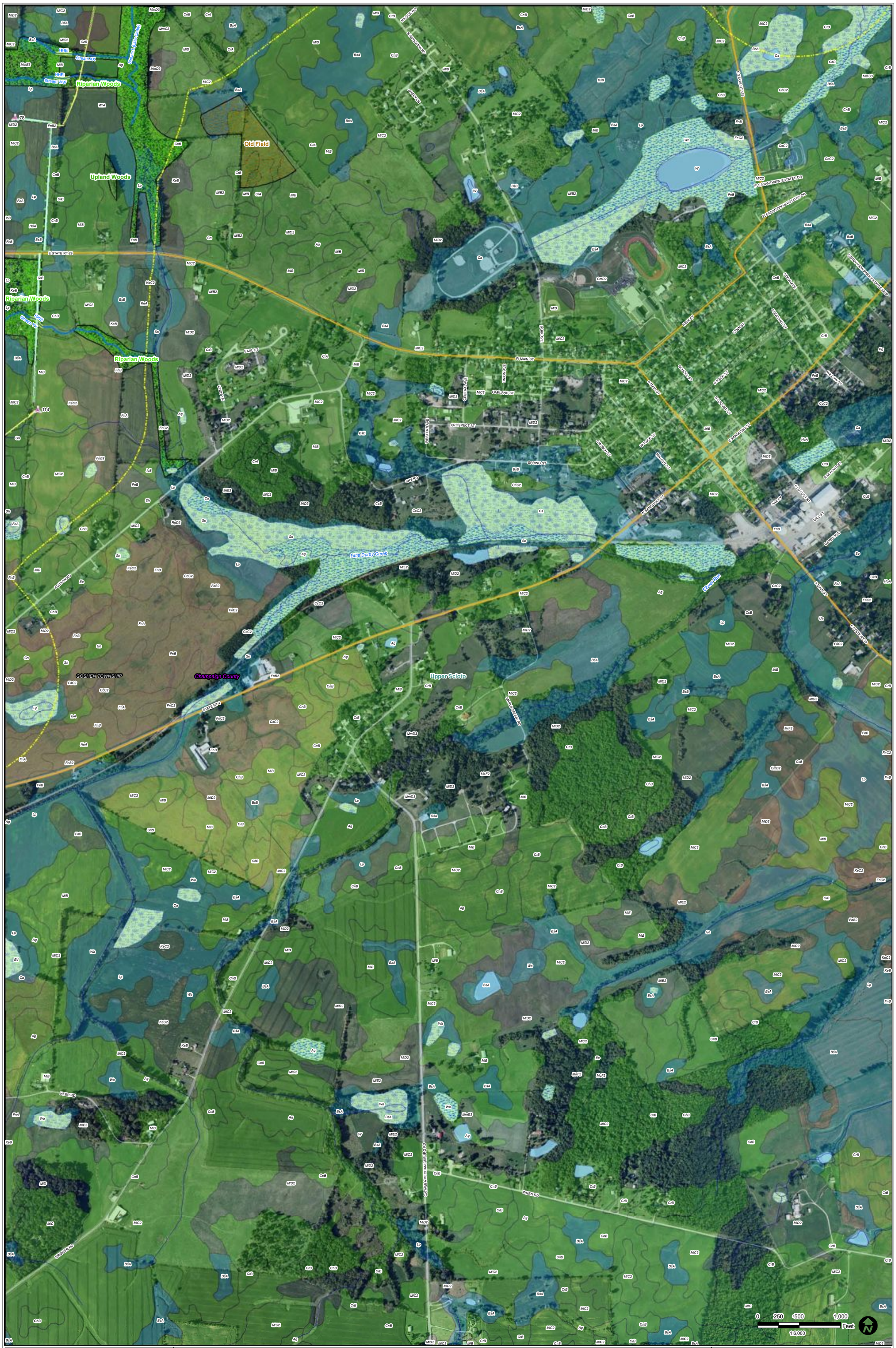

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Surface Water Delineation and Plant Communities within ¼ mile of Facility, with Soils - Grid D5

Soils List

BsA	So	CnC2	HeB	MlB2	CcB	FnB	KeD2	MoF2	RgD2	
BsB	Wa	CrA	HoA	MlC	CcC2	FnB2	MlD	MrF2	RgF2	
Ca	Wn	CrB	IoA	MlC2	CgD2	FnC2	MlD2	MsE2	Ua	
Ed	Ag	CsB	IoB	MmC3	CmD2	FoC2	MlE	OcA	W	
Ln	CnA	Ee	KaA	Rn	FlB	KeA	MlE2	OcB	WrA	
Lp	CnB	Gn	MlA	Sh	FmB	KeB	MmD3	Pg	WrB	
Pa	CnB2	HeA	MlB	UnB	FnA	KeC2	MmE3	Pq	WsA	

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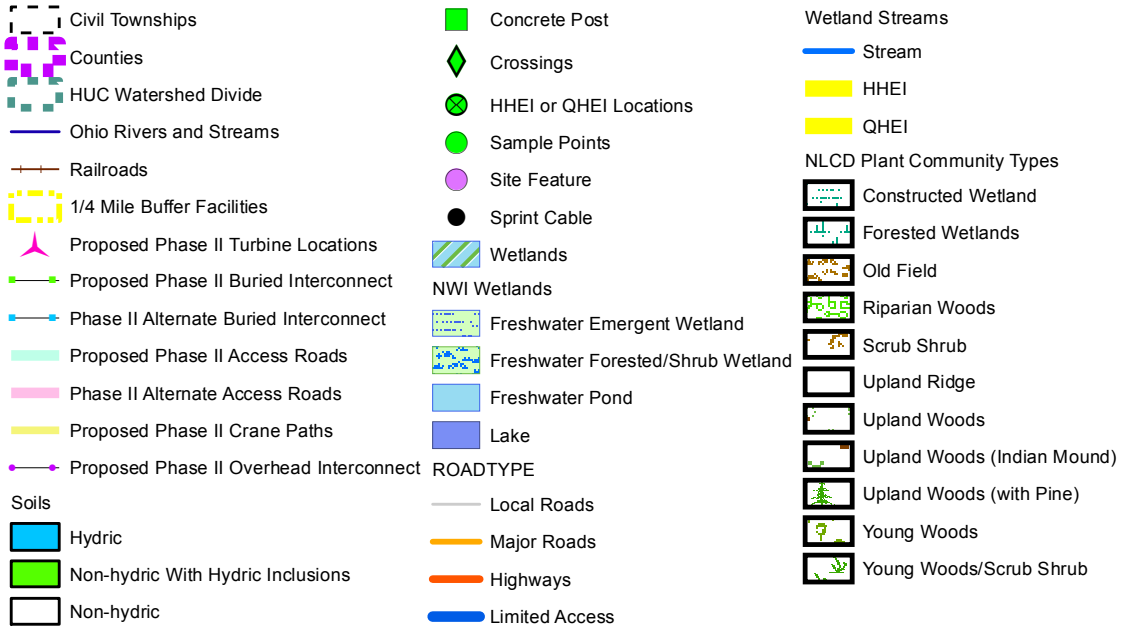

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Figure
19S

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APPENDIX A

Photographs

Photo 1. Stream D-2 looking upstream facing north.

Photo 2. Stream D-2 looking downstream facing south.

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Surface Water Delineation

Site Photographs

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Photo 3. Stream D-3 looking upstream facing north.

Photo 4. Stream D-3 looking downstream facing south.

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Photo 5: Stream D-4 looking upstream facing north.

Photo 6. Stream D-4 looking downstream facing south.

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Photo 7. Stream E, facing upstream looking southeast.

Photo 8. Stream E looking downstream.

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Photo 9. Stream F looking upstream.

Photo 10. Stream F looking downstream.

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Photo 11. Stream J-2 looking upstream facing east.

Photo 12. Stream J-2 looking downstream facing west.

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Photo 13. Stream L, looking upstream facing west.

Photo 14. Stream M looking upstream facing east.

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Photo 15. Stream O (East Fork Buck Creek) facing upstream.

Photo 16. Stream O (East Fork Buck Creek) facing downstream.

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Photo 17. Stream S gravel crossing in foreground.

Photo 18. Stream S facing upstream.

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Photo 19. Stream Y (Buck Creek) looking south.

Photo 20. View of substrate in Stream Y (Buck Creek).

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Photo 21. Stream Y-2 (Buck Creek) looking upstream.

Photo 22. Stream Y-2 (Buck Creek) looking downstream.

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Photo 23. Stream Y-3 (Buck Creek) looking upstream facing east.

Photo 24. Stream Y-3 looking downstream facing west.

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Photo 25. Stream Y-4 looking upstream facing east

Photo 26. Stream Y-4 looking downstream facing west.

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Photo 27. Stream AA-2 (Buck Creek) looking upstream facing north.

Photo 28. Stream AA-2 (Buck Creek) looking downstream facing south.

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Photo 29. Stream BB (Treacle Creek) looking upstream.

Photo 30. Stream BB-2 (Treacle Creek) looking upstream facing northeast.

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Photo 31. Stream BB-2 (Treacle Creek) looking downstream facing west.

Photo 32. Stream BB-3 (Treacle Creek) looking upstream facing west.

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Photo 33. Stream BB-3 (Treacle Creek) looking downstream facing east.

Photo 34. Stream CC looking upstream.

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Photo 35. Stream DD looking upstream.

Photo 36. View of Stream EE facing south.

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Photo 37. Stream II looking upstream facing northeast.

Photo 38. Stream II looking downstream facing southwest.

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Photo 39. Stream JJ looking upstream from on top of Stringtown Road facing north.

Photo 40. Stream JJ looking downstream from on top of Stringtown Road facing south.

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Photo 41. Steam MM looking downstream facing west.

Photo 42. Stream MM looking upstream facing east.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
February 2012

Project Number: EVP010
File Name: EVP010.300.0010

Photo 43. Stream NN looking upstream facing north.

Photo 44. Stream NN looking downstream facing south.

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Photo 45. Stream OO looking upstream facing northeast.

Photo 46. Stream OO looking downstream facing southwest.

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Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
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Photo 47. Culvert at the beginning of Stream PP looking upstream facing west.

Photo 48. Stream PP looking downstream facing east.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
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Project Number: EVP010
File Name: EVP010.300.0010

Photo 49. Stream QQ looking upstream facing northwest.

Photo 50. Stream QQ looking downstream facing east.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

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File Name: EVP010.300.0010

Photo 51. Stream SS looking upstream facing northeast.

Photo 52. Stream SS looking downstream facing southwest.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
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Project Number: EVP010
File Name: EVP010.300.0010

Photo 53. Stream TT looking upstream facing east.

Photo 54. Stream TT looking downstream facing west

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Photo 55. Stream UU looking upstream facing southwest.

Photo 56. Stream UU looking downstream facing northeast.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
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Project Number: EVP010
File Name: EVP010.300.0010

Photo 57. Stream VV looking upstream facing west.

Photo 58. Stream VV looking downstream facing east.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
February 2012

Project Number: EVP010
File Name: EVP010.300.0010

Photo 59. Stream WW looking upstream facing west.

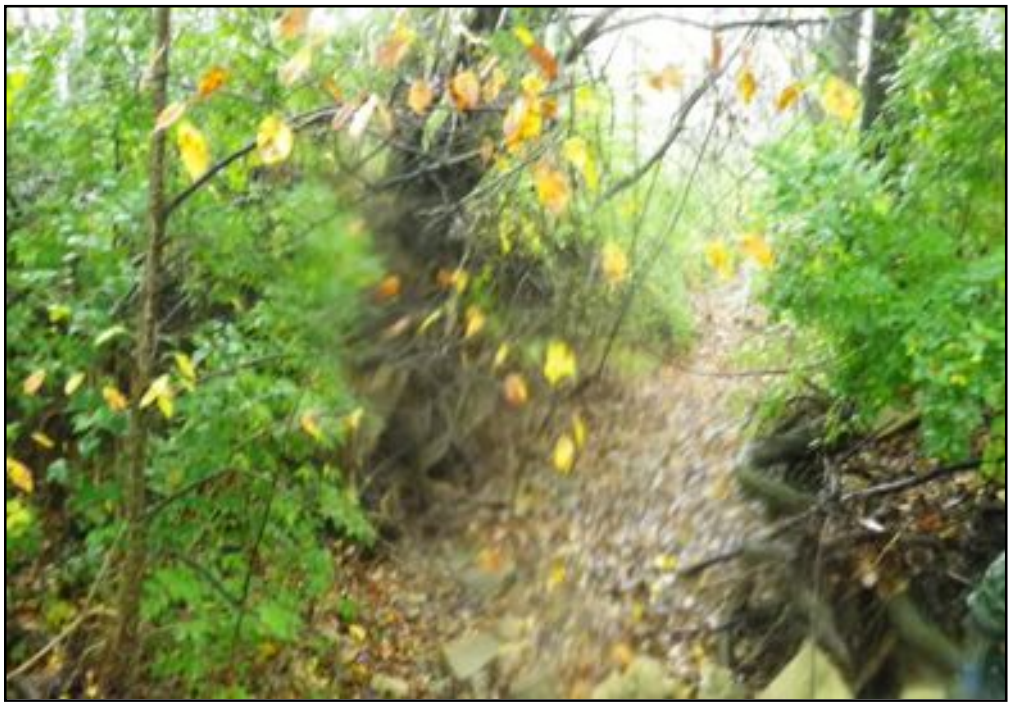

Photo 60. Stream WW looking downstream facing east.

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Photo 61. Stream XX looking upstream facing west.

Photo 62. Stream XX looking downstream facing east.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
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Project Number: EVP010
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Photo 63. Stream YY looking upstream facing southwest.

Photo 64. Stream YY looking downstream facing south.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date: February 2012

Project Number: EVP010
File Name: EVP010.300.0010

Photo 65. Stream ZZ looking upstream facing southeast.

Photo 66. Stream ZZ looking downstream facing northwest.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
February 2012

Project Number: EVP010
File Name: EVP010.300.0010

Photo 67. Stream ZZ-2 looking upstream facing south.

Photo 68. Stream ZZ-2 looking downstream.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
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Project Number: EVP010
File Name: EVP010.300.0010

Photo 69. Stream AAA.

Photo 70. Stream AAA looking downstream facing west.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
February 2012

Project Number: EVP010
File Name: EVP010.300.0010

Photo 71. Wetland J just south of State Route 36, facing northwest.

Photo 72. Wetland M looking northeast.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
December 2011

Project Number: EVP010
File Name: EVP010.300.0010

Photo 73. Wetland N looking east.

Photo 74. Wetland T facing east along State Route 161.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
December 2011

Project Number: EVP010
File Name: EVP010.300.0010

Photo 75. Wetland U facing north.

Photo 76. Wetland V facing north.

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Buckeye II Wind Farm
Surface Water Delineation

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Date:
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Project Number: EVP010
File Name: EVP010.300.0010

Photo 77. Wetland W facing northwest.

Photo 78. Wetland Y facing west.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
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Project Number: EVP010
File Name: EVP010.300.0010

Photo 79. Wetland Z facing west.

Photo 80. Wetland AA facing northwest.

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Photo 81. Wetland BB facing west.

Photo 82. Wetland CC facing northeast.

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Buckeye II Wind Farm
Surface Water Delineation

Site Photographs

Champaign County, Ohio

Date:
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Project Number: EVP010
File Name: EVP010.300.0010

Photo 83. Wetland DD facing north.

Photo 84. Wetland EE facing north.

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Photo 85. Wetland FF facing east.

Photo 86. Wetland GG facing northwest.

Photo 87. Wetland HH facing northwest.

Photo 88. Wetland II facing west.

Photo 89. Wetland JJ facing northeast.

Photo 90. Wetland KK facing south.

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Buckeye II Wind Farm
Surface Water Delineation

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Date:
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Photo 91. Wetland LL facing east.

Photo 92. Wetland MM facing southeast.

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Buckeye II Wind Farm
Surface Water Delineation

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Champaign County, Ohio

Date:
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Project Number: EVP010
File Name: EVP010.300.0010

Photo 99. Wetland NN facing east.

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Photo 99. Wetland NN facing east.

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APPENDIX B

Wetland Delineation Data Sheets

Routine Wetland Determination Form

Project/Site: Buckeye Wind Power Project **Applicant/Owner:** Everpower Inc. **Investigators:** K. Carr; S.M Harrelson	**Project #** EVP001	**Date:** 5/21/2008 **County:** Champaign **State:** Ohio

Do Normal circumstances exist on the site?	Yes	Sample Point # SP4a
Is the site significantly disturbed (Atypical Situation)?	No	Site Location: Wetland J
Is the area a potential Problem Area:	No	

VEGETATION **(USFWS Northeast Region No.1, Sub-Region, Great Lakes Plain)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 1/1 = 100 %
FAC Neutral Test: 1 > 0 = Pass

HYDROLOGY

☐ Recorded Data(Describe in Remarks):
- ☐ Stream, Lake or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Field Observations
- Total Depth of Pit or Auger: 12 in.
- Depth of Surface Water: 1 in.
- Depth to Free Water in Pit: - in.
- Depth to Saturated Soil: 0 in.

Wetland Hydrology Indicators
Primary Indicators
- ☒ Inundated
- ☒ Saturated in Upper 12 Inches
- ☐ Water Marks
- ☐ Drift Lines
- ☐ Sediment Deposits
- ☐ Drainage Patterns in Wetlands

Secondary Indicators
- ☐ Oxidized Root Channels in Upper 12 Inches
- ☐ Water-Stained Leaves
- ☐ Local Soil Survey Data
- ☒ FAC-Neutral Test
- ☐ Other(Explain in Remarks)

SOILS

Map Unit Name (Series and Phase):Algiers silt loam
Map Symbol:Ag Drainage Class: spd Map Unit Recognized as Hydric?: No
Taxonomy (Subgroup): Aquic Udifluvents Field Observations Confirm Mapped Type? No

Soil / Profile Description

Depth bgs (Inches)	Horizon	Matrix Color (Munsell Moist)	Mottle Color (Munsell Moist)	Mottle Abundance/Contrast	Texture, Concretions, Structure
0-7	A or Ap	10YR 3 / 2	None		sticky clay with high organics
8-12	A/B	10YR 3 / 2	10YR 4 / 4	very distinct	silty clay loam

- ☐ Histosol
- ☐ Histic Epipedon
- ☐ Sulfidic Odor
- ☐ Aquic Moisture Regime
- ☐ Reducing Conditions
- ☒ Gleyed or Low Chroma Colors
- ☐ Concretions
- ☐ High Organic Content in Surface Layer in Sandy Soils
- ☐ Organic Streaking in Sandy Soils
- ☐ Listed on Local Hydric Soils List
- ☐ Listed on National Hydric Soils List
- ☐ Other

WETLAND DETERMINATION

Hydrophytic Vegetation Present?	Yes	Is the Sample Point within a Wetland? Yes
Wetland Hydrology Present?	Yes	
Hydric Soils Present?	Yes	

Remarks:Hydrophytic vegetation, wetland hydrology, and hydric soils were observed at this sample location. This sample point is in a wetland.

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #SP4a
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Phalaris arundinacea	FACW+	Herb	90	100%	Yes
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	90		
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	0		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: Ever Power Project - Wetland M	**City/County:** Champaign	**Sampling Date:** 6/29/2011
Applicant/Owner: Ever Power Inc.	**State:** OH	**Sampling Point:** SP32
Investigator(s): B.M. Falkinburg / H.F. Crowell	**Section, Township, Range:** :	

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): Concave

Slope (%): Lat: Long: Datum:

Soil Map Unit Name: BsA, Brookston silty clay loam, 0-2% slopes | NWI classification:

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks).No

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

Hydrophytic Vegetation Present? Yes	**Is the Sampled Area**
Hydric Soil Present? Yes	**within a Wetland?** Yes
Wetland Hydrology Present? Yes	

Remarks: The required wetland criteria have been met.

VEGETATION (USFWS Region No. 1 - Northeast Sub-Region)

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 1/1 = 100 %

FAC Neutral Test: 1 > 0 = Pass

Prevalence Index =

Remarks: The hydrophytic vegetation criterion has been met.

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5Y3 / 3	100					silt loam	
1-13	2.5Y4 / 2	80	7.5YR 3 / 4	20			silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type:

Depth: (Inches):

Hydric Soil Present? Yes

Soil pit dug? Yes

(If yes select one): 1" Probe

Remarks: The Hydric Soil Criterion has been met.

Routine Wetland Determination Form

Sampling Date: 6/29/2011
Sampling Point: SP32

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present? No Depth (inches):

Water Table Present? No Depth (inches):

Saturation Present? (includes capillary fringe) No Depth (inches):

Wetland Hydrology Present? Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: The wetland hydrology criterion has been met.

Wetland appears to be isolated with no observed inlet or outlet.

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT # SP32
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Phalaris arundinacea	FACW+	Herb	97	97%	Yes
Carex tribuloides	FACW+	Herb	1	1%	
Carex vulpinoidea	OBL	Herb	1	1%	
Glyceria striata	OBL	Herb	1	1%	
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	0		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: Ever Power Project - Wetland N	**City/County:** Champaign	**Sampling Date:** 6/29/2011
Applicant/Owner: Ever Power Inc.	**State:** OH	**Sampling Point:** SP33
Investigator(s): B.M. Falkinburg / H.F. Crowell	**Section, Township, Range: :**	

Landform (hillslope, terrace, etc.): Swale | Local relief (concave, convex, none): Concave

Slope (%): Lat: Long: Datum:

Soil Map Unit Name: BsA, Brookston silty clay loam, 0-2% slopes | NWI classification:

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

Are Vegetation ☐, Soil ☒, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? No

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.) No

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

Hydrophytic Vegetation Present? Yes	**Is the Sampled Area**
Hydric Soil Present? No	**within a Wetland?** Yes
Wetland Hydrology Present? Yes	

Remarks: Recently graded drainage swale (w/in 12 months) - man made or man-induced wetland comprised of a grassy waterway in agriculture field with dominance of hydrophytic vegetation and evidence of hydrology, but disturbed and mixed soils. BsA is an NRCS mapped hydric soil unit for Champaign County, Ohio. Thus, the required wetland criteria have been met.

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 3/3 = 100 %

FAC Neutral Test: 2 > 0 = Pass

Prevalence Index =

Remarks: The hydrophytic vegetation criterion has been met.

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12							silty clay loam	mixed subsoil fill

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 (F3)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☒ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type:

Depth: (inches):

Hydric Soil Present? Yes

Soil pit dug? Yes

(If yes select one): 1" Probe

Remarks: Sample Plot within a mapped hydric soil unit, soil sample mixed and disturbed, man-induced wetland per 1987 manual. Assumed hydric soils.

Routine Wetland Determination Form

Sampling Date: 6/29/2011
Sampling Point: SP33

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	No	Depth (inches):	
Water Table Present?	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	No	Depth (inches):	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: The wetland hydrology criterion has been met.

Wetland appears to be non-isolated, outlets to wetland ditch in upland woods to east and eventually drains through agriculture fields off site to Stream S.

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT # SP33
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Echinochloa muricata	FACW+	Herb	90	90%	Yes
Eleocharis obtusa	OBL	Herb	8	8%	
Carex squarrosa	FACW	Herb	2	2%	
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
Salix nigra	FACW+	Shrub/Sap	1	50%	Yes
Populus deltoides	FAC	Shrub/Sap	1	50%	Yes
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	2		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase I	**City/County:** Champaign Co.	**Sampling Date:** 10/13/11
Applicant/Owner: Everpower	**State:** OH	**Sampling Point:** SP43
Investigator(s): BMF	**Section, Township, Range:**	

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): CONCAVE

Slope (%):0-2 Lat: 40.08898 Long: 83.803689 Datum: WGS 1984

Soil Map Unit Name: Brookston silty clay loam | NWI classification: PEMIC

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.) No

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

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area**
Hydric Soil Present?	Yes	**within a Wetland?** Yes
Wetland Hydrology Present?	Yes	

Remarks: Wetland T, ten flags, isolated

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 3/3 = 100 %

FAC Neutral Test: 3 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y5 / 1	80	2.5Y4 / 2	20			SILT LOAM	DAMP
6-12	2.5Y4 / 1	90	2.5Y5 / 2	10			SILT LOAM	CONCENTRATIONS

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type:

Depth: (inches):

Hydric Soil Present? Yes

Soil pit dug? Yes

(If yes select one): 1" Probe

Remarks: Hydric soil is present

Routine Wetland Determination Form

Sampling Date: 10/13/11
Sampling Point: SP43

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)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	No	Depth (inches):	
Water Table Present?	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	No	Depth (inches):	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Three secondary indicators of wetland hydrology are present.

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #43
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Typha latifolia	OBL	Herb	50	50%	Yes
Polygonum pensylvanicum	FACW	Herb	30	30%	Yes
Cyperus esculentus	FACW	Herb	3	3%	
Lactuca serriola	FAC-	Herb	10	10%	
Echinochloa crusgalli	FACU	Herb	1	1%	
Setaria faberi	UPL	Herb	1	1%	
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
Acer saccharinum	FACW	Shrub/Sap	10	100%	Yes
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	10		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase I **Applicant/Owner:** Everpower **Investigator(s):** BMF	**City/County:** Champaign Co. **State:** OH **Section, Township, Range:** :	**Sampling Date:** 10/13/11 **Sampling Point:** SP44

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):

Slope (%):0-2 Lat: 40.08450 Long: 83.601255 Datum: WGS 1984

Soil Map Unit Name: Brookston silty clay loam | NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks).No

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

Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	**Is the Sampled Area within a Wetland?** Yes

Remarks: Wetland U, 5 flags, isolated

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 2/2 = 75 %

FAC Neutral Test: 1 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	10YR 3 / 1	85	10YR 4 / 4	15			SILT LOAM	DARP
7-12	2.5Y3 / 1	95	2.5Y5 / 3	5			SILTY CLAY	DARP

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils*:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type:

Depth: (inches):

Hydric Soil Present? Yes

Soil pit dug? Yes

(If yes select one): T' Probe

Remarks: Hydric soil is present

Routine Wetland Determination Form

Sampling Date: 10/13/11
Sampling Point: SP44

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	No	Depth (inches):	
Water Table Present?	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	No	Depth (inches):	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Two secondary hydrologic indicators are present.

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT 444
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Lactuca serriola	FAC	Herb	10	20%	Yes
Typha latifolia	OBL	Herb	40	47%	Yes
Echinochloa muricata	FACW+	Herb	8	6%	
Eglobrum coloratum	OBL	Herb	20	10%	
Lycopus uniflorus	OBL	Herb	5	1%	
Setaria faberi	UPL	Herb	1	1%	
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	86		
Ulmus americana	FACW-	Shrub/Sap	3	100%	No
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	3		
Fraxinus pennsylvanica	FACW	Tree	1	100%	No
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	1		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVPC10 Phase I	**City/County:** Champaign Co.	**Sampling Date:** 10/13/11
Applicant/Owner: Everpower	**State:** OH	**Sampling Point:** SP45
Investigator(s): BMF	**Section, Township, Range:**	

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):

Slope (%):0-3 Lat: 40.06022 Long: 83.60437 Datum: WGS 1984

Soil Map Unit Name: Wea silt loam | NWI classification: PEMIA

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks).No

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

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area**
Hydric Soil Present?	Yes	**within a Wetland?** Yes
Wetland Hydrology Present?	Yes	

Remarks: Wetland V, isolated

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 2/2 = 100 %

FAC Neutral Test: 2 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3 / 1	100					silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type:

Depth: (inches):

Hydric Soil Present? Yes

Soil pit dug? Yes

(If yes select one): 1' Probe

Remarks: Hydric soil is present

Routine Wetland Determination Form

Sampling Date: 10/13/11
Sampling Point: SP45

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present? Yes Depth (inches): 12"

Water Table Present? Yes Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes Depth (inches): Surface **Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Four primary and one secondary indicator of wetland hydrology are present.

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #45
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Typha latifolia	FACW	Herb	30	30%	Yes
Echinochloa muricata	FACW+	Herb	30	30%	Yes
Leersia oryzoides	OBL	Herb	10	10%	
Schoenoplectus tabernaemontani	OBL	Herb	5	5%	
Lemna minor	OBL	Herb	5	5%	
Bidens cernua	OBL	Herb	15	15%	
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	0		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase II **Applicant/Owner:** Everpower **Investigator(s):** BMF	**City/County:** Champaign Co. **State:** OH **Section, Township, Range:**	**Sampling Date:** 10/17/11 **Sampling Point:** SP48

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): CONCAVE

Slope (%): 0-2 Lat: 40.14753 Long: 83.620396 Datum: WGS 1984

Soil Map Unit Name: Brookston silty clay loam | NWI classification: PEMAC

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.) No

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

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area**
Hydric Soil Present?	Yes	**within a Wetland?** Yes
Wetland Hydrology Present?	Yes	

Remarks: In a pasture, low spot, concave surface, isolated; Wetland W, 6 flags

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 3/4 = 75 %

FAC Neutral Test: 3 > 1 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y3 / 1	100					silt loam	damp

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):
Type:
Depth: (inches):

Hydric Soil Present? Yes
Soil pit dug? Yes
(If yes select one): 1" Probe

Remarks: Hydric soil is present

Routine Wetland Determination Form

Sampling Date: 10/17/11
Sampling Point: SP-66

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)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	No	Depth (inches):	
Water Table Present?	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	No	Depth (inches):	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Three secondary hydrologic indicators are present

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #46
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Eleocharis obtusa	OBL	Herb	10	25%	Yes
Rubus cernua	OBL	Herb	10	25%	Yes
Polygonum hydropiperoides	OBL	Herb	10	25%	Yes
Echinochloa crusgalli	FACU	Herb	10	25%	Yes
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	60		
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	0		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase II **Applicant/Owner:** Everpower **Investigator(s):** BMF	**City/County:** Champaign Co. **State:** OH **Section, Township, Range:** :	**Sampling Date:** 10/18/11 **Sampling Point:** SP50

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):

Slope (%):0-2 Lat: 40.132701 Long: 83.645795 Datum: WGS 1984

Soil Map Unit Name: Brookston silty clay loam | NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks).No

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

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area**
Hydric Soil Present?	Yes	**within a Wetland?** Yes
Wetland Hydrology Present?	Yes	

Remarks: All three criteria met - wetland. Wetland Y, non-isolated, 39 flags
Linear ditch wetland

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 1/1 = 100 %

FAC Neutral Test: 1 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plany community is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7	2.5Y3 / 1	93	2.5Y6 / 4	2			silt loam	saturated
			2.5Y6 / 6	5				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):
Type: gravel
Depth: (inches): 7"

Hydric Soil Present? Yes
Soil pit dug? Yes
(If yes select one): 1" Probe

Remarks: Hydric soil is present

Routine Wetland Determination Form

Sampling Date: 10/18/11
Sampling Point: SP50

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
☒ Surface Water (A1)	☐ Water-Stained Leaves (B9)	☐ Surface Soil Cracks (B6)
☐ High Water Table (A2)	☐ Aquatic Fauna (B13)	☒ Drainage Patterns (B10)
☒ Saturation (A3)	☐ True Aquatic Plants (B14)	☐ Dry-Season Water Table (C2)
☐ Water Marks (B1)	☒ Hydrogen Sulfide Odor (C1)	☐ Crayfish Burrows (C8)
☐ Sediment Deposits (B2)	☐ Oxidized Rhizospheres on Living Roots (C3)	☒ Saturation Visible on Aerial Imagery (C9)
☐ Drift Deposits (B3)	☐ Presence of Reduced Iron (C4)	☐ Geomorphic Position (D2)
☐ Algal Mat or Crust (B4)	☐ Recent Iron Reduction in Tilled Soils (C6)	☒ FAC-Neutral Test (D5)
☐ Iron Deposits (B5)	☐ Thin Muck Surface (C7)	☐ Other (Explain in Remarks)
☐ Inundation Visible on Aerial Imagery (B7)	☐ Gauge or Well Data (D9)	
☐ Sparsely Vegetated Concave Surface (B8)	☐ Other (Explain in Remarks)	

Field Observations:

Surface Water Present?	Yes	Depth (inches): 1"	
Water Table Present?	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	Depth (inches): 0-7"	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Three primary and three secondary hydrologic indicators are present

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #50
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Phalaris arundinacea	FACW	Herb	99	99%	Yes
Typha latifolia	OBL	Herb	1	1%	
Scirpus hallorianus	NI	Herb	1	1%	
Eleocharis obtusa	OBL	Herb	1	1%	
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	0		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase II **Applicant/Owner:** Everpower **Investigator(s):** BMF	**City/County:** Champaign Co. **State:** OH **Section, Township, Range:** :	**Sampling Date:** 10/18/11 **Sampling Point:** SP01

Landform (hillslope, terrace, etc.): swale — Local relief (concave, convex, none):

Slope (%):0-2 — Lat: 40.133716 — Long: 83.641995 — Datum: WGS 1984

Soil Map Unit Name: Brookston silty clay loam — NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)No

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

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area**
Hydric Soil Present?	Yes	**within a Wetland?** Yes
Wetland Hydrology Present?	Yes	

Remarks: Wetland Z, non-isolated, 13 flags

VEGETATION — **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 1/1 = 100 %

FAC Neutral Test: 1 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community is present

SOIL — **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4 / 1	85	7.5YR 4 / 4	15			silt	clamp, concentrations
8-10	2.5Y2.5 /1	50	5 / 1	30				5GY 5/1: redox color
			7.5YR 5 / 6	10				
			10YR 7 / 2	10				

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 (F3)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):
Type: gravel/sand
Depth: (inches): 10"

Hydric Soil Present? Yes
Soil pit dug? Yes
(If yes select one): 1" Probe

Remarks: Hydric soil is present

Routine Wetland Determination Form

Sampling Date: 10/18/11
Sampling Point: SPS1

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	No	Depth (Inches):	
Water Table Present?	No	Depth (Inches):	
Saturation Present? (Includes capillary fringe)	Yes	Depth (Inches): 12"	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Thress secondary hydrologic indicators are present

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #01
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Phalaris arundinacea	FACW	Herb	95	95%	Yes
Xanthium strumarium	FAC	Herb	2	2%	
Echinochloa muricata	FACW+	Herb	3	3%	
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	0		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase II	**City/County:** Champaign Co.	**Sampling Date:** 10/18/11
Applicant/Owner: Everpower	**State:** OH	**Sampling Point:** SP02
Investigator(s): BMF	**Section, Township, Range:**	

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):

Slope (%)0-2 Lat: 40.130755 Long: 83.639023 Datum: WGS 1984

Soil Map Unit Name: Brookston silty clay loam | NWI classification: PSS/1C

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)No

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

Hydrophytic Vegetation Present? Yes	**Is the Sampled Area**
Hydric Soil Present? Yes	**within a Wetland?** Yes
Wetland Hydrology Present? Yes	

Remarks: Wetland AA, isolated, 8 flags

VEGETATION (USFWS Region No. 1 - Northeast Sub-Region)

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 3/3 = 100 %

FAC Neutral Test: 2 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(Inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y5 / 2	85	10YR 5 / 6	15			silt loam	damp
3-10	4 / 1	60	7.5YR 4 / 6	40			silt loam	5Y 4/1;matrix color; damp
10-12	2.5Y4 / 1	80	10YR 5 / 4	20			silty clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type:

Depth: (inches):

Remarks: Hydric soil is present

Hydric Soil Present? Yes

Soil pit dug? Yes

(If yes select one): 1" Probe

Routine Wetland Determination Form

Sampling Date: 10/18/11
Sampling Point: SP02

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present? No Depth (Inches):

Water Table Present? No Depth (Inches):

Saturation Present? (includes capillary fringe) No Depth (Inches): **Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: One primary and two secondary indicators present

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #52
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Phalaris arundinacea	FACW	Herb	100	100%	Yes
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
Fraxinus pennsylvanica	FACW	Shrub/Sap	10	100%	Yes
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	10		
Gleditsia triacanthos	FAC-	Tree	5	100%	Yes
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	5		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase II	**City/County:** Champaign Co.	**Sampling Date:** 10/18/11
Applicant/Owner: Everpower	**State:** OH	**Sampling Point:** SP53
Investigator(s): BMF	**Section, Township, Range:**	

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none): concave

Slope (%):2-6 Lat: 40.129958 Long: 83.637268 Datum: WGS 1984

Soil Map Unit Name: Brookston silty clay loam | NWI classification: PUBGh

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)No

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

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area**	
Hydric Soil Present?	Yes	**within a Wetland?**	Yes
Wetland Hydrology Present?	Yes		

Remarks: Wetland B9, Isolated, 11 flags

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 2/2 = 100 %

FAC Neutral Test: 2 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	2.5Y3 / 1	100					silt loam	dry
6-12		90	10YR 5 / 4	5			silty clay	Grey N 3/ matrix color; distinct concentrations
			10YR 6 / 4	5			silty clay	distinct concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):
Type:
Depth: (inches):

Hydric Soil Present? Yes
Soil pit dug? Yes
(If yes select one): 1" Probe

Remarks: Hydric soil is present

Routine Wetland Determination Form

Sampling Date: 10/18/11
Sampling Point: SPS3

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	Yes	Depth (inches): N/A	
Water Table Present?	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	Depth (inches): surface	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Five primary and one secondary hydrologic indicator were present

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #53
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Phalaris arundinacea	FACW	Herb	85	95%	Yes
Xanthium strumarium	FAC	Herb	3	3%	
Toxicodendron radicans	FAC	Herb	2	2%	
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	0		
Salix nigra	FACW+	Tree	25	83%	Yes
Populus deltoides	FAC	Tree	5	17%	
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	30		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase II **Applicant/Owner:** Everpower **Investigator(s):** BMF	**City/County:** Champaign Co. **State:** OH **Section, Township, Range:**	**Sampling Date:** 10/19/11 **Sampling Point:** SP54

Landform (hillslope, terrace, etc.):
Local relief (concave, convex, none):
Slope (%):0-2 Lat: 40.091213 Long: 83.573160 Datum: WGS 1984
Soil Map Unit Name: Brookston silty clay loam NWI classification: None
Are climatic/hydrologic conditions on the site typical for this time of year? Yes (If no, explain in Remarks.)
Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes
Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks).No

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

Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	**Is the Sampled Area within a Wetland?** Yes

Remarks: Wetland CC, non-isolated, 6 flags

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 1/1 = 100 %
FAC Neutral Test: 1 > 0 = Pass
Prevalence Index =
Remarks: Hydrophytic vegetation is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5Y2.5 /1	100					silt loam	damp

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:
- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:
- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):
Type:
Depth: (inches):

Hydric Soil Present? Yes
Soil pit dug? Yes
(If yes select one): ½" Probe

Remarks: Hydric soil is present

Routine Wetland Determination Form

Sampling Date: 10/19/11
Sampling Point: SP54

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present? No Depth (inches):

Water Table Present? No Depth (inches):

Saturation Present? (includes capillary fringe) No Depth (inches): **Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Two secondary indicators of hydrology are present.

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #54
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Phalaris arundinacea	FACW	Herb	99	99%	Yes
Apocynum cannabinum	FACU	Herb	1	1%	
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
Ulmus americana	FACW-	Shrub/Sap	1	33%	
Acer saccharinum	FACW	Shrub/Sap	2	67%	
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	3		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase II	**City/County:** Champaign Co.	**Sampling Date:** 10/19/11
Applicant/Owner: Everpower	**State:** OH	**Sampling Point:** SP05
Investigator(s): BMF	**Section, Township, Range:**	

Landform (hillslope, terrace, etc.): depression | Local relief (concave, convex, none): concave

Slope (%):2-6 Lat: 40.94838 Long: 83.565821 Datum: WGS 1984

Soil Map Unit Name: Miami Silt Loam | NWI classification: PSS1C

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks).No

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

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area**
Hydric Soil Present?	Yes	**within a Wetland?** Yes
Wetland Hydrology Present?	Yes	

Remarks: Wetland DO, isolated

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 4/4 = 100 %

FAC Neutral Test: 2 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	2.5Y4 / 1	100						organics
1-9	10YR 5 / 2	70	10YR 5 / 8	30				dry/crumbly; distinct concentrations Fe & Mn
9-12	10YR 5 / 2	60	10YR 5 / 8	40				Distinct redox concent.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type:

Depth: (inches):

Hydric Soil Present? Yes

Soil pit dug? Yes

(If yes select one): 1" Probe

Remarks: Hydric soil is present

Routine Wetland Determination Form

Sampling Date: 10/19/11
Sampling Point: SP55

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)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present? No Depth (inches):

Water Table Present? No Depth (inches):

Saturation Present? (includes capillary fringe) No Depth (inches): **Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: One primary and three secondary indicators of hydrology are present

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #55
Attachment to Routine Wetland Determination Data Form
Hall & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Toxicodendron radicans	FAC	Herb	10	100%	Yes
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	10		
Fraxinus pennsylvanica	FACW	Shrub/Sap	5	100%	Yes
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	5		
Populus deltoides	FAC	Tree	65	65%	Yes
Salix nigra	FACW+	Tree	25	25%	Yes
Fraxinus pennsylvanica	FACW	Tree	10	10%	
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	100		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase II **Applicant/Owner:** Everpower **Investigator(s):** BMF	**City/County:** Champaign Co. **State:** OH **Section, Township, Range: :**	**Sampling Date:** 10/19/11 **Sampling Point:** SP56

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):

Slope (%):2-6 Lat: 40.103479 Long: 83.55515 Datum: WGS 1984

Soil Map Unit Name: Brookston silty clay loam | NWI classification: PEM1C

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks).No

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

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area**
Hydric Soil Present?	Yes	**within a Wetland?** Yes
Wetland Hydrology Present?	Yes	

Remarks: Wetland EE, non-isolated, 4 flags

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 1/1 = 100 %

FAC Neutral Test: 1 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5 /	100					silty	Matrix color: Gley 2.5/ ; organic/hisfoky

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):
Type:
Depth: (inches):

Hydric Soil Present? Yes
Soil pit dug? Yes
(If yes select one): 1" Probe

Remarks: Hydric soil is present

Routine Wetland Determination Form

Sampling Date: 10/19/11
Sampling Point: SP56

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	Yes	Depth (inches): 1"	
Water Table Present?	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	Depth (inches):	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Three primary and three secondary hydrologic indicators are present

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #36
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Phalaris arundinacea	FACW	Herb	85	85%	Yes
Typha latifolia	OBL	Herb	18	18%	
Carex stricta	OBL	Herb	15	15%	
Solrgus altoviana	OBL	Herb	2	2%	
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	0		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase II	**City/County:** Champaign Co.	**Sampling Date:** 10/20/11
Applicant/Owner: Everpower	**State:** OH	**Sampling Point:** SP57
Investigator(s): BMF	**Section, Township, Range:** :	

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):

Slope (%):0-2 Lat: 40.068687 Long: 83.624228 Datum: WGS 1984

Soil Map Unit Name: Brookston silty clay loam | NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks).No

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

Hydrophytic Vegetation Present? Yes	**Is the Sampled Area**
Hydric Soil Present? Yes	**within a Wetland?** Yes
Wetland Hydrology Present? Yes	

Remarks: Wetland FF, adjacent, 22 flags

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 2/2 = 100 %

FAC Neutral Test: 1 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features				Texture	Remarks
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]		
0-6	2.5Y3 / 1	100					silty clay	
6-12	3 / 1	90	10YR 5 / 6	10			silty clay	Matrix color: 5Y 3/1; damp

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type:

Depth: (inches):

Remarks: Hydric soil is present

Hydric Soil Present? Yes

Soil pit dug? Yes

(If yes select one): T Probe

Routine Wetland Determination Form

Sampling Date: 10/20/11
Sampling Point: SP57

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	No	Depth (inches):	
Water Table Present?	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	No	Depth (inches):	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Two secondary indicators of hydrology are present.

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #67
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Phalaris arundinacea	FACW	Herb	100	100%	Yes
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
Populus deltoides	FAC	Shrub/Sap	5	100%	Yes
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	5		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVPC10 Phase I **Applicant/Owner:** Everpower **Investigator(s):** BMF	**City/County:** Champaign Co. **State:** OH **Section, Township, Range:**	**Sampling Date:** 10/20/11 **Sampling Point:** SP58

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):

Slope (%):2-6 Lat: 40.06983 Long: 83.629194 Datum: WGS 1984

Soil Map Unit Name: Brookston silty clay loam | NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)No

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

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area**
Hydric Soil Present?	Yes	**within a Wetland?** Yes
Wetland Hydrology Present?	Yes	

Remarks: Linear wetland ditch; Wetland GG, 25 flagsHydrophytic plant community is present

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 3/3 = 100 %

FAC Neutral Test: 3 > 0 = Pass

Prevalence Index =

Remarks:

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	4 / 1	100					silt loam	Matrix color: 5Y 4/1; redox on roots

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):
Type:
Depth: (inches):

Hydric Soil Present? Yes
Soil pit dug? Yes
(If yes select one): 1" Probe

Remarks: Hydric soil is present

Routine Wetland Determination Form

Sampling Date: 10/20/11
Sampling Point: SPS8

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	No	Depth (Inches):	
Water Table Present?	No	Depth (Inches):	
Saturation Present? (includes capillary fringe)	Yes	Depth (Inches): surface	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: One primary and two secondary indicators of wetland hydrology are present.

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #58
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Phalaris arundinacea	FACW	Herb	80	80%	Yes
Carex frankii	OBL	Herb	10	10%	
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
Salix nigra	FACW+	Shrub/Sap	20	50%	Yes
Salix exigua	OBL	Shrub/Sap	20	50%	Yes
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	40		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase II **Applicant/Owner:** Everpower **Investigator(s):** BMF/KMH	**City/County:** Champaign Co. **State:** OH **Section, Township, Range:** :	**Sampling Date:** 12-12-11 **Sampling Point:** SP59

Landform (hillslope, terrace, etc.): Local relief (concave, convex, none):

Slope (%): Lat: 40.13334 Long: 83.64951 Datum: WGS 1984

Soil Map Unit Name: NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.) No

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

Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	**Is the Sampled Area within a Wetland?** Yes

Remarks: Wetland HH, non-isolated

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 1/1 = 100 %

FAC Neutral Test: 1 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 3 / 2	95	7.5YR 4 / 6	5	C	M	silt loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):
Type:
Depth: (inches):

Hydric Soil Present? Yes
Soil pit dug? Yes
(If yes select one): 1" Probe

Remarks: Hydric soil is present by indicator F3

Routine Wetland Determination Form

Sampling Date: 12-12-11
Sampling Point: SP59

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	No	Depth (inches):	
Water Table Present?	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	No	Depth (inches):	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Hydrology is present by two secondary indicators.

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #59
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Phalaris arundinacea	FACW	Herb	100	100%	Yes
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	0		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase II **Applicant/Owner:** Everpower **Investigator(s):** BMF/KMH	**City/County:** Champaign Co. **State:** OH **Section, Township, Range:**	**Sampling Date:** 12-12-11 **Sampling Point:** SPND

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):

Slope (%): Lat: 40.127117 Long: 83.63632 Datum: WGS 1984

Soil Map Unit Name: | NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks).No

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

Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	**Is the Sampled Area within a Wetland?** Yes

Remarks: Wetland IL isolated

VEGETATION (USFWS Region No. 1 - Northeast Sub-Region)

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 1/1 = 100 %

FAC Neutral Test: 1 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR 3 / 2	93	7.5YR 5 / 8	5	C	M	silt loam	
			7.5YR 6 / 6	2	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils*:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type:

Depth: (inches):

Hydric Soil Present? Yes

Soil pit dug? Yes

(If yes select one): 1" Probe

Remarks: Hydric soil is present by indicator F3

Routine Wetland Determination Form

Sampling Date: 12-12-11
Sampling Point: SP60

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)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present? Yes — Depth (inches): 6

Water Table Present? No — Depth (inches):

Saturation Present? (includes capillary fringe) Yes — Depth (inches): surface — **Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Hydrology is present by two primary indicators and two secondary indicators.

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #60
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Boehmeria cylindrica	FACW	Herb	98	98%	Yes
Salsola tuberi	UPL	Herb	2	2%	
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	0		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVPS10 Phase I **Applicant/Owner:** Everpower **Investigator(s):** BB/FKM/H	**City/County:** Champaign Co. **State:** OH **Section, Township, Range:** :	**Sampling Date:** 12/13/11 **Sampling Point:** SP62

Landform (hillslope, terrace, etc.): depression — Local relief (concave, convex, none): concave

Slope (%):2-6 — Lat: 40.14236 — Long: 83.90422 — Datum: WGS 1984

Soil Map Unit Name: Miami silt loam — NWI classification: PEM1A

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)No

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

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area**
Hydric Soil Present?	Yes	**within a Wetland?** Yes
Wetland Hydrology Present?	Yes	

Remarks: Wetland JJ, non-isolated NWI emergent wetland, 12 flags

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 5/5 = 100 %

FAC Neutral Test: 3 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 2 / 1	100					organic	
1-10	10YR 4 / 1	90	7.5YR 5 / 6	10	C	M	silty clay	saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):
Type:
Depth: (inches):

Hydric Soil Present? Yes
Soil pit dug? Yes
(If yes select one): 1" Probe

Remarks: Hydric soil present - Indicator F3 (Depleted Matrix)

Routine Wetland Determination Form

Sampling Date: 12/13/11
Sampling Point: SP62

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)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	Yes	Depth (Inches): 3	
Water Table Present?	No	Depth (Inches):	
Saturation Present? (Includes capillary fringe)	Yes	Depth (Inches): surface	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Hydrology present - four primary indicators and one secondary indicator

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #62
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Aster lateriflorus	FACW	Herb	20	95%	Yes
Cinna arundinacea	FACW+	Herb	1	5%	
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	21		
Salix exigua	OBL	Shrub/Sap	50	100%	Yes
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	50		
Fraxinus pennsylvanica	FACW	Tree	20	33%	Yes
Acer rubrum	FAC	Tree	20	33%	Yes
Populus deltoides	FAC	Tree	20	33%	Yes
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	60		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase I	**City/County:** Champaign Co.	**Sampling Date:** 12/13/11
Applicant/Owner: Everpower	**State:** OH	**Sampling Point:** SP03
Investigator(s): BMF/KBH	**Section, Township, Range:**	

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):

Slope (%):0-2 Lat: 40.146375 Long: 83.58023 Datum: WGS 1984

Soil Map Unit Name: Brookston silty clay loam | NWI classification: PFO1A, PSS1C

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks):No

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

Hydrophytic Vegetation Present?	Yes	**Is the Sampled Area**
Hydric Soil Present?	Yes	**within a Wetland?** Yes
Wetland Hydrology Present?	Yes	

Remarks: Wetland KK, forested NWI wetland, non-isolated. 12 flags

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation.

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 7/7 = 100 %

FAC Neutral Test: 6 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic community is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR 2 / 1	100					organic	Organic - A0
1-4	10YR 4 / 2	80	7.5YR 5 / 6	20	C	M	silty clay	
4-12	2.5Y5 / 2	85	10YR 5 / 6	15	C	M	silty clay	saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type:

Depth: (inches):

Hydric Soil Present? Yes

Soil pit dug? Yes

(If yes select one): 1" Probe

Remarks: Hydric soil based on indicator F3-Depleted matrix

Routine Wetland Determination Form

Sampling Date: 12/13/11
Sampling Point: SP63

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	No	Depth (Inches):	
Water Table Present?	Yes	Depth (Inches): 7	
Saturation Present? (includes capillary fringe)	Yes	Depth (Inches): 7	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Hydrology is present - two primary indicators, one secondary indicator.

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #63
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Agrostis stolonifera	FACW	Herb	60	60%	Yes
Carex aquatilis	FACW+	Herb	5	5%	
Aster lateriflorus	FACW-	Herb	5	5%	
Glyceria striata	OBL	Herb	30	30%	Yes
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
Fraxinus pennsylvanica	FACW	Shrub/Sap	10	23%	Yes
Cephalanthus occidentalis	OBL	Shrub/Sap	2	4%	
Sambucus canadensis	FACW-	Shrub/Sap	5	12%	
Cornus amomum	FACW	Shrub/Sap	10	23%	Yes
Carya laciniosa	FAC	Shrub/Sap	1	2%	
Toxicodendron radicans	FAC	Shrub/Sap	10	23%	Yes
Lindera benzoin	FACW-	Shrub/Sap	5	12%	
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	43		
Fraxinus pennsylvanica	FACW	Tree	30	67%	Yes
Quercus bicolor	FACW+	Tree	15	33%	Yes
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	45		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase II **Applicant/Owner:** Everpower **Investigator(s):** BMF	**City/County:** Champaign Co. **State:** OH **Section, Township, Range:** :	**Sampling Date:** 12-13-11 **Sampling Point:** SP64

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):

Slope (%): Lat: 40.130271 Long: 83.589993 Datum: WGS 1984

Soil Map Unit Name: | NWI classification: None

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.) No

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

Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	**Is the Sampled Area within a Wetland?** Yes

Remarks: Wetland LL, non-isolated

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 1/1 = 100 %

FAC Neutral Test: 1 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	2.5YR 3/2	95	10YR 5/8	5	C	M	sill loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type:

Depth: (inches):

Remarks: Hydric soil present by indicator F6

Hydric Soil Present? Yes

Soil pit dug? Yes

(If yes select one): 1" Probe

Routine Wetland Determination Form

Sampling Date: 12-13-11
Sampling Point: SP64

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	Yes	Depth (inches): 3	
Water Table Present?	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	Depth (inches): surface	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Hydrology present by numerous indicators

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #64
Attachment to Routine Wetland Determination Data Form
Hall & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Phalaris arundinacea	FACW	Herb	95	95%	Yes
Ambrosia trifida	FAC	Herb	2	2%	
Asclepias incarnata	OBL	Herb	2	2%	
Solidago altissima	OBL	Herb	1	1%	
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	0		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase II **Applicant/Owner:** Everpower **Investigator(s):** BMF	**City/County:** Champaign Co. **State:** OH **Section, Township, Range:** :	**Sampling Date:** 12-13-11 **Sampling Point:** SP05

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):

Slope (%):6-12 Lat: 40.12493 Long: 83.573028 Datum: WGS 1984

Soil Map Unit Name: Miami Silt Loam | NWI classification: PEMf1C, PUBGx

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks).No

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

Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Wetland Hydrology Present? Yes	**Is the Sampled Area within a Wetland?** Yes

Remarks: Wetland MM, non-isolated

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 2/2 = 100 %

FAC Neutral Test: 2 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2 / 1	100					silt	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):
Type:
Depth: (inches):

Hydric Soil Present? Yes
Soil pit dug? Yes
(If yes select one): 1" Probe

Remarks: Hydric soil is present by indicator F3

Routine Wetland Determination Form

Sampling Date: 12-13-11
Sampling Point: SP65

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present? No Depth (Inches):

Water Table Present? No Depth (Inches):

Saturation Present? (includes capillary fringe) Yes Depth (Inches): 6" **Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Hydrology present by two primary indicators and one secondary indicator

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #93
Attachment to Routine Wetland Determination Data Form
Hall & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Typha latifolia	FACW	Herb	95	95%	Yes
Eyllobium coloratum	OBL	Herb	5	5%	
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
Acer saccharinum	FACW	Shrub/Sap	10	100%	Yes
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	10		
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	0		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

Routine Wetland Determination Form

Project/Site: EVP010 Phase I	**City/County:** Champaign Co.	**Sampling Date:** 12-14-11
Applicant/Owner: Everpower	**State:** OH	**Sampling Point:** SP08
Investigator(s): BMF	**Section, Township, Range:**	

Landform (hillslope, terrace, etc.): | Local relief (concave, convex, none):

Slope (%):2-6 Lat: 40.08738 Long: 83.803602 Datum: WGS 1984

Soil Map Unit Name: Miami silt loam | NWI classification: PSS1C, PUB Gh

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

Are Vegetation ☐, Soil ☐, or Hydrology ☐ significantly disturbed? Are "Normal Circumstances" present? Yes

Are Vegetation ☐, Soil ☐, or Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.) No

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

Hydrophytic Vegetation Present? Yes	**Is the Sampled Area**
Hydric Soil Present? Yes	**within a Wetland?** Yes
Wetland Hydrology Present? Yes	

Remarks: Wetland NN, non-isolated

VEGETATION **(USFWS Region No. 1 - Northeast Sub-Region)**

See attached sheet for listing of plant species and identification of dominant vegetation

Percent of Dominant Species that are OBL, FACW or FAC: (excluding FAC-) = 8/8 = 100 %

FAC Neutral Test: 8 > 0 = Pass

Prevalence Index =

Remarks: Hydrophytic plant community is present

SOIL **LRR: M**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4 / 2	90	10YR 5 / 8	10	C	M	silt loam	saturated

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10)
- ☐ 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 (F3)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ☐ Coast Prairie Redox (A16)
- ☐ Iron-Manganese Masses (F12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type:

Depth: (inches):

Hydric Soil Present? Yes

Soil pit dug? Yes

(If yes select one): 1" Probe

Remarks: Hydric soil is present by indicator F3

Routine Wetland Determination Form

Sampling Date: 12-14-11
Sampling Point: SP66

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)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)
- ☐ Other (Explain in Remarks)

Field Observations:

Surface Water Present?	Yes	Depth (inches): 3	
Water Table Present?	No	Depth (inches):	
Saturation Present? (includes capillary fringe)	Yes	Depth (inches): surface	**Wetland Hydrology Present?** Yes

☐ Recorded Data (Describe in Remarks):

- ☐ Stream, Lake, or Tide Gauge
- ☐ Aerial Photographs
- ☐ Other

☒ No Recorded Data

Remarks: Hydrology is present by numerous indicators.

Identification of Dominant Plant Species using the 50/20 Rule, SAMPLE POINT #66
Attachment to Routine Wetland Determination Data Form
Hull & Associates, Inc.

SPECIES	INDICATOR STATUS	STRATUM	PLANT COVER	% OF TDM	DOMINANT
Typha latifolia	OBL	Herb	25	22%	Yes
Aster lateriflorus	FACW-	Herb	25	25%	Yes
Polygonum lapathifolium	FACW+	Herb	25	25%	Yes
Carex stricta	OBL	Herb	25	25%	Yes
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		Herb			
		TDM=	100		
Ulmus americana	FACW-	Shrub/Sap	10	24%	Yes
Salix nigra	FACW+	Shrub/Sap	2	5%	
Toxicodendron radicans	FAC	Shrub/Sap	30	71%	Yes
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		Shrub/Sap			
		TDM=	42		
Salix nigra	FACW+	Tree	35		Yes
Populus deltoides	FAC	Tree	20	36%	Yes
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		Tree			
		TDM=	55		
		Vine			
		Vine			
		Vine			
		Vine			
		TDM=	0		

APPENDIX C

ORAM Data Sheets

Sheet 19

ORAM v. 8.0 Field Form Quantitative Rating

Site: EVP001 Wetland J	Rater(s): S. Harrelson, H. Crowell	Date: 10/17/08

Metric 1. Wetland Area (size).

2 | 2

Select one size class and assign score.

2

- [ ] >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)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

1 | 3

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

0

- [ ] 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)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

1

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

Metric 3. Hydrology.

11.5 | 14.5

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

4

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

3b. Connectivity. Score all that apply.

0

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

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

1

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

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

1.5

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

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

5

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [x] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [x] other Agriculture

Metric 4. Habitat Alteration and Development.

6 | 20.5

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

2

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

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

1

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

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

3

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] 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
- [x] farming
- [x] nutrient enrichment

20.5

subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: EVP001 Wetland J	Rater(s): S. Harrison, H. Crowell	Date: 6/17/08

20.5
subtotal this page

max 10 pts	subtotal
-10	10.5

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

-10

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forest/l 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)
- [x] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

max 20 pts	subtotal
-3	7.5

Metric 6. Plant communities, interspersion, microtopography.

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

1

- [ ] Aquatic bed
- [1] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other _____

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

0

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [x] None (0)

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

-5 reed canary

- [X] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Scores all present using 0 to 3 scale.

1

- [ ] 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

Category 1

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

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

ORAM v. 5.0 Field Form Quantitative Rating

Site: EVP007	Rater(s): GMF / HFC	Date: 6/29/11

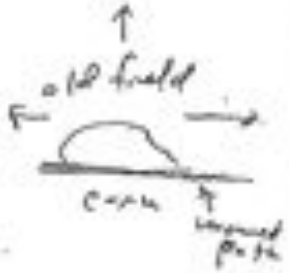
WETLAND - M

Metric 1. Wetland Area (size).

1 | 1 (max 6 pts. | subtotal)

Select one size class and assign score.

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



Metric 2. Upland buffers and surrounding land use.

7 | 8 (max 14 pts. | subtotal)

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

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [x] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (328 to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<328) around wetland perimeter (0)

4

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)
- [x] 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 crops, mining, construction. (1)

3

Metric 3. Hydrology.

11 | 19 (max 30 pts. | subtotal)

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

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

1

3b. Connectivity. Score all that apply.

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

1

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)
- [x] <0.4m (<15.7in) (1)

1

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

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

1

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

7

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

6 | 25 (max 20 pts. | subtotal)

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

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

2

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)
- [x] Poor (1)

1

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

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

3

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [x] farming
- [x] nutrient enrichment

25

subtotal this page

last revised 1 February 2001 jjm

Site: EVP01	Rater(s): BMP / HFC	Date: 6/29/21

25
subtotal first page

WET-M

-10 | 15 **Metric 5. Special Wetlands.**
max 10 pts. | subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-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)
- [x] Category 1 Wetland. See Question 1 Qualitative Rating (-10)

-10

-4 | 11 **Metric 6. Plant communities, interspersion, microtopography.**
max 20 pts. | subtotal

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

- [ ] Aquatic bed
- [x] Emergent (1)
- [ ] 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) (0)
- [x] None (0)

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

- [x] Extensive >75% cover (-5) (-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 (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

11

End of Quantitative Rating. Complete Categorization Worksheets.

OHAM v. 5.0 Field Form Quantitative Rating

WETLAND N

Site: Ever Power - WET N	Rater(s): BMP	Date: 6/25/11

Metric 1. Wetland Area (size).

0 | 0 (max 6 pts. | subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

1 | 1 (max 14 pts. | subtotal)

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

(0)

- [ ] 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)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

(1)

- [ ] 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)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

8 | 9 (max 30 pts. | subtotal)

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

(4)

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

3b. Connectivity. Score all that apply.

(1)

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

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

(1)

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

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

(1)

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

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

(1)

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [x] filling/grading
- [ ] road bed/RR track
- [x] dredging
- [ ] other _____

Metric 4. Habitat Alteration and Development.

4 | 1.3 (max 20 pts. | subtotal)

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

(1)

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

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

(2)

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

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

(1)

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

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [x] herbaceous/aquatic bed removal
- [x] sedimentation
- [x] dredging
- [x] farming
- [x] nutrient enrichment

13 (subtotal this page)

last revised 1 February 2001 jjm

Site: ENG Power WET-N	Rater(s): BMF / HFC	Date: 6/29/2011

13 (subtotal this page)

Metric 5. Special Wetlands.

WETLAND N
6 flags
Abutting

0 (max 10 pts.) | 13 (subtotal)

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-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)

0

Metric 6. Plant communities, interspersion, microtopography.

1 (max 20 pts.) | 14 (subtotal)

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

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

1

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

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [x] None (0)

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)

0

6d. Microtopography.
Score all present using 0 to 3 scale.

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

0

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 Descriptions 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

14

End of Quantitative Rating. Complete Categorization Worksheets.

ORAM v. 5.0 Field Form Quantitative Rating

Site: ENEL POWER	Rater(s): BMF	Date: 10/13/11

10 Flags isolated WETLAND T

Metric 1. Wetland Area (size).

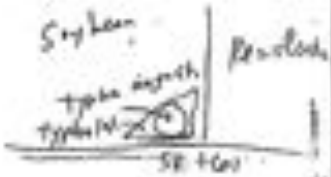
1 | 1 (max 6 pts; subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

3 | 4 (max 14 pts; subtotal)



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

0

- [ ] 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 (33ft to <82ft) around wetland perimeter (1)
- [x] VERY NARROW. Buffers average <10m (<33ft) around wetland perimeter (0)

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

3

- [ ] 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)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

4 | 8 (max 30 pts; subtotal)

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

1

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

3b. Connectivity. Score all that apply.

0

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

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

1

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

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

1

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

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

1

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [x] tile – to the channel
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (non-stormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other _____

Metric 4. Habitat Alteration and Development.

7 | 15 (max 20 pts; subtotal)

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

2

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

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

2

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

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

3

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

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [x] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [x] farming
- [x] nutrient enrichment

15 (subtotal this page)

last revised 1 February 2001 jjm

Site: EVER POWER Jeff connect	Rater(s): B. FALKINBURG	Date: 10/13/11

15 ✓
subtotal this page

0	15
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Wetland T.

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 (0)
- [ ] 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	14
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

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

(1) 0
- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [x] Forest — saplings ✓ shrubs/vine/cattail/wood
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

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

(1)
- [ ] High (3)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [x] Low (1)
- [ ] None (0)

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

(-3)
- [ ] Extensive >75% cover (-5)
- [x] 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
- [ ] 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

14 ✓

End of Quantitative Rating. Complete Categorization Worksheets.

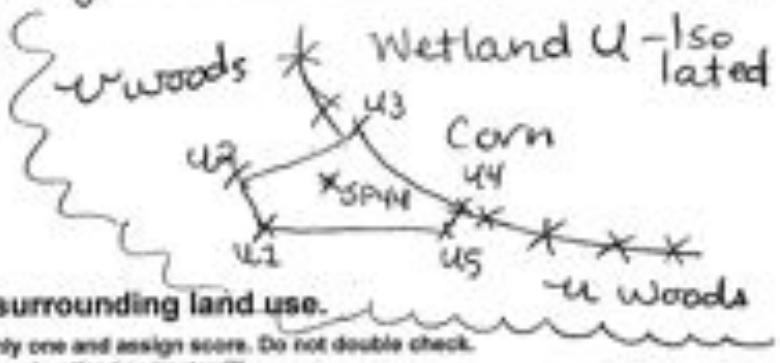
Site: Evergreen | Rater(s): B. Falkinburg | Date: 10/13/11

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)
- [x] <0.1 acres (0.04ha) (0 pts)



4 | 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)
- [x] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

1

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)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

3

6 | 10 (max 30 pts | subtotal)

Metric 3. Hydrology.

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

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

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)

0

3c. Maximum water depth. Select one.

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

1

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

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

1

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

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

3

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other _____

8 | 18 (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)
- [x] Recovering (2)
- [ ] Recent or no recovery (1)

2

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

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

3

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

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

3

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)

Site: Everpower	Rater(s): B. Falkinburg	Date: 10/13/11

18 subtotal this page

0 (max 10 pts) | 18 (subtotal)

Wetland A

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 5 Qualitative Rating (-10)

2 (max 20pts) | 20 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

2

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) Interspersion.

Select only one.

0

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [x] None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

0

- [ ] 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.

2

- [ ] Vegetated hummucks/tussucks
- [ ] 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 spp diversity and/or predominance of nonnative or low disturbance tolerant native species
Native spp are dominant component of the vegetation, mod although nonnative and/or disturbance tolerant native spp can also be present, and species diversity moderate to moderately high, but generallyw/o presence of rare threatened or endangered spp to
A predominance of native species, with nonnative spp high and/or disturbance tolerant native spp absent or virtually absent, and high spp diversity and often, but not always, the presence of rare, threatened, or endangered spp

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

30 GRAND TOTAL(max 100 pts)

last revised 1 February 2001 jm

Site: Evergreen | Rater(s): BMF | Date: 10/13/11

Wetland V
Isolated

Metric 1. Wetland Area (size).

1 | 1 (max 6 pts | subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

1 | 2 (max 14 pts | subtotal)

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

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

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

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

Metric 3. Hydrology.

15 | 17 (max 30 pts | subtotal)

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

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

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

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

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [x] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [x] road bed/RR track
- [ ] dredging
- [x] other watering hole for cattle

Metric 4. Habitat Alteration and Development.

5 | 22 (max 20 pts | subtotal)

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

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

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

- [ ] Excellent (7)
- [ ] Very good (6)
- [ ] Good (5)
- [ ] Moderately good (4)
- [x] 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)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] mowing
- [x] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [x] farming
- [x] nutrient enrichment

22 (subtotal this page)

Site: Everpower	Rater(s): BMF	Date: 10/13 11

22 subtotal this page

Wetland V

0 | 22 — max 10 pts. | subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

0

- [ ] 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 5 Qualitative Rating (-10)

3 | 25 — max 20pts. | subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

1

- [ ] Aquatic bed
- [1] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) interspersion.

Select only one.

0

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [X] None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

0

- [ ] 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.

2

- [ ] Vegetated hummucks/tussucks
- [ ] Coarse woody debris >15cm (6in)
- [ ] Standing dead >25cm (10in) dbh
- [2] Amphibian breeding pools

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.2471 acres) contiguous area
1	Present and either comprises small part of wetland's 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

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

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

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

last revised 1 February 2001 jm

ORAM v. 5.0 Field Form Quantitative Rating

Site: Everpower	Rater(s): BMF	Date: 10/17/11

Metric 1. Wetland Area (size).

max 6 pts. | subscore: 1 | 1

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)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

(1)

Wetland W isolated 6 flags

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subscore: 1 | 2

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)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

(1)

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

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

Metric 3. Hydrology.

max 30 pts. | subscore: 4 | 6

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

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

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)

1

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)
- [x] <0.4m (<15.7in) (1)

1

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

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

1

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

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

1

Check all disturbances observed

- [x] ditch into wetland from ag field
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

max 20 pts. | subscore: 3 | 9

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

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

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)
- [x] Poor (1)

1

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

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

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

subtotal this page: 9

ORAM v. 5.0 Field Form Quantitative Rating

Site: Ever power	Rater(s): BM E	Date: 10/17/11

Wetland W
Isolated
6 flags

9
subtotal this page

0	9
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 occurrance 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	10
max 20 pts	subtotal

Metric 6. Plant communities, interspersion, microtopography.

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

1

- [ ] Aquatic bed
- [1] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) interspersion.
Select only one.

0

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [X] None (0)

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

0

- [ ] 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.

0

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 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

10	GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Site: Everpower	Rater(s): TSM F	Date: 10/18/11

Wetland Y
Non-isolated
39 flags
drains to stream offsite

Metric 1. Wetland Area (size).

max 6 pts | subtotal: 2 | 2

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)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts) (2)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts | subtotal: 3 | 5

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) (0)
- [x] 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) (3)
- [ ] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

max 30 pts | subtotal: 10 | 15

3a. Sources of Water. Score all that apply. (1)

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

3b. Connectivity. Score all that apply. (2)

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

3c. Maximum water depth. Select one. (1)

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

3d. Duration inundation/saturation. Score one or dbl check. (1)

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

3e. Modifications to natural hydrologic regime. Score one or double check and average. (5)

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [x] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

max 20 pts | subtotal: 9 | 24

4a. Substrate disturbance. Score one or double check and average. (2.5)

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

4b. Habitat development. Select only one and assign score. (2)

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

4c. Habitat alteration. Score one or double check and average. (4.5)

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

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcut/ing
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

subtotal this page: 24

Site: Everpower	Rater(s): BMF	Date: 10/18/11

Wetland 4

24 (subtotal this page)

0 (max 10 pts) | 24 (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 5 Qualitative Rating (-10)

2 (max 20pts) | 26 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [ ] Emergent
- (3) [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) interspersion.

Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- (2) [X] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- [X] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- (-5) [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

phalaris

6d. Microtopography.

Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- (2) [ ] 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 1 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 2 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 3 vegetation and is of high quality

Narrative Description of Vegetation Quality

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

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

20 GRAND TOTAL(max 100 pts)

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

WETLAND Z

Site: EVP 010	Rater(s): B. FALKINBURG	Date: 10/18/11

Metric 1. Wetland Area (size).

0 | 0 (max 6 pts. / subtotal)

Non-isolated 13 flags

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (0 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)
- [x] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

3 | 3 (max 14 pts. / subtotal)

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

0

- [ ] 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)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

3

- [ ] 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)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

5 | 8 (max 30 pts. / subtotal)

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

1

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

3b. Connectivity. Score all that apply.

1

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

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

1

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

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

1

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

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

1

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [x] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

4 | 12 (max 20 pts. / subtotal)

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

2

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

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

1

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

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

1

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

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [x] selective cutting
- [x] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [x] dredging
- [x] farming
- [ ] nutrient enrichment
- [x] herbicide app.

12 (subtotal this page)

last revised 1 February 2001 jjm

Wetland 2

ORAM v. 5.0 Field Form Quantitative Rating

Site: EVP	Rater(s): BMP	Date: 10/18/11

12

0 | 12

Metric 5. Special Wetlands.

Non-isolated - flows into a Field tile at western end of wetland

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 | 9

Metric 6. Plant communities, interspersion, microtopography.

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

(1)

- [ ] Aquatic bed
- [x] Emergent
- [x] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

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

(1)

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [x] Low (1)
- [ ] None (0)

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

(-5)

- [x] 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.

(0)

- [ ] Vegetated hummocks/tussocks
- [ ] Coarse woody debris >15cm (6in)
- [ ] Standing dead >25cm (10in) dbh
- [ ] Amphibian breeding pools

esp. phalaris

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

9

End of Quantitative Rating. Complete Categorization Worksheets.

Site: Evergreen	Rater(s): BMF	Date: 10/18/11

Wetland AA non-isolated

Metric 1. Wetland Area (size).

2 | 2 (max 8 pts | subtotal)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (8 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)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

5 | 7 (max 14 pts | subtotal)

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

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

(1)

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)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

(4)

Metric 3. Hydrology.

9 | 16 (max 30 pts | subtotal)

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

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

(1)

3b. Connectivity. Score all that apply.

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

(1)

3c. Maximum water depth. Select one.

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

(1)

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

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

(1)

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

(5)

Check all disturbances observed

- [ ] ditch
- [x] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

9.5 | 25.5 (max 20 pts | subtotal)

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

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

(3)

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

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

(2)

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

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

(4.5)

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [x] farming
- [ ] nutrient enrichment

25.5 (subtotal this page)

Site: Everpower	Rater(s): BMF	Date: 10/18/11

25.5
subtotal this page

Wetland AA

0	25.5
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

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

-2	23.5
max 20pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

- [ ] Aquatic bed
- [1] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

(1)

6b. Horizontal (plan view) Interspersion.

Select only one.

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [X] Low (1)
- [ ] None (0)

(1)

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

- [X] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

(-5)

6d. Microtopography.

Score all present using 0 to 3 scale.

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

(1)

phalaris

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.247/1 acres) contiguous area
1	Present and either comprises small part of wetland's 1 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 2 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 3 vegetation and is of high quality

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

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

23.5	GRAND TOTAL(max 100 pts)

last revised 1 February 2001 jjm

C:Falkinburg/Oram5.xls

ORAM v. 5.0 Field Form Quantitative Rating

Site: Everpower	Rater(s): BMF	Date: 10/12/11

Metric 1. Wetland Area (size).

2 | 2 (max 6 pts; subtotal)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [x] 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)

Wetland BB
11 flags
Isolated

Metric 2. Upland buffers and surrounding land use.

3 | 5 (max 14 pts; subtotal)

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

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

0

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

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

3

Metric 3. Hydrology.

15 | 20 (max 30 pts; subtotal)

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

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

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)

0

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

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

3

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

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

4

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

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

7

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

12 | 32 (max 20 pts; subtotal)

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

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

3

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

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

3

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

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

6

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

32 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Site: Everpower	Rater(s): BMF	Date: 10/18/11

32
subtotal this page

Wetland BB

max 10 pts.	subtotal
0	32

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

0

- [ ] 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)

max 20 pts.	subtotal
4	36

Metric 6. Plant communities, interspersion, microtopography.

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

2

- [ ] Aquatic bed
- [1] Emergent
- [2] Shrub
- [2] Forest
- [ ] Mudflats
- [1] Open water
- [ ] Other _____

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

2

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [X] 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

(-3)

- [ ] Extensive >75% cover (-5)
- [X] 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.

3

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247[1] 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

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

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

ORAM v. 5.0 Field Form Quantitative Rating

Site: EVER POWER PH. 2	Rater(s): B. M FACK INBURG	Date: 10/19/11

WETLAND: CC

ISOLATED or ADJACENT

# of flags: 6

SIZE in AC.: <.10

Metric 1. Wetland Area (size).

1	1
max 6 pts.	subtotal

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 5 to <10 acres (1.2 to <4ha) (3 pts)
- [ ] 0.5 to <5 acres (0.12 to <1.2ha) (2pts)
- [X] 0.1 to <0.5 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

10	11
max 14 pts.	subtotal

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

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [X] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [ ] NARROW. Buffers average 10m to <25m (33ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<33ft) around wetland perimeter (0)

4

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

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

10

6

Metric 3. Hydrology.

6	17
max 30 pts.	subtotal

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

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

1

3b. Connectivity. Score all that apply.

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

1

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)
- [X] <0.4m (<15.7in) (1)

1

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

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

1

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

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [X] Recovering (3)
- [X] Recent or no recovery (1)

2

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [X] other Pots / mowing

Metric 4. Habitat Alteration and Development.

5.5	22.5
max 20 pts.	subtotal

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

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

2.5

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)
- [X] Poor (1)

1

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

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

2

Check all disturbances observed

- [X] mowing
- [ ] grading
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [X] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

22.5

subtotal this page

Site: EVER POWER PH 2	Rater(s): BRAD FALKINBURG	Date: 10/19/11

21.5 ✓
subtotal this page

WETLAND: CC

0	2.75 ✓
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	17.5 ✓
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

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

(1)
- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other _____

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

(0)
- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [x] None (0)

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

(-5)
- [x] 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.

(0)
- [ ] Vegetated hummocks/tussucks
- [ ] 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

17.5 ✓ GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 lim

ORAM v. 5.0 Field Form Quantitative Rating

Site: EVER POWER PH 2	Rater(s): B. M FACK INBURG /	Date: 10/19/11

NEW T94

WETLAND: FDD

ISOLATED or ADJACENT

# of flags: GPS AREA

SIZE in AC.: <0.5 ac

2 | 2 Metric 1. Wetland Area (size).

max 6 pts. subtotal

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (6 pts)
- [ ] 25 to <50 acres (10.1 to <20.2ha) (5 pts)
- [ ] 10 to <25 acres (4 to <10.1ha) (4 pts)
- [ ] 3 to <10 acres (1.2 to <4ha) (3 pts)
- [x] 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 Metric 2. Upland buffers and surrounding land use. >19,000 SF

max 14 pts. subtotal

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

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

0

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

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

soy beans

3

18 | 23 Metric 3. Hydrology.

max 32 pts. subtotal

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

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

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)

0

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

- [x] >0.7 (27.6in) (5)
- [ ] 0.4 to 0.7m (15.7 to 27.6in) (2)
- [ ] <0.4m (<15.7in) (1)

3

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

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

2

Dry today + soils dry + crumbly

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

- [x] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

12

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other _____

13 | 36 Metric 4. Habitat Alteration and Development.

max 32 pts. subtotal

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

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

4

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

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

3

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

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

6

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [x] farming
- [ ] nutrient enrichment

36

subtotal info page

ORAM v. 5.0 Field Form Quantitative Rating

Site: Electpower	Rater(s): BM F	Date: 10/19/11

Wetland DD

36
subtotal this page

Metric 5. Special Wetlands.

5 (max 10 pts) | 41 (subtotal)

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [X] Mature forested wetland (5) (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)

Metric 6. Plant communities, interspersion, microtopography.

6 (max 20 pts) | 47 (subtotal)

6a. Wetland Vegetation Communities. Score all present using 0 to 3 scale. (2)

- [ ] Aquatic bed
- [X] Emergent
- [ ] Shrub
- [X] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. Horizontal (plan view) Interspersion. Select only one. (1)

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [X] 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. (3)

- [ ] Vegetated hummocks/tussucks
- [X] 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

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

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Site: Evergreen Pk II	Rater(s): BMF	Date: 10/19/11

Wetland EE non-isolated 4 flags

Metric 1. Wetland Area (size).

2 | 2 (max 6 pts. | subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

2 | 4 (max 14 pts. | subtotal)

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

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

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

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

Metric 3. Hydrology.

9 | 13 (max 30 pts. | subtotal)

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [x] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

10 | 23 (max 20 pts. | subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [x] 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)
- [x] Fair (3)
- [ ] Poor to fair (2)
- [ ] Poor (1)

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

- [ ] None or none apparent (9)
- [x] Recovered (6)
- [x] 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
- [x] farming
- [ ] nutrient enrichment

23 (subtotal this page)

Site: EVERPOWER	Rater(s): BRAD FALKINBURG	Date: 10/19/11

NREW T96 SR
N of 161

WETLAND: EE

23 ✓
subtotal this page

0	23
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)

0	23
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

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

2

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other _____

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

0

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [x] None (0)

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

-3

- [ ] Extensive >75% cover (-5)
- [x] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

1

- [x] 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
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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

23 GRAND TOTAL(max 100 pts)

Refer to the most recent Ohmic Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 lim

Site: Everpower Ph II	Rater(s): BMF	Date: 10-20-11

Wetland FF
non-isolated
22 flags

Metric 1. Wetland Area (size).

2 | 2 (max 6 pts. | subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

4 | 6 (max 14 pts. | subtotal)

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

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

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

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

Metric 3. Hydrology.

7 | 13 (max 30 pts. | subtotal)

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

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

3b. Connectivity. Score all that apply.

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

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

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

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

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

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

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [x] other culvert

Metric 4. Habitat Alteration and Development.

7.5 | 20.5 (max 20 pts. | subtotal)

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

- [ ] None or none apparent (4)
- [x] Recovered (3)
- [x] 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)
- [x] Poor to fair (2)
- [ ] Poor (1)

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

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

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [x] filling
- [ ] nutrient enrichment

20.5 (subtotal this page)

Site: Evergreen	Rater(s): BMF	Date: 10-20-11

20.5 (subtotal this page)

Wetland FF

max 10 pts.	subtotal
0	20.5

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

0

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (3)
- [ ] 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)

max 20 pts.	subtotal
-4	16.5

Metric 6. Plant communities, interspersion, microtopography.

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

1

- [ ] Aquatic bed
- [x] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

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

0

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [ ] Low (1)
- [x] None (0)

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

Phalaris (-5)

- [x] 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.

0

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

Vegetation Community Cover Scale

0	Absent or comprises <0.1ha (0.247 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

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

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

Site: Everpower	Rater(s): BMF	Date: 10/20/11

Wetland GG adjacent 29 flags

Metric 1. Wetland Area (size).

max 6 pts | subtotal: 2 | 2

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)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts | subtotal: 5 | 7

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)
- [x] NARROW. Buffers average 10m to <25m (32ft to <82ft) around wetland perimeter (1)
- [ ] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

buffer CRP

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)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5)
- [x] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3) - CRP
- [ ] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

max 30 pts | subtotal: 9 | 16

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

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

3b. Connectivity. Score all that apply.

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

3c. Maximum water depth. Select one.

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

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

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

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

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

max 20 pts | subtotal: 6 | 22

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

- [ ] None or none apparent (4)
- [ ] Recovered (3)
- [x] 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)
- [x] Poor to fair (2)
- [ ] Poor (1)

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

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] 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

subtotal this page: 22

Site: Everpower	Rater(s): BMF	Date: 10/20/11

22 subtotal this page

Wetland GG

0 (max 10 pts.) | 22 (subtotal)

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

0

- [ ] 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 5 Qualitative Rating (-10)

1 (max 20pts.) | 23 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

6a. Wetland Vegetation Communities.

Score all present using 0 to 3 scale.

2

- [ ] Aquatic bed
- [ ] Emergent
- [ ] Shrub
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

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 1 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 2 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 3 vegetation and is of high quality

6b. Horizontal (plan view) Interspersion.

Select only one.

1

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [x] Low (1)
- [ ] None (0)

Narrative Description of Vegetation Quality

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

6c. Coverage of invasive plants. Refer

Table 1 ORAM long form for list. Add or deduct points for coverage

-3

- [ ] Extensive >75% cover (-5)
- [x] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

50% Phalaris

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

6d. Microtopography.

Score all present using 0 to 3 scale.

- [ ] Vegetated hummucks/tussucks
- [ ] Coarse woody debris >15cm (6in)
- [ ] Standing dead >25cm (10in) dbh
- [ ] Amphibian breeding pools

Microtopography Cover Scale

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

23 GRAND TOTAL(max 100 pts)

last revised 1 February 2001 jjm

ORAM v. 5.0 Field Form Quantitative Rating

Site: Everpower	Rater(s): BMF	Date: 12-12-11

Wetland HH
Non-isolated
SP-59

Metric 1. Wetland Area (size).

0 | 0 (max 6 pts. | subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

7 | 7 (max 14 pts. | subtotal)

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

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [x] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4) — 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)
- [x] LOW. Old field (>10 years), shrubland, young second growth forest. (5) — 3
- [ ] MODERATELY HIGH. Residential, fenced pasture, park, conservation tillage, new fallow field. (3)
- [x] HIGH. Urban, industrial, open pasture, row cropping, mining, construction. (1)

Metric 3. Hydrology.

17 | 24 (max 30 pts. | subtotal)

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

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

3b. Connectivity. Score all that apply.

- [ ] 100 year floodplain (1)
- [x] Between stream/lake and other human use (1)
- [x] Part of wetland/upland (e.g. forest), complex (1) — 2
- [ ] Part of riparian or upland corridor (1)

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) — 1
- [x] <0.4m (<15.7in) (1)

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

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

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

- [x] None or none apparent (12) — 12
- [ ] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

12 | 36 (max 20 pts. | subtotal)

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

- [x] None or none apparent (4) — 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) — 2
- [ ] Moderately good (4)
- [ ] Fair (3)
- [x] Poor to fair (2)
- [ ] Poor (1)

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

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

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

36 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Site: Everpower	Rater(s): BMF	Date: 12-12-11

36
subtotal this page

Wetland HH

0	36
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)

0

-2	34
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

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

- ☐ Aquatic bed
- ☐ Emergent
- ☒ Shrub
- ☐ Forest
- ☐ Mudflats
- ☐ Open water
- ☐ Other_____

1

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

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

1

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)

-5 phalaris

6d. Microtopography. Score all present using 0 to 3 scale.

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

1

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

34	GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

ORAM v. 5.0 Field Form Quantitative Rating

Site: EVPOID	Rater(s): RMF / KMH	Date: 12/12/11

Wetland II
4 flags
Isolated
SP60

Metric 1. Wetland Area (size).

0 | 0 (max 8 pts | subtotal)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (8 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)
- [x] <0.1 acres (0.04Ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

1 | 1 (max 14 pts | subtotal)

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

0

- [ ] 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)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

1

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

Metric 3. Hydrology.

5 | 6 (max 30 pts | subtotal)

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

1

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

3b. Connectivity. Score all that apply.

0

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

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

1

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

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

2

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

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

1

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [x] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [x] dredging
- [x] other man made pit?

Metric 4. Habitat Alteration and Development.

4 | 10 (max 20 pts | subtotal)

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

1

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

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

2

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

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

1

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [ ] Recovering (3)
- [x] 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
- [x] sedimentation
- [ ] dredging
- [x] farming
- [x] nutrient enrichment

10
subtotal this page

ORAM v. 5.0 Field Form Quantitative Rating

Site: EVP010	Rater(s): BMF	Date: 12/12/11

WET. II

ISOLATED

10 (subtotal this page)

0 (max 10 pts.)	10 (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)

2 (max 20 pts.)	12 (subtotal)	**Metric 6. Plant communities, interspersion, microtopography.**

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

- [ ] Aquatic bed
- (1) [X] 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)
- (0) [X] None (0)

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

- [ ] Extensive >75% cover (-5)
- [ ] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- (0) [X] 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
- [X] Amphibian breeding pools

Vegetation Community Cover Scale	
0	Absent or comprises <0.1ha (0.247) 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

12	GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

ORAM v. 5.0 Field Form Quantitative Rating

Site: EVP 0 | 0	Rater(s): BMF / KMH	Date: 12/13/11

WETLAND JJ
SP62
Non-isolated
12 flags

Category 1

Metric 1. Wetland Area (size).

max 6 pts. | subscore: 1 | 1

Select one size class and assign score.

1

- [ ] >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)
- [x] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

max 14 pts. | subscore: 3 | 4

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

0

- [ ] 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)
- [x] VERY NARROW. Buffers average <10m (<32ft) around wetland perimeter (0)

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

3

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

Metric 3. Hydrology.

max 30 pts. | subscore: 10 | 14

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

1

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

3b. Connectivity. Score all that apply.

1

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

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

1

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

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

2

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

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

5

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

max 20 pts. | subscore: 9 | 23

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

3

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

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

3

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

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

3

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

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

subtotal this page: 23

ORAM v. 5.0 Field Form Quantitative Rating

Site: EXP010	Rater(s): RMF / KMH	Date: 12/13/11

23
subtotal this page

Wetland JJ
SP62
Non-isolated
Drains to south to a ditch to stream D-2
12 GPS pts

Metric 5. Special Wetlands.

0 | 23
max 10 pts. | subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (5)
- [ ] Lake Erie coastal/tributary wetland-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)

Metric 6. Plant communities, interspersion, microtopography.

4 | 27
max 20 pts. | subtotal

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

(1) 0 / 1

- [ ] Aquatic bed
- [ ] Emergent
- [X] Shrub
- [X] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

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

(1)

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [X] Low (1)
- [ ] None (0)

(4)

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

(0)

- [ ] Extensive >75% cover (-8)
- [ ] 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.

(2)

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

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

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/document/ORAM3.html

ORAM v. 5.0 Field Form Quantitative Rating

Site:	Evpo 0	Rater(s): B.M Fark JWeiss / KMH	Date: 12/13/11

WETLAND: KK

ISOLATED or ADJACENT

# of flags: 12

SIZE in Ac.: 0.75?ac

Metric 1. Wetland Area (size).

2 | 2 (max 6 pts. | subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

8 | 10 (max 14 pts. | subtotal)

Sp 63

Category 2

2a. Calculate average buffer width. Select only one and assign score. Do not double check. (4)

- [x] 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. (4)

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

Metric 3. Hydrology.

10 | 29 (max 30 pts. | subtotal)

3a. Sources of Water. Score all that apply. (1)

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

3b. Connectivity. Score all that apply. (2)

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

3c. Maximum water depth. Select only one and assign score. (1)

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

3d. Duration inundation/saturation. Score one or dbl check. (1)

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

3e. Modifications to natural hydrologic regime. Score one or double check and average. (5)

- [ ] None or none apparent (12)
- [x] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

14 | 34 (max 20 pts. | subtotal)

4a. Substrate disturbance. Score one or double check and average. 3

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

4b. Habitat development. Select only one and assign score. 5

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

4c. Habitat alteration. Score one or double check and average. 4.5

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

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [ ] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

34 (subtotal this page)

Site: EVP 010	Rater(s): BRAD FALKINBURG	Date: 12/13/11

34
subtotal this page

WETLAND: KK

"0"	34
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

0

- [ ] 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)

11	45
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

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

5

- [ ] Aquatic bed
- 1 [x] Emergent
- 2 [x] Shrub
- 2 [x] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) interspersion.
Select only one.

2

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [x] 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

0

- [ ] 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.

4

- [ ] Vegetated hummucks/tussucks
- 3 [x] Coarse woody debris >15cm (6in)
- 1 [x] 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

45 GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

DRAM 4. 5.0 Field Form Quantitative Rating

Site: [illegible]	Rater(s): B. M FALK INBURG /	Date: [illegible]

WETLAND: LL
ISOLATED or ADJACENT
# of flags: 8
SIZE in AC.: >0.10

Metric 1. Wetland Area (size).

1 (max 5 pts.) | 1 (subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

12 (max 14 pts.) | 13 (subtotal)

SP64

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

7

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

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

5

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

Metric 3. Hydrology.

20 (max 30 pts.) | 33 (subtotal)

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

4

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

3b. Connectivity. Score all that apply.

2

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

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

1

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

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

1

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

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

12

- [x] None or none apparent (12)
- [ ] Recovered (7)
- [ ] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

8 (max 20 pts.) | 41 (subtotal)

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

4

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

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

1

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

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

3

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

Check all disturbances observed

- [ ] mowing
- [ ] grazing
- [x] clearcutting
- [x] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

41 (subtotal this page)

Site: [illegible]	Rater(s): BRAD FALKINBURG	Date: 12/13/11

41
subtotal this page

WETLAND: LL

SP 64

"0"	41
max 10 pts.	subtotal

Metric 5. Special Wetlands.

Check all that apply and score as indicated.

0

- [ ] 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	38
max 20 pts.	subtotal

Metric 6. Plant communities, interspersion, microtopography.

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

1

- [ ] Aquatic bed
- [x] Emergent 1
- [x] Shrub 0
- [ ] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

6b. horizontal (plan view) interspersion.
Select only one.

1

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [ ] Moderately low (2)
- [x] Low (1)
- [ ] None (0)

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

-5

Phalaris

- [x] 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.

0

- [ ] Vegetated hummucks/tussucks
- [ ] 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

38 GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised 1 February 2001 8m

CRAM V. 5.0 FIELD FORM MIDDLEWEST Rating

Site: [illegible]	Rater(s): B. M FACK INBURG /	Date: [illegible]

WETLAND: MM
ISOLATED or ADJACENT
# of flags: 8 west edge
SIZE in AC.: Lac

SP65

Metric 1. Wetland Area (size).

2 | 2 (max 6 pts. / subtotal)

Select one size class and assign score.

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

Metric 2. Upland buffers and surrounding land use.

8 | 10 (max 14 pts. / subtotal)

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

4

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [x] 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.

4

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

Metric 3. Hydrology.

9 | 19 (max 30 pts. / subtotal)

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

1

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

3b. Connectivity. Score all that apply.

2

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

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

1

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

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

2

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

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

3

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [x] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [ ] other_____

Metric 4. Habitat Alteration and Development.

8 | 27 (max 20 pts. / subtotal)

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

2

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

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

3

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

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

3

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

Check all disturbances observed

- [x] mowing
- [ ] grazing
- [ ] clearcutting
- [ ] selective cutting
- [ ] woody debris removal
- [ ] toxic pollutants
- [ ] shrub/sapling removal
- [ ] herbaceous/aquatic bed removal
- [ ] sedimentation
- [ ] dredging
- [ ] farming
- [ ] nutrient enrichment

27 (subtotal this page)

Site:	Rater(s): BRAD FALKINBURG	Date:

27 (subtotal this page)

WETLAND: MM

SP 65

0 (max 10 pts)	27 (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)

0

5 (max 20 pts)	32 (subtotal)

Metric 6. Plant communities, interspersion, microtopography.

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

- [ ] Aquatic bed
- [x] Emergent
- [x] Shrub
- [x] Forest
- [ ] Mudflats
- [ ] Open water
- [ ] Other_____

3 (2 / 1 / 0)

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

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [x] Moderately low (2)
- [ ] Low (1)
- [ ] None (0)

2

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

phalaris

- [ ] Extensive >75% cover [-5]
- [ ] Moderate 25-75% cover (-3)
- [x] Sparse 5-25% cover [-1]
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

-1

6d. Microtopography.
Score all present using 0 to 3 scale.

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

1

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

32 GRAND TOTAL(max 100 pts)

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/ORAM.html

CRAM v. 5.0 Field Form Quantitative Rating

Site: Evergreen	Rater(s): BMF	Date: 12-14-11

Wetland NN
SP-66
Non-isolated
(Cat I)

Metric 1. Wetland Area (size).

2 | 2 (max 8 pts. | subtotal)

Select one size class and assign score.

- [ ] >50 acres (>20.2ha) (8 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)
- [x] 0.3 to <3 acres (0.12 to <1.2ha) (2pts)
- [ ] 0.1 to <0.3 acres (0.04 to <0.12ha) (1 pt)
- [ ] <0.1 acres (0.04ha) (0 pts)

Metric 2. Upland buffers and surrounding land use.

3 | 5 (max 14 pts. | subtotal)

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

- [ ] WIDE. Buffers average 50m (164ft) or more around wetland perimeter (7)
- [ ] MEDIUM. Buffers average 25m to <50m (82 to <164ft) around wetland perimeter (4)
- [x] 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.

2

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

Metric 3. Hydrology.

9 | 14 (max 30 pts. | subtotal)

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

1

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

3b. Connectivity. Score all that apply.

2

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

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

1

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

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

2

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

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

3

- [ ] None or none apparent (12)
- [ ] Recovered (7)
- [x] Recovering (3)
- [ ] Recent or no recovery (1)

Check all disturbances observed

- [ ] ditch
- [ ] tile
- [ ] dike
- [ ] weir
- [ ] stormwater input
- [ ] point source (nonstormwater)
- [ ] filling/grading
- [ ] road bed/RR track
- [ ] dredging
- [x] other man made pond attached to E. wetland edge

Metric 4. Habitat Alteration and Development.

9 | 23 (max 20 pts. | subtotal)

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

3

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

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

3

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

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

3

- [ ] None or none apparent (9)
- [ ] Recovered (6)
- [x] 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
- [x] farming
- [ ] nutrient enrichment

23 (subtotal this page)

ORAM v. 5.0 Field Form Quantitative Rating

Site: Everpower	Rater(s): BMF	Date: 12-14-11

Wetland UU
SP-66

23
subtotal this page

0 | 23 **Metric 5. Special Wetlands.**
max 10 pts. subtotal

Check all that apply and score as indicated.

- [ ] Bog (10)
- [ ] Fen (10)
- [ ] Old growth forest (10)
- [ ] Mature forested wetland (3)
- [ ] 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)

0

5 | 28 **Metric 6. Plant communities, interspersion, microtopography.**
max 20 pts. subtotal

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

- [ ] Aquatic bed
- [x] Emergent (1)
- [x] Shrub (1)
- [x] Forest (2)
- [ ] Mudflats
- [x] Open water (0)
- [ ] Other_____

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

- [ ] High (5)
- [ ] Moderately high(4)
- [ ] Moderate (3)
- [x] 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

Phrag

- [ ] Extensive >75% cover (-5)
- [x] Moderate 25-75% cover (-3)
- [ ] Sparse 5-25% cover (-1)
- [ ] Nearly absent <5% cover (0)
- [ ] Absent (1)

6d. Microtopography.
Score all present using 0 to 3 scale.

- [ ] Vegetated hummocks/tussucks
- [x] Coarse woody debris >15cm (6in) (1)
- [x] Standing dead >25cm (10in) dbh (1)
- [x] Amphibian breeding pools (2)

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

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

Refer to the most recent ORAM Score Calibration Report for the scoring breakpoints between wetland categories at the following address: http://www.epa.state.oh.us/dsw/401/401.html

last revised: 1 February 2001 jm

APPENDIX D

Stream Data Sheets

Mod class II PHWH STR D-2

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 49

SITE NAME/LOCATION 2nd trib to Tracie Creek

SITE NUMBER STR D-2 RIVER BASIN _____ DRAINAGE AREA (mi²) 0.55 mi²

LENGTH OF STREAM REACH (ft) _____ LAT. 41.1438 LONG. 82.39143 RIVER CODE _____ RIVER MILE _____

DATE 12-18-11 SCORER BHF/JJ COMMENTS _____

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

STREAM CHANNEL MODIFICATIONS: ☐ None ☐ Recovering ☐ Recovered ☐ Altered ☐ Recently Altered

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]		☐	SILT [3 pts]	✓ 10
☐	BOULDER (>256 mm) [14 pts]		☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pts]		☐	FINE DETRITUS [3 pts]	
☐	COBBLE (65-256 mm) [12 pts]		■	CLAY or HARDPAN [0 pts]	✓ 80
☐	GRAVEL (2-64 mm) [9 pts]	✓ 10	☐	MUCK [0 pts]	
☐	SAND (<2 mm) [6 pts]	✓ 10	☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0 (A) 0

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 4

HHEI Metric Points

Substrate Max = 40: 4

A + B

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

- ☐ > 30 centimeters [35 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☒ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

20

COMMENTS 5, 6 + 8" MAXIMUM POOL DEPTH (centimeters):

Pool Depth Max = 35: 25

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

- ☐ > 9.0 meters [> 13'] [30 pts]
- ☐ > 3.0 m - 9.0 m [> 9'-13'] [25 pts]
- ☒ > 1.5 m - 3.0 m [> 5'-9'] [20 pts]
- ☐ > 1.0 m - 1.5 m [> 3'-5'] [15 pts]
- ☐ ≤ 1.0 m [≤ 3'] [5 pts]

2.1

COMMENTS 6', 7', 8' AVERAGE BANKFULL WIDTH (meters)

Bankfull Width Max=20: 20

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

- ☐ None
- ■ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.0 ft/100 ft) ☐ Flat to Moderate ■ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

STREAM D-2

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ 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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: _____ Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: _____ Quantity: _____

Photograph Information: Y 1+4

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) 32° 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

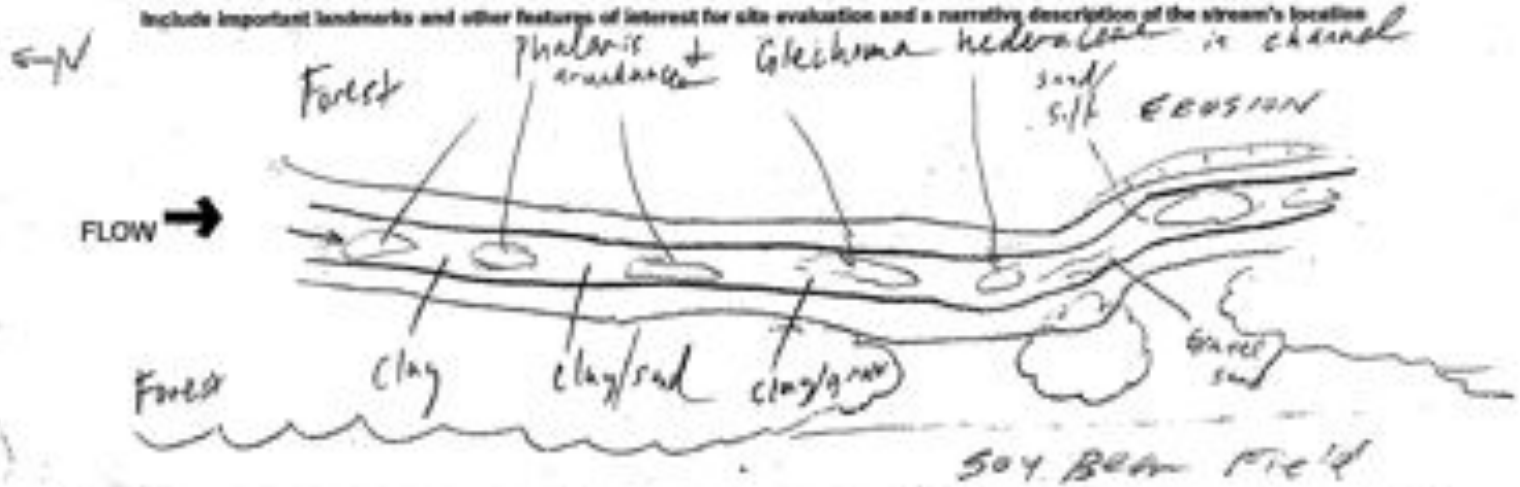
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

Comments Regarding Biology: None Noted - stream usually dry, Grass growing throughout channel

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

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



Exceptional WWH (EWH) STREAM D-3

OhioEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 65.5

Stream & Location: EVP 010 **RM:** ___ **Date:** 12/3/11

Scorers Full Name & Affiliation: B FALKINBURG

River Code: - - **STORET #:** **Lat./Long.:** (DAC 83 - decimal °) . /8 . Office verified location ☐

1] SUBSTRATE

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

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
[illegible]	✓1		[illegible]		
[illegible]	✓5		[illegible]		
[illegible]	✓30		[illegible]	✓5	
[illegible]	✓10		[illegible]		

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

NUMBER OF BEST TYPES: ☒ [illegible] ☐ [illegible]

Check ONE (Or 2 & average)

ORIGIN: [illegible]

SILT / EMBEDDEDNESS

QUALITY: [illegible]

Substrate: 17 (Maximum 20)

Comments: 7+7+2+1+0+0

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.

(1) [illegible] (1) [illegible] (1) [illegible]

AMOUNT — Check ONE (Or 2 & average): [illegible]

Comments: 1+1+1+1+3

Cover: 7 (Maximum 20)

3] CHANNEL MORPHOLOGY

Check ONE in each category (Or 2 & average)

SINUOSITY: [illegible]

DEVELOPMENT: [illegible]

CHANNELIZATION: [illegible]

STABILITY: [illegible]

Comments: 2+5+3.5+2

Channel: 12.5 (Maximum 20)

4] BANK EROSION AND RIPARIAN ZONE

Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

EROSION (L R): [illegible]

RIPARIAN WIDTH (L R): [illegible]

FLOOD PLAIN QUALITY (L R): [illegible]

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

Comments: 3+4+2

Riparian: 9 (Maximum 10)

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH — Check ONE (ONLY!): [illegible]

CHANNEL WIDTH — Check ONE (Or 2 & average): [illegible]

CURRENT VELOCITY — Check ALL that apply: [illegible]

Indicate for reach - pools and riffles.

Recreation Potential: Primary Contact / Secondary Contact (circle one and comment on back)

Comments: 2+2+1

Pool / Current: 5 (Maximum 12)

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: [illegible]

RUN DEPTH: [illegible]

RIFFLE / RUN SUBSTRATE: [illegible]

RIFFLE / RUN EMBEDDEDNESS: [illegible]

Comments: 2+2+1+0

Riffle / Run: 5 (Maximum 8)

6] GRADIENT

([illegible]) (ft/mi) DRAINAGE AREA (1.59 mi²) [illegible] (P)

%POOL: 10 %GLIDE: 35 %RUN: 5 %RIFFLE: 50

Gradient: 10 (Maximum 10)

STREAM D3

A] SAMPLED REACH
Check ALL that apply

METHOD

STAGE
1st ←sample pass→ 2nd

DISTANCE
OTHER
meters

CLARITY
1st ←sample pass→ 2nd
SECCHI DEPTH

CANOPY
1st _____ cm
2nd _____ cm

Comment RE: Reach consistency/Is reach typical of steam?, Recreation/Observed - Inferred, Other/Sampling observations, Concerns, Access directions, etc.

B] AESTHETICS

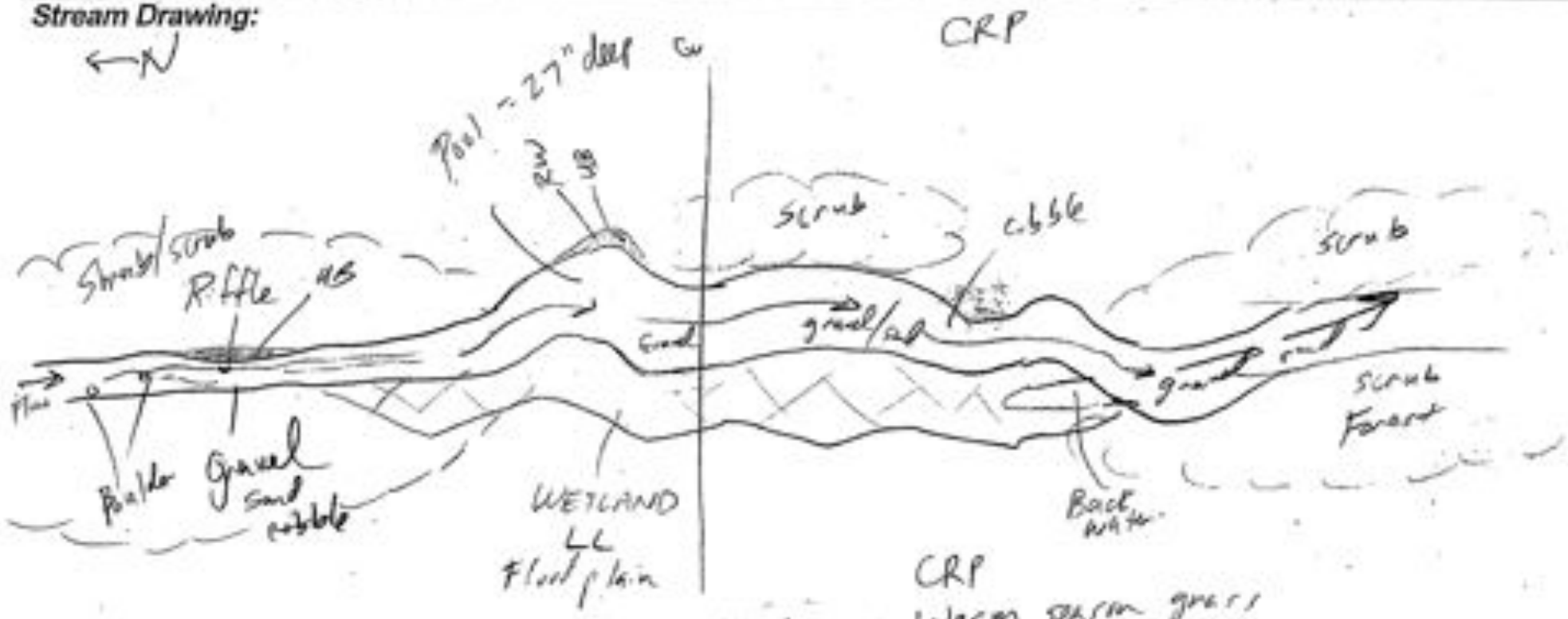
C] RECREATION AREA DEPTH
POOL: ☐>100ft² ☐>3ft

D] MAINTENANCE Circle some & COMMENT
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
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] 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 H_2O / TILE / H_2O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS
Legacy Tree

Stream Drawing:



Intermittent ~~Ephemeral~~ Class II by HHEI

STREAM D-4 ~~STREAM~~ ~~RR~~

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 47

SITE NAME/LOCATION E UP010 Dt to Treacle Creek

SITE NUMBER STR RR RIVER BASIN _____ DRAINAGE AREA (mi²) 1.6

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

DATE 10/18/11 SCORER BMF COMMENTS DRY

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

[redacted]

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 30). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	[redacted]	✓ 1%	☐☐	[redacted]	✓ 4
☐☐	[redacted]		☐☐	[redacted]	
☐☐	[redacted]		☐☐	[redacted]	
☒☐	[redacted]	✓ 40	☐☐	[redacted]	✓ 8
☐☒	[redacted]	✓ 30	☐☐	[redacted]	
☐☐	[redacted]	✓ 10	☐☐	[redacted]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 41% (A) 21

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: _____ TOTAL NUMBER OF SUBSTRATE TYPES: (B) 6

HHEI Metric Points

Substrate Max = 40: 27 (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):

☐ [redacted]
☐ [redacted]
☐ [redacted]
☐ [redacted]
☒ [redacted]

0

COMMENTS DRY MAXIMUM POOL DEPTH (centimeters): _____

Pool Depth Max = 30: 0

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

☐ [redacted]
☐ [redacted]
☒ [redacted]
☐ [redacted]
☐ [redacted]

9'

COMMENTS 9' AVERAGE BANKFULL WIDTH (meters): _____

Bankfull Width Max=20: 20

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)

L	R	
☒	☒	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R	
☐	☐	Mature Forest, Wetland
☒	☒	Immature Forest, Shrub or Old Field
☐	☐	Residential, Park, New Field
☐	☐	Fenced Pasture
☐	☐	Conservation Tillage
☐	☐	Urban or Industrial
☐	☐	Open Pasture, Row Crop
☐	☐	Mining or Construction

COMMENTS CRP Left Bank

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

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

COMMENTS DRY NO FLOW

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

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

STREAM GRADIENT ESTIMATE

☐ Flat (pasture) ☐ Flat to Moderate ☒ Moderate (pasture) ☐ Moderate to Severe ☐ Severe (pasture)

October 24, 2002 Revision

watershed size 1.6 mi²

STREAM BK D4

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

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

DOWNSTREAM DESIGNATED USES?

☐ DWH Name: _____ Distance from Evaluated Stream: _____

☐ CWH Name: _____ Distance from Evaluated Stream: _____

☐ EWH Name: Mr. TREACLE CREEK Distance from Evaluated Stream: _____

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

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

County: CHAMPAIGN Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/18/11 Quantity: ?

Photograph Information: yes 1 + 2

Elevated Turbidity? (Y/N): N Canopy (% open): 50%

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)

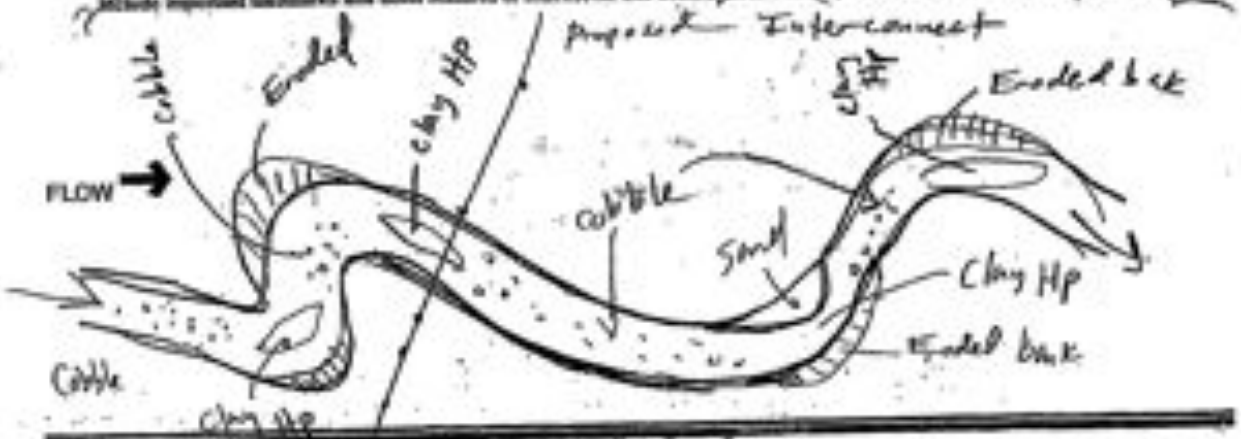
Fish Observed? (Y/N) N Voucher? (Y/N) _____ Salamanders Observed? (Y/N) N Voucher? (Y/N) _____

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

Comments Regarding Biology: Dry – no 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/riparian



Stream E

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 37

SITE NAME/LOCATION EVPBEI Sheet 3

SITE NUMBER HHEI-6 RIVER BASIN _____ DRAINAGE AREA (mi²) ~~[illegible]~~ 2.73

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

DATE 11/20/08 SCORER SMH, KC COMMENTS _____

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

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

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☒☐	GRAVEL (2-64 mm) [9 pts]	60	☐☐	MUCK [0 pts]	
☒☐	SAND (<2 mm) [9 pts]	40	☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0 (A) 15 (B) 2

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

HHEI Metric Points

Substrate Max = 40: 17

A + B

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

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

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters):

Pool Depth Max = 30: 0

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

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☒ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters) 2.5

Bankfull Width Max=30: 20

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 meters) ☒ Flat to Moderate ☐ Moderate (0.5 meters) ☐ Moderate to Severe ☐ Severe (no meters)

Modified Class II intermittent

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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Champaign Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 11/19/08 Quantity: <1"

Photograph Information: yes

Elevated Turbidity? (Y/N): N Canopy (% open): approx 95%

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) ____ If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

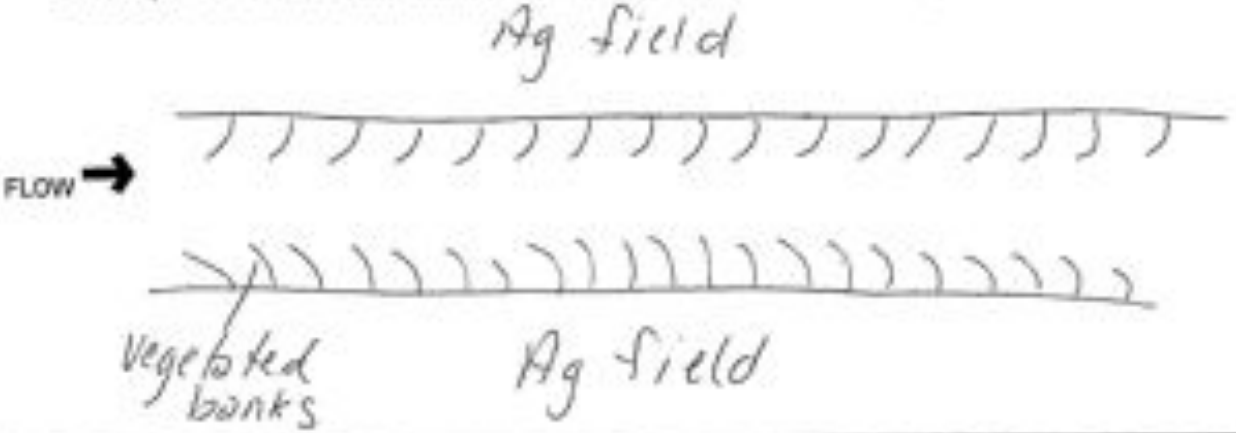
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

Comments Regarding Biology: - stream dry at time of evaluation

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



EPA 007

STREAM - E

OhioEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 44

Stream & Location: STREAM E - Dugout Run RM: ___ Date: 6/28/2011

Scorers Full Name & Affiliation: BRAD FRANKENBERG - HEC

River Code: - - STORET #: Lat/Long: 41.1282 N 83.6713 W Office verified ☐

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

BEST TYPES | POOL | RIFFLE | OTHER TYPES | POOL | RIFFLE

- ☐☐ BOULDER [9]
- ☐☐ BOULDER/SLAB [9]
- ☐☐ COBBLE [7]
- ■☐ GRAVEL [6] — POOL: 35 — RIFFLE: 50
- ■☐ SAND [5] — POOL: 55 — RIFFLE: 0
- ☐☐ BEDROCK [9]
- ☐☐ HARDPAN [8]
- ☐☐ DETRITUS [3]
- ☐☐ MUCK [3]
- ☐☐ SILT [2]
- ☐☐ ARTIFICIAL [0]

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

NUMBER OF BEST TYPES: ■ 4 OR MORE [2] ☐ 3 OR LESS [1]

Check ONE (Or 2 & average)

ORIGIN: ☐ MODIFIED [0] ■ NONE [1] ☐ WETLANDS [0] ☐ KARST [1] ☐ FLOODPLAIN [1] ☐ CHANNELIZED [0] ☐ DAM INFLUENCE [0]

SILT: ☐ HEAVY [-2] ☐ MODERATE [-1] ■ NORMAL [0] ☐ FREE [0]

QUALITY: ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☐ NORMAL [0] ☐ NONE [1]

Substrate: 16 (Maximum 20)

Comments: 2+7+6+1 +0 +0

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)

- ___ UNDERCUT BANKS [1]
- ___ OVERHANGING VEGETATION [1]
- ___ SHALLOWS (IN SLOW WATER) [1]
- ___ ROOTMATS [1]
- 1 BOULDERS [2]
- ___ LOGS OR WOODY DEBRIS [1]
- ___ AQUATIC MACROPHYTES [1]
- ___ LOGS OR WOODY DEBRIS [1]

AMOUNT (Check ONE (Or 2 & average))

☐ EXTENSIVE >75% [11] ☐ MODERATE 25-75% [7] ■ SPARSE 5-25% [3] ☐ NEARLY ABSENT <5% [1]

Cover Maximum 20: 9 → 10

Comments: 1+1+2+1+1+3

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

SINUOSITY: ☐ EXCELLENT [5] ☐ GOOD [3] ■ FAIR [1] ☐ POOR [0]

DEVELOPMENT: ☐ EXCELLENT [5] ☐ GOOD [3] ■ FAIR [1] ☐ POOR [0]

CHANNELIZATION: ☐ NONE [6] ☐ RECOVERED [4] ■ RECOVERING [3] ☐ RECENT OR NO RECOVERY [1]

STABILITY: ☐ HIGH [3] ☐ MODERATE [2] ■ LOW [1]

Comments: 2 +3 +3 +1

Channel Maximum 20: 9 → 11

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

Riparian width and flood plain quality are determined looking downstream

EROSION (L / R)

- ☐☐ NONE OR LITTLE [3]
- ■■ MODERATE [2]
- ☐☐ HEAVY OR SEVERE [0]

RIPARIAN WIDTH (L / R)

- ☐☐ WIDE >50m [4]
- ☐☐ MOD. 10-50m [3]
- ☐☐ NARROW 5-10m [2]
- ■■ VERY NARROW <5m [1]
- ☐☐ NONE [0]

FLOOD PLAIN QUALITY (L / R)

- ☐☐ FOREST, SWAMP [3]
- ☐☐ SHRUB OR OLD FIELD [2]
- ☐☐ RESIDENTIAL, PARK, NEW FIELD [1]
- ☐☐ FENCED PASTURE [1]
- ■■ OPEN PASTURE, ROWCROP [0]

☐☐ CONSERVATION TILLAGE [1]
☐☐ URBAN OR INDUSTRIAL [0]
☐☐ MINING/CONSTRUCTION [0]

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

Riparian Maximum 10: 3 → 11

Comments: 2 +1 +0

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH (Check ONE (ONLY))

- ☐ >1m [6]
- ■ >0.7 to 1m [6]
- ☐ >0.4 to 0.7m [4]
- ☐ >0.2 to 0.4m [2]
- ☐ ≤0.2m [1]

CHANNEL WIDTH (Check ONE (Or 2 & average))

- ☐ STREAM WIDTH > 4x POOL WIDTH [1]
- ☐ POOL WIDTH 1-4x STREAM WIDTH [2]
- ■ POOL WIDTH > STREAM WIDTH [3]

CURRENT VELOCITY (Check ALL that apply)

- ☐ TORRENTIAL [-1]
- ■ SLOW [1]
- ☐ VERY FAST [1.5]
- ☐ INTERSTITIAL [-1]
- ☐ FAST [1]
- ☐ INTERMITTENT [-2]
- ☐ MODERATE [1]
- ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool / Current Maximum 12: 5 → 12

Comments: 4 +0 +1

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

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH

- ☐ >0.5m [4]
- ☐ >0.25 to 0.5m [2]
- ■ 0.1 TO 0.25m [1]
- ☐ <0.1m [0]

RUN DEPTH (Check ONE (Or 2 & average))

- ☐ MAXIMUM >1m [2]
- ■ MAXIMUM <1m [1]

RIFFLE / RUN SUBSTRATE (Check ONE (Or 2 & average))

- ■ STABLE (e.g., Cobble, Boulder, Bedrock) [2]
- ☐ MOD. STABLE (e.g., Gravel, Sand) [1]
- ☐ UNSTABLE (e.g., Fines, Detritus) [0]

RIFFLE / RUN EMBEDDEDNESS

- ■ NONE [2]
- ☐ LOW [1]
- ☐ MODERATE [0]
- ☐ EXTENSIVE [-1]

Riffle / Run Maximum 8: 0 → 12

Comments: 0 +1 +1.5 +2

6] GRADIENT
DRAINAGE AREA (2.73 sq mi)

- ■ VERY LOW [2.4]
- ☐ LOW [1.6]
- ☐ MODERATE [0.8]
- ☐ HIGH [0.4]
- ☐ VERY HIGH [0]

%POOL: 20 %GLIDE: 05 %RUN: 5 %RIFFLE: 10

Gradient Maximum 10: 2 → 14

EPA 4020 09/16/06

A] SAMPLED REACH
Check ALL that apply

METHOD
- ☐ BOAT
- ☐ WADE
- ☐ [illegible]
- ☐ OTHER

STAGE
1st ←sample pass→ 2nd
- ☐ HIGH ☐
- ☐ [illegible] ☐
- ☐ NORMAL ☐
- ☐ LOW ☐
- ☐ DRY ☐

DISTANCE
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ OTHER

meters

CLARITY
1st ←sample pass→ 2nd
- ☐ [illegible] ☐
- ☐ [illegible] ☐
- ☐ [illegible] ☐
- ☐ [illegible] ☐
- ☐ SECCHI DEPTH ☐

CANOPY
1st _____ cm
2nd _____ cm
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]

B] AESTHETICS
- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ OILS / SHEEN
- ☐ TRASH / OTHER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ [illegible]

C] RECREATION
AREA DEPTH
POOL: ☐ >100ft² ☐ >3ft

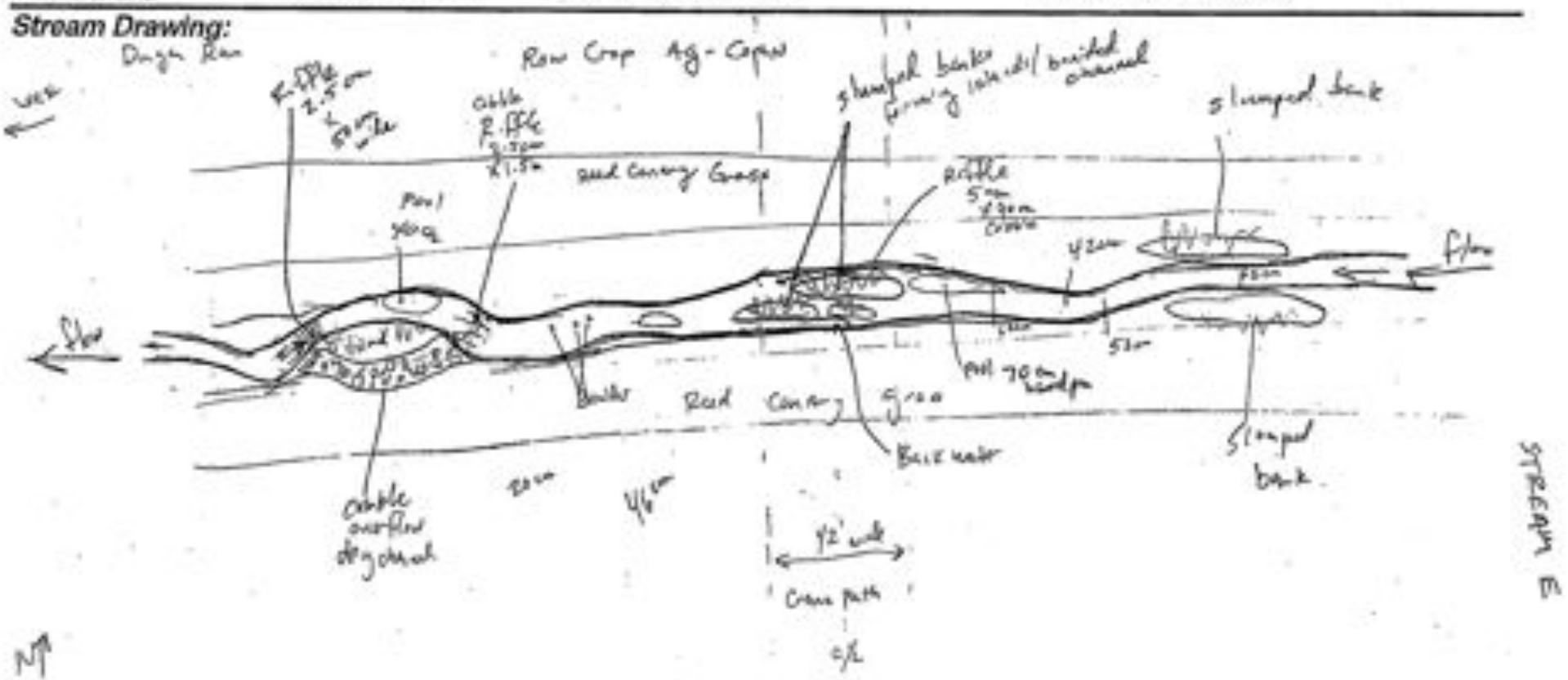
D] MAINTENANCE
Circle some & COMMENT
- PUBLIC / PRIVATE / BOTH / NA
- ACTIVE / HISTORIC / BOTH / NA
- YOUNG-SUCCESSION-OLD
- SPRAY / SNAG / REMOVED
- MODIFIED / DIPPED OUT / NA
- LEVEED / ONE SIDED
- RELOCATED / CUTOFFS
- MOVING-BEDLOAD-STABLE
- ARMOURED / SLUMPS
- ISLANDS / SCOURED
- IMPOUNDED / DESICCATED
- FLOOD CONTROL / DRAINAGE

E] 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 $H_2\emptyset$ / TILE / $H_2\emptyset$ TABLE
- ACID / MINE / QUARRY / FLOW
- NATURAL / WETLAND / STAGNANT
- PARK / GOLF / LAWN / HOME
- ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS
[illegible]
Legacy Tree:

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed – Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

Stream Drawing:



based on HMFEI & lack of salamanders * Modified Class II

Ohio EPA Primary Headwater Habitat Evaluation Form

EVP001 Stream F

HHEI Score (sum of metrics 1, 2, 3) : 74

SITE NAME/LOCATION MAD 10/15

SITE NUMBER _____ RIVER BASIN _____ DRAINAGE AREA (mi²) 0.24

LENGTH OF STREAM REACH (ft) 200 LAT. 40°8'56.62 LONG. 83°34'10.49 RIVER CODE _____ RIVER MILE _____

DATE 5/21/08 SCORER SMH COMMENTS _____

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

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

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	
☐☒	BOULDER (>256 mm) [16 pts]	1	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☒	COBBLE (66-256 mm) [12 pts]	15	☐☐	CLAY or HARDPAN [0 pt]	
☒☐	GRAVEL (2-64 mm) [9 pts]	40	☐☐	MUCK [0 pts]	
☒☐	SAND (<2 mm) [6 pts]	45	☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 16 (A) 15 (B) 4

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

HHEI Metric Points

Substrate Max = 40: 19

A + B

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

- ☐ > 30 centimeters [20 pts]
- ☒ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): 20

Pool Depth Max = 30: 30

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

- ☐ > 4.0 meters (> 13') [30 pts]
- ☒ > 3.0 m - 4.0 m (> 9' 7" - 13') [20 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): 25

Bankfull Width Max=30: 25

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

☐ Flat (0.5-1.0 ft) ☒ Flat to Moderate ☐ Moderate (1.0-1.5 ft) ☐ Moderate to Severe ☐ Severe (>1.5-2.0 ft)

October 24, 2002 Revision

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: Mad River 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: VA Military District LOT 3468 NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Champaign Township / City: Union Twp

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 5/20 Quantity: <1"

Photograph Information: EVP001.300.0006 photo #s 19-20

Elevated Turbidity? (Y/N): N Canopy (% open): 40

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) _____ Dissolved Oxygen (mg/l) _____ pH (S.U.) _____ Conductivity (µmhos/cm) _____

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

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

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

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

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

See photos

Stream F

3. Macroinvertebrate Scoring Sheet: EVP001

THE HEADWATER MACROINVERTEBRATE FIELD EVALUATION INDEX (HMFEI) SCORING SHEET

Indicate Abundance of Each Taxa Above each White Box.
Record HMFEI Scoring Value Points Within each Box.
For EPT taxa, also indicate the number of different taxa present.

Key: V = Very Abundant (> 50); A = Abundant (10 -50); C = Common (3 -9); R = Rare (< 3)

Sessile Animals (Porifera, Cnidaria, Bryozoa) (HMFEI pts = 1)	Crayfish (Decapoda) (HMFEI pts = 3) R 2	Flatfly Larvae (Corydalidae) (HMFEI pts = 3)
Aquatic Worms (Turbellaria, Oligochaeta, Hirudinea) (HMFEI pts = 1)	Dragonfly Nymphs (Anisoptera) (HMFEI pts = 2)	Water Penny Beetles (Psephenidae) (HMFEI pts = 3)
Sow Bugs (Isopoda) (HMFEI pts = 1)	Riffle Beetles (Dryopidae, Elmidae, Psilodactylidae) (HMFEI pts = 2)	Crane fly Larvae (Tipulidae) (HMFEI pts = 2)
Scuds (Amphipoda) (HMFEI pts = 1)	Larvae of other Flies (Diptera) Name: (HMFEI pts = 1) R 1	EPT TAXA Total No. EPT Taxa
Water Mites (Hydracarina) (HMFEI pts = 1)	Midges (Chironomidae) (HMFEI pts = 1) C 1	Mayfly Nymphs (Ephemeroptera) Taxa Present C [HMFEI pts = No. Taxa (x) 1] 2 6
Damselfly Nymphs (Zygoptera) (HMFEI pts = 1)	Snails (Gastropoda) (HMFEI pts = 1) C 1	
Alderfly Larvae (Sialidae) (HMFEI pts = 1)	Clams (Bivalvia) (HMFEI pts = 1)	Stonefly Nymphs (Plecoptera) Taxa Present [HMFEI pts = No. Taxa (x) 3]
Other Beetles (Coleoptera) (HMFEI pts = 1)	Other Taxa:	
Other Taxa:	Other Taxa:	Caddisfly Larvae (Trichoptera) Taxa Present 1 [HMFEI pts = No. Taxa (x) 3] 3
Other Taxa:	Other Taxa:	
Other Taxa:	Other Taxa:	

Voucher Sample ID: Stream H HMFE-1 Time Spent (minutes): 30

Notes on Macroinvertebrates (Predominant Organisms, Other Common Organisms, Diversity Estimate)

Final HMFEI Calculated Score (Sum of All White Box Scores) = 14

IF Final HMFEI Score is ≥ 20, Then CLASS III PERENNIAL STREAM
IF Final HMFEI Score is 7 to 19, Then CLASS II PERENNIAL STREAM
IF Final HMFEI Score is < 6, Then CLASS I INTERMITTENT STREAM

EVP001 Stream [F] sheet 16

PIEWI STREAM BIOLOGICAL CHARACTERISTICS FIELD SHEET:

1. Fish: Voucher Specimens Retained? (circle) Y / N Time Spent (minutes):_____
Sample Method _____ Stream Length Assessed (meters) _____

Species	Number Caught	Notes
	N/A	

2. Salamanders: Voucher Specimens Retained? (circle) Y (N) Time Spent (minutes): 30
Sample Method VES Stream Length Assessed (meters) 161 (200 ft)

Species (Genus)	# Larvae	# Juveniles/Adults	Total Number
Mountain Dusky (*Desmognathus ochrophaeus*)			Ø
Northern Dusky (*Desmognathus fuscus*)			Ø
Two-lined (*Eurycea bislineata*)			Ø
Long-tailed (*Eurycea longicauda*)			Ø
Cave (*Eurycea lucifuga*)			Ø
Red (*Pseudotriton ruber*)			Ø
Mud (*Pseudotriton montanus*)			Ø
Spring (*Gyrinophilus porphyriticus*)			Ø
Mole spp. (*Ambystoma spp.*)			Ø
Four-toed (*Hemidactylium scutatum*)			Ø
Other (name)			Ø
Total			

Notes on Vertebrates: no vertebrates wee observed at this sample reach

photos 96-97

WWH

STREAM J-2

OhioEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 72

Stream & Location: UT to DuGAN RUN **RM:** **Date:** 10/11/11

Scorers Full Name & Affiliation: B. FALKENBURG - HULL

River Code: - - **STORET #:** **Lat/Long:** 40.1299783 -65464 Office verified location ☐

1] SUBSTRATE

Check ONLY two substrate TYPE SCORES; estimate % or note every type present

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
[illegible]			[illegible]		
[illegible]			[illegible]	1	
■ [illegible]	35		[illegible]		
■ [illegible]	35		[illegible]	4	
[illegible]	5		[illegible]		
[illegible]			[illegible]		

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

NUMBER OF BEST TYPES: ■ [illegible] ☐ [illegible]

Check ONE (Or 2 & average)

ORIGIN: ☐ [illegible] ■ [illegible] ☐ [illegible] ☐ [illegible] ☐ [illegible] ☐ [illegible] ☐ [illegible] ☐ [illegible]

SILT

QUALITY: ☐ [illegible] ☐ [illegible] ■ [illegible] ☐ [illegible] ☐ [illegible] ☐ [illegible] ■ [illegible] ☐ [illegible]

Substrate: 19 (Maximum 20)

Comments: 8+7+2+1+0+0 = 19

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.

2	[illegible]	1	[illegible]	1	[illegible]
	[illegible]	1	[illegible]		[illegible]
	[illegible]		[illegible]	2	[illegible]
1	[illegible]				

AMOUNT — Check ONE (Or 2 & average): ☐ [illegible] ■ [illegible] ☐ [illegible] ☐ [illegible]

Comments: 1+1+2+1+1+1+7 = 14

Cover: 14 (Maximum 20)

3] CHANNEL MORPHOLOGY

Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
■ [illegible]	☐ [illegible]	■ [illegible]	☐ [illegible]
☐ [illegible]	■ [illegible]	☐ [illegible]	■ [illegible]
☐ [illegible]	☐ [illegible]	☐ [illegible]	☐ [illegible]
☐ [illegible]	☐ [illegible]	☐ [illegible]	

Comments: 4+5+6+12 = 17

Channel: 17 (Maximum 20)

4] BANK EROSION AND RIPARIAN ZONE

Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

EROSION (L R)	RIPARIAN WIDTH (L R)	FLOOD PLAIN QUALITY (L R)	(L R)
☐ ☐ [illegible]	☐ ☐ [illegible]	☐ ☐ [illegible]	☐ ☐ [illegible]
■ ■ [illegible]	■ ■ [illegible]	■ ■ [illegible]	☐ ☐ [illegible]
☐ ☐ [illegible]	☐ ☐ [illegible]	☐ ☐ [illegible]	☐ ☐ [illegible]
	☐ ☐ [illegible]	☐ ☐ [illegible]	
	☐ ☐ [illegible]	■ ☐ [illegible]	

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

Comments: 2+3+(2/2)(1) = 6

Riparian: 6 (Maximum 10)

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH (Check ONE (ONLY!))	CHANNEL WIDTH (Check ONE (Or 2 & average))	CURRENT VELOCITY (Check ALL that apply)	
☐ [illegible]	■ [illegible]	☐ [illegible]	■ [illegible]
■ [illegible]	☐ [illegible]	☐ [illegible]	☐ [illegible]
☐ [illegible]	☐ [illegible]	☐ [illegible]	☐ [illegible]
☐ [illegible]		☐ [illegible]	☐ [illegible]
☐ [illegible]			

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Comments: 4+2+1 = 7

Pool / Current: 7 (Maximum 12)

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
☐ [illegible]	☐ [illegible]	■ [illegible]	☐ [illegible]
■ [illegible]	■ [illegible]	☐ [illegible]	■ [illegible]
☐ [illegible]		☐ [illegible]	☐ [illegible]
			☐ [illegible]

Comments: 1+1+2+1

Riffle / Run: 5 (Maximum 8)

6] GRADIENT

61 (mm) DRAINAGE AREA 0.65 mi²

☐ [illegible] ☐ [illegible] ☒ [illegible]

(4)

%POOL: 35 %GLIDE: 20 %RUN: 10 %RIFFLE: 35

Gradient: 4 (Maximum 10) (72)

EPA 4520 06/16/06

A] SAMPLED REACH
Check ALL that apply

METHOD
STAGE
DISTANCE
CLARITY
meters
SECCHI DEPTH
CANOPY

Comment RE: Reach consistency/ is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

B] AESTHETICS

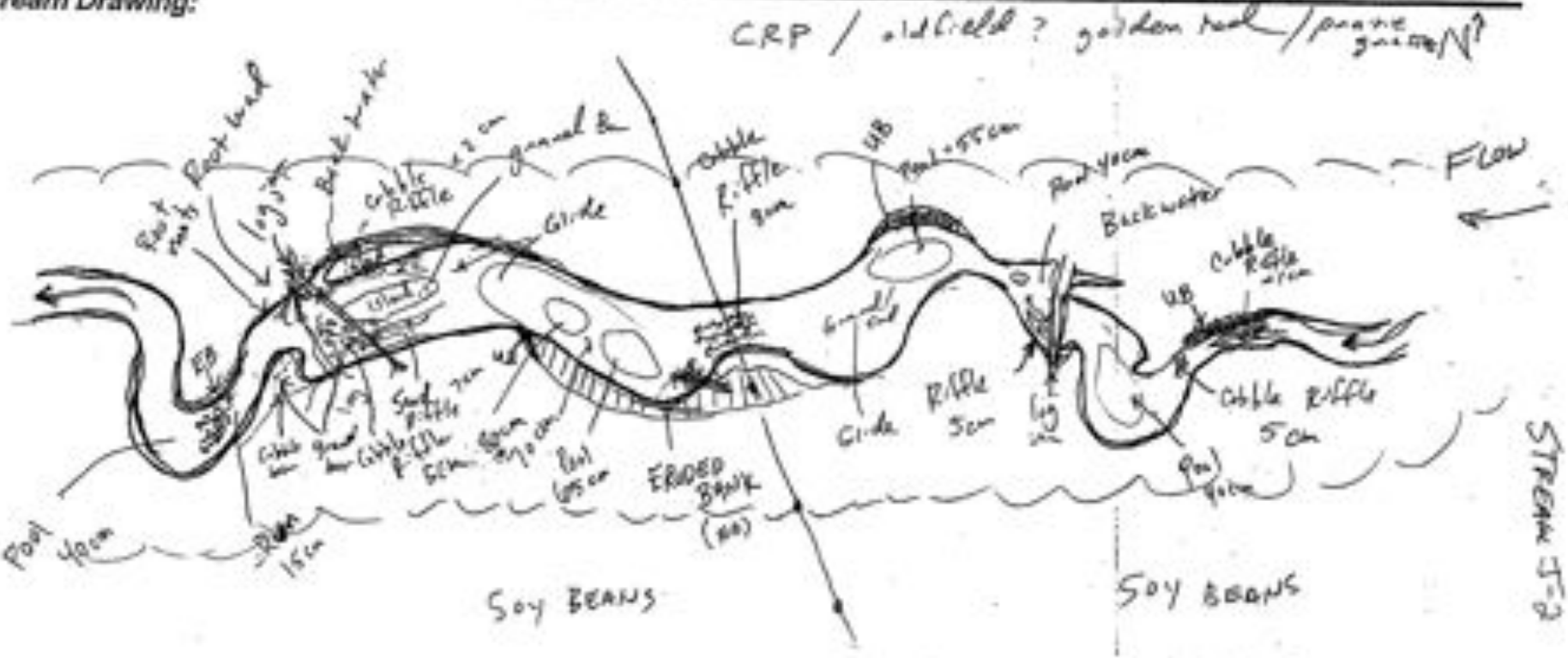
D] MAINTENANCE
Circle some & COMMENT
PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
RILANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] ISSUES
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / DOGLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_2O / TILE / H_2O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS
Legacy Tree:

C] RECREATION
AREA DEPTH
POOL: ☐>100m ☐>3ft

Stream Drawing:



Stream L

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 46

SITE NAME/LOCATION Everett Street 16 - HHEI-1

SITE NUMBER 1 RIVER BASIN _____ DRAINAGE AREA (mi²) 1.95

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

DATE 11/19/08 SCORER SMH, KC COMMENTS _____

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

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

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	
☐☐	BOULDER (>250 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☒☐	COBBLE (65-250 mm) [12 pts]	30	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]	25	☐☐	MUCK [0 pts]	
☒☐	SAND (<2 mm) [6 pts]	45	☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 30% (A) 18 (B) 3

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):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [16 pts]
- ☐ < 5 cm [8 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS ~ 12" pool depths estimated MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

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

- ☐ > 4.0 meters (> 13') [30 pts]
- ☒ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters) 3.5

Bankfull Width Max=30: 25

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☒ 2.5
- ☐ 3.0
- ☐ >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)

Class II intermittent

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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Champaign Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 11/18/08 Quantity: .41"

Photograph Information: YES

Elevated Turbidity? (Y/N): N Canopy (% open): 60

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

Comments Regarding Biology: -stream dry at time of evaluation

st 6 ph. 1a

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

STREAM L

OhioEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 51.5

Stream & Location: Little Darby Creek – DRY CHANNEL RM: ___ Date: 6/30/11

Scorers Full Name & Affiliation: Brad Fallon/MEC / MEC

River Code: ___ - ___ - ___ STORET #: ___ Lat/Long: 40.0985 -83.5915 Office verified location ☐

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

BEST TYPES | POOL | RIFFLE | OTHER TYPES | POOL | RIFFLE

- ☐ ☐ BOULDER [9]
- ☐ ☐ COBBLE [8]
- ☐ ☐ GRAVEL [7]
- ☐ ☐ SAND [6]
- ☐ ☐ BEDROCK [9]
- ☐ ☐ HARDPAN [4]
- ☐ ☐ DETRITUS [3]
- ☐ ☐ MUCK [2]
- ☐ ☐ SILT [1]
- ☐ ☐ ARTIFICIAL [0]

NUMBER OF BEST TYPES: ☐ 1 or less [2] ☐ 2 or more [3]

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

Check ONE (Or 2 & average)

ORIGIN: ☐ EMBEDDEDNESS [1] ☐ BOULDER [9] ☐ WATER AMOR [7] ☐ HARDPAN [5] ☐ SANDSTONE [5] ☐ RIPRAP [5] ☐ CALCIUM [5] ☐ SHALE [5] ☐ COAL [5]

SILT

QUALITY: ☐ REMOVED [-2] ☐ MODERATE [-1] ☐ NORMAL [0] ☐ FREE [1] ☐ EXTENSIVE [2] ☐ MODERATE [1] ☐ NORMAL [0] ☐ NONE [1]

Substrate Maximum 20: 16

Comments: 2 + 7 + 6 + 1 + 0 + 0

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.

- ___ UNDERCUT BANKS [1]
- 2 OVERHANGING VEGETATION [1]
- ___ SHALLOW (<40 cm) WATER [1]
- ___ ROOTMATS [1]
- ___ POOLS/RIFFLES [2]
- 2 ROOTWADS [1]
- 1 BOULDERS [1]
- ___ SHADOWED BACKWATERS [1]
- ___ AQUATIC MACROPHYTES [1]
- 1 LOGS OR WOODY DEBRIS [1]

AMOUNT: Check ONE (Or 2 & average)

☐ EXTENSIVE >75% [3] ☐ MODERATE 25-75% [2] ☐ SPARSE 5-25% [1] ☐ NEARLY ABSENT <5% [0]

Cover Maximum 20: 12

Comments: 1 + 1 + 1 + 1 + 1 + 7

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

SINUOSITY: ☐ HIGH [4] ☐ MODERATE [3] ☐ LOW [2] ☐ NONE [1]

DEVELOPMENT: ☐ EXCELLENT [7] ☐ GOOD [5] ☐ FAIR [3] ☐ POOR [1]

CHANNELIZATION: ☐ NONE [6] ☐ RECOVERED [4] ☐ RECOVERING [3] ☐ RECENT OR ONGOING [2] ☐ CONSTANT [1]

STABILITY: ☐ HIGH [3] ☐ MODERATE [2] ☐ LOW [1]

Channel Maximum 20: 14

Comments: 3 + 5 + 4 + 2

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

Rate right looking downstream

EROSION: ☐ ☐ NONE OR LITTLE [3] ☐ ☐ MODERATE [2] ☐ ☐ HEAVY OR SEVERE [1]

RIPARIAN WIDTH: ☐ ☐ WIDE >50m [4] ☐ ☐ MODERATE 10-50m [3] ☐ ☐ NARROW 5-10m [2] ☐ ☐ VERY NARROW <5m [1] ☐ ☐ NONE [0]

FLOOD PLAIN QUALITY: ☐ ☐ FOREST, SWAMP [3] ☐ ☐ SHRUB OR OLD FIELD [2] ☐ ☐ RESIDENTIAL, PARK, NEW FIELD [1] ☐ ☐ FENCED PASTURE [1] ☐ ☐ OPEN PASTURE OR ROW CROP [0] ☐ ☐ CONSERVATION TILLAGE [1] ☐ ☐ URBAN OR INDUSTRIAL [0] ☐ ☐ MINING / CONSTRUCTION [0]

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

Riparian Maximum 10: 8.5

Comments: 3 + 3 + 2.5

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH: Check ONE (ONLY)

- ☐ >1m [6]
- ☐ 0.7-1m [4]
- ☐ 0.4-0.7m [2]
- ☐ 0.2-0.4m [1]
- ☐ <0.2m [0]

CHANNEL WIDTH: Check ONE (Or 2 & average)

- ☐ POOL WIDTH > RIFFLE WIDTH [2]
- ☐ POOL WIDTH = RIFFLE WIDTH [1]
- ☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY: Check ALL that apply

- ☐ SWIFT [2] ☐ MODERATE [1] ☐ INTERSTITIAL [1] ☐ INTERMITTENT [-1] ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential: Primary Contact / Secondary Contact (circle one and comment on back)

Pool / Current Maximum 12: -3

Comments: 0 + 0 - 1 - 2

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: ☐ NO RIFFLE [metric=0]

RIFFLE DEPTH: ☐ BEST AREAS >10cm [2] ☐ BEST AREAS 5-10cm [1] ☐ BEST AREAS <5cm [0]

RUN DEPTH: ☐ MAXIMUM >50cm [2] ☐ MAXIMUM <50cm [1]

Check ONE (Or 2 & average)

RIFFLE / RUN SUBSTRATE: ☐ GLIDE [0] ☐ MODERATELY [0] ☐ UNSUITABLE [0]

RIFFLE / RUN EMBEDDEDNESS: ☐ NONE [2] ☐ LOW [1] ☐ MODERATE [0] ☐ EXTENSIVE [0]

Riffle / Run Maximum 8: 0

Comments:

6] GRADIENT (ft/mi) ☐ VERY LOW [0-4] ☐ MODERATE [5-9] ☐ HIGH [10-14] ☐ VERY HIGH [15+]

DRAINAGE AREA (2.04 sq mi)

%POOL: 0 %GLIDE: 0 %RUN: 0 %RIFFLE: 0

Gradient Maximum 10: 4

EPA 4520 09/19/08

DRY

A] SAMPLED REACH
Check ALL that apply

METHOD
- ☐ BOAT
- ☐ WADE
- ☐ UAV
- ☐ OTHER

STAGE
1st –sample pass– 2nd
- ☐ RISING ☐
- ☐ FALLING ☐
- ☐ NO SWA ☐
- ☐ LOW ☐
- ☐ DRY ☐

DISTANCE
- ☐ 0.5 KM
- ☐ 1.0 KM
- ☐ 2.0 KM
- ☐ 3.0 KM
- ☐ OTHER

CLARITY
1st –sample pass– 2nd
- ☐ CLEAR ☐
- ☐ SLIGHT STN ☐
- ☐ MOD STN ☐
- ☐ HEAVY STN ☐
- ☐ SECCHI DEPTH ☐

markers

CANOPY
1st ____ cm
pass
2nd ____ cm
- ☐ OPEN
- ☐ 25% COVERED
- ☐ 50% COVERED
- ☐ 75% COVERED
- ☐ 100% COVERED

C] RECREATION AREA DEPTH
POOL: ☐ >100ft² ☐ >3ft

Comment RE: Reach consistency/ Is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

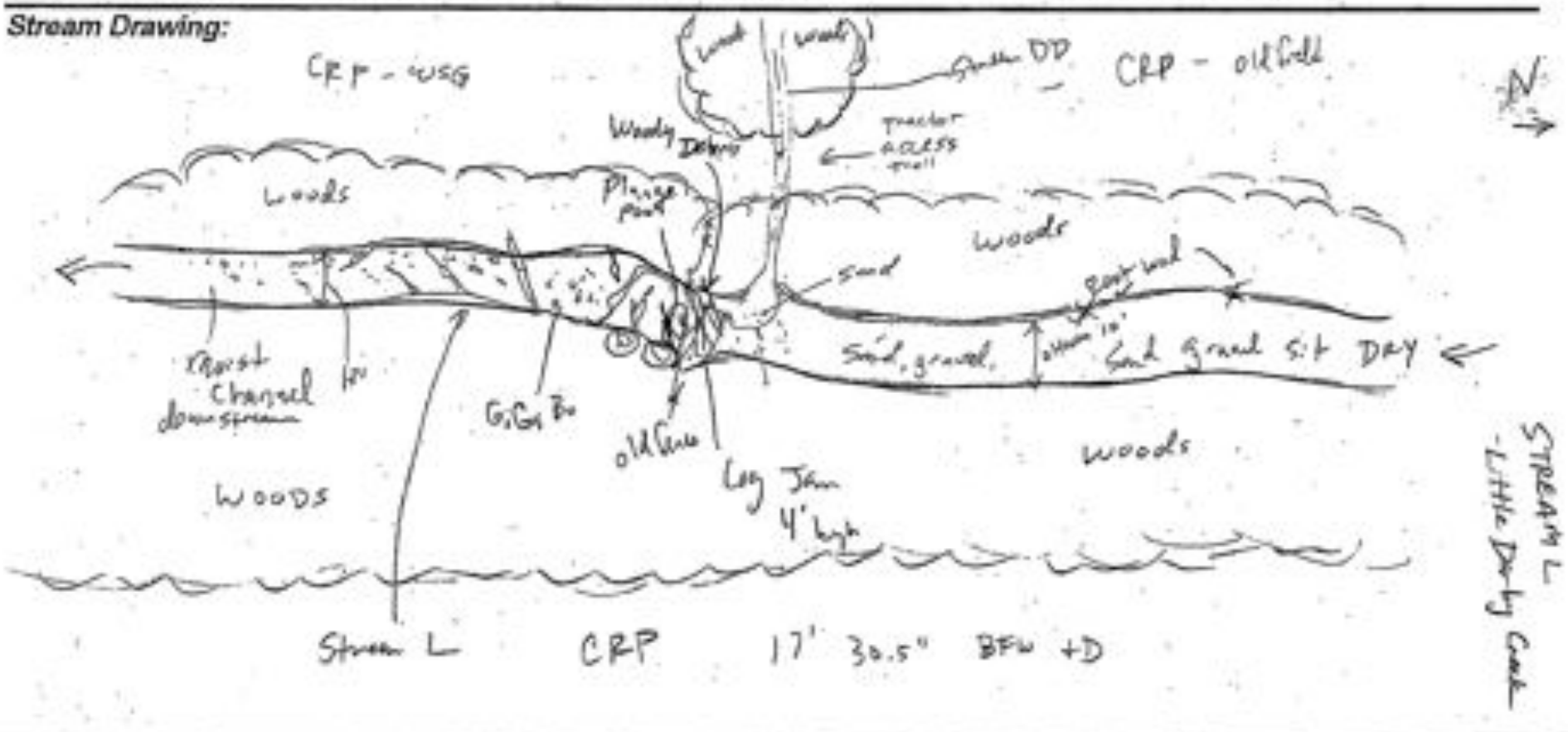
B] AESTHETICS
- ☐ NUISANCE PLOANT
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SUM
- ☐ OILSHEEN
- ☐ TRASH / LITTER
- ☐ NUISANCE ODORS
- ☐ ALGAE / DEPOSITS
- ☐ ICE / SNOW / OUTFALLS

D] MAINTENANCE Circle some & COMMENT
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
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

E] 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 H_2 / TILE / H_2 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS
Legacy Tree:

Stream Drawing:



Stream M

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 27

SITE NAME/LOCATION EYPERI Sheet 12

SITE NUMBER HHEI 7 RIVER BASIN _____ DRAINAGE AREA (mi²) 0.07

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

DATE 11/20/08 SCORER SMH, KC COMMENTS _____

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

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

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

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

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0 (A) 09 (B) 3

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

HHEI Metric Points

Substrate Max = 40: 12

A + B

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

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS dry MAXIMUM POOL DEPTH (centimeters): —

Pool Depth Max = 30: 0

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

- ☐ > 4.5 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.5 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☒ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters) 1.5

Bankfull Width Max=30: 15

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

☐ Flat (0.0 m/100 ft) ☒ Flat to Moderate ☐ Moderate (0.5 m/100 ft) ☐ Moderate to Severe ☐ Severe (10 m/100 ft)

October 24, 2002 Revision

Modified Class I ephemeral

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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Champaign Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 11/19/18 Quantity: < 1"

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 40

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 (umhos/cm) _____

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

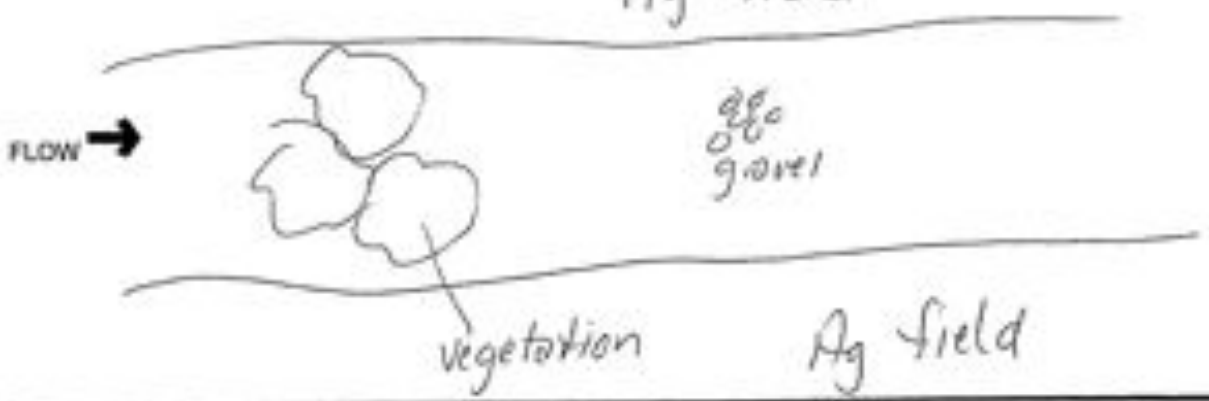
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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

Comments Regarding Biology: _____
- stream dry at time of evaluation

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



EVP0001 Sheet 26 Stream ☐

OhioEPA — Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 96.5

Stream & Location: East Fork Bunk Creek RM: ___ Date: 5/2/08

Scorers Full Name & Affiliation: K. Carr - MEC

River Code: ___ STORET #: ___ Lat/Long: ___ / ___ Office verified location ☐

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

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐ BLDR/SLABS [10]			☐ HARDPAN [4]		
☐ BOULDER [9]			☐ DETRITUS [3]		
☐ COBBLE [8]		80	☐ MUCK [2]		
☐ GRAVEL [7]		20	☒ SILT [2]	50	
☒ SAND [6]	100		☐ ARTIFICIAL [0]		
☐ BEDROCK [5]			(Score natural substrates; ignore sludge from point-sources)		

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

Comments 4 4 7.5

Check ONE (Or 2 & average)

ORIGIN: ☐ LIMESTONE [1] ☒ TILLS [1] ☐ WETLANDS [0] ☐ HARDPAN [0] ☐ SANDSTONE [0] ☐ RIPRAP [0] ☐ LACUSTURINE [0] ☐ SHALE [-1] ☐ COAL FINES [-2]

QUALITY: ☐ HEAVY [-2] ☒ MODERATE [-1] ☐ NORMAL [0] ☐ FREE [1] ☐ EXTENSIVE [-2] ☒ MODERATE [-1] ☐ NORMAL [0] ☐ NONE [1]

SILT / EMBEDDEDNESS

Substrate: 7 / Maximum 20

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.

1 UNDERCUT BANKS [1]	0 POOLS > 70cm [2]	1 COBBOWS, BACKWATERS [1]	
1 OVERHANGING VEGETATION [1]	0 ROOTWADS [1]	2 AQUATIC MACROPHYTES [1]	
1 SHALLOWS (IN SLOW WATER) [1]	0 BOULDERS [1]	1 LOGS OR WOODY DEBRIS [1]	
2 ROOTMATS [1]			

AMOUNT — Check ONE (Or 2 & average)
☐ EXTENSIVE >75% [11]
☐ MODERATE 25-75% [7]
☒ SPARSE 5-<25% [3]
☐ NEARLY ABSENT <5% [1]

Comments

Cover Maximum 20: 8

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

SINUOSITY: ☐ HIGH [4] ☐ MODERATE [3] ☒ LOW [2] ☐ NONE [1]

DEVELOPMENT: ☐ EXCELLENT [7] ☒ GOOD [5] ☒ FAIR [3] ☐ POOR [1]

CHANNELIZATION: ☐ NONE [6] ☒ RECOVERED [4] ☒ RECOVERING [3] ☐ RECENT OR NO RECOVERY [1]

STABILITY: ☐ HIGH [3] ☒ MODERATE [2] ☐ LOW [1]

Comments 2 4 3.5 2

Channel Maximum 20: 11.5

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

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

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

Comments 3 2 0

Riparian Maximum 10: 5

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH — Check ONE (ONLY)
☐ > 1m [6]
☐ 0.7-<1m [4]
☒ 0.4-<0.7m [2]
☐ 0.2-<0.4m [1]
☐ < 0.2m [0]

CHANNEL WIDTH — Check ONE (Or 2 & average)
☒ POOL WIDTH > RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [1]
☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY — Check ALL that apply
☐ TORRENTIAL [-1] ☒ SLOW [1]
☐ VERY FAST [1] ☐ INTERSTITIAL [-1]
☐ FAST [1] ☐ INTERMITTENT [-2]
☒ MODERATE [1] ☐ EDDIES [1]
Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact

Comments 2 2 2

Pool / Current Maximum 12: 6

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: ☐ NO RIFFLE [metric=0]

Check ONE (Or 2 & average).

RIFFLE DEPTH: ☐ BEST AREAS > 10cm [2] ☒ BEST AREAS 5-10cm [1] ☐ BEST AREAS < 5cm [metric=0]

RUN DEPTH: ☐ MAXIMUM > 50cm [2] ☒ MAXIMUM < 50cm [1]

RIFFLE / RUN SUBSTRATE: ☐ STABLE (e.g., Cobble, Boulder) [2] ☒ MOD. STABLE (e.g., Large Gravel) [1] ☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

RIFFLE / RUN EMBEDDEDNESS: ☐ NONE [2] ☐ LOW [1] ☒ MODERATE [0] ☐ EXTENSIVE [-1]

Comments 1 1 0

Riffle / Run Maximum 8: 3

6] GRADIENT (8.82 ft/mi)
DRAINAGE AREA (4.4 mi²)

☐ VERY LOW - LOW [2-4] ☒ MODERATE [5-10] ☐ HIGH - VERY HIGH [16-6]

%POOL: 40 %GLIDE: 10 %RUN: 20 %RIFFLE: 30

Gradient Maximum 10: 6

EPA 4520 09/16/06

stream length b/w contour lines = 1.02 mi } 9'/1.02 mi = 8.82 ft/mi
elev. drop = 1089 - 1080 = 9 ft

A] SAMPLED REACH

Check ALL that apply

Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

METHOD
- ☐ BOAT
- ☒ WADE
- ☐ L. LINE
- ☐ OTHER

STAGE (1st sample pass / 2nd)
- ☐ HIGH ☐
- ☐ UP ☐
- ☒ NORMAL ☐
- ☐ LOW ☐
- ☐ DRY ☐

DISTANCE
- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☐ 0.12 Km
- ☐ OTHER

200 meters

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

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

1st _____ cm
2nd _____ cm

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

C] RECREATION

POOL: AREA ☐ >100ft² DEPTH ☐ >3ft

D] MAINTENANCE

Circle some & COMMENT

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
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

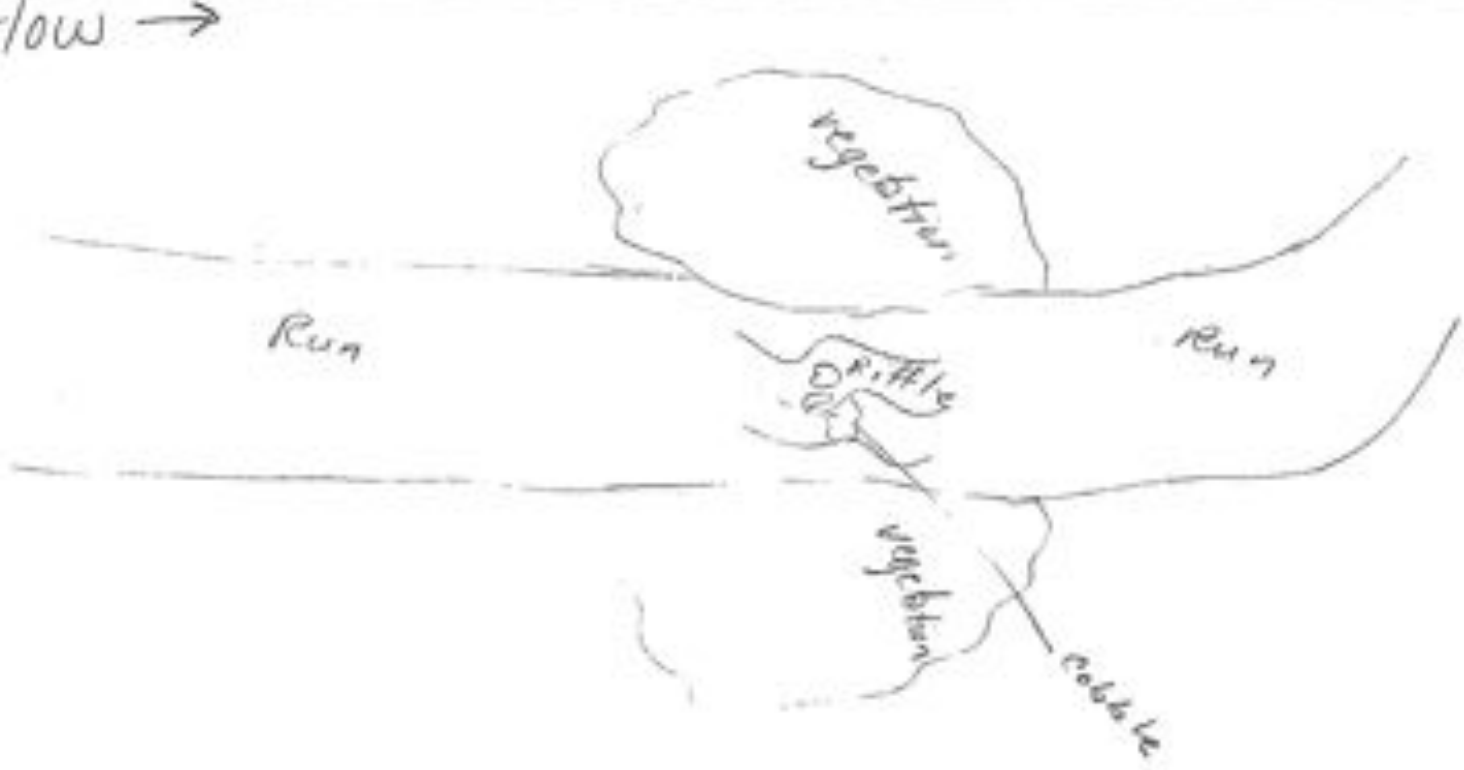
E] ISSUES

WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_2O / TILE / H_2O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

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

Stream Drawing: Flow →



Turbine 18 Streams Modified Class I

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI 3

HHEI Score (sum of metrics 1, 2, 3) : 27

SITE NAME/LOCATION _____

SITE NUMBER _____ RIVER BASIN _____ DRAINAGE AREA (mi²) <1 mi²

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

DATE 8/12/09 SCORER KC COMMENTS Agricultural Ditch

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

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

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☒☒	SILT [3 pt]	100
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [3 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [6 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 0 (A) 6 (B) 1

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

HHEI Metric Points — Substrate Max = 40: 7 (A + B)

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

☐ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [25 pts]
☒ > 5 cm - 10 cm [15 pts]
☐ < 5 cm [5 pts]
☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): 6

Pool Depth Max = 30: 15

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

☐ > 4.0 meters (> 13') [20 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
☒ ≤ 1.0 m (≤ 3' 3") [3 pts]

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): 0.75

Bankfull Width Max=30: 5

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

October 24, 2002 Revision

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: Treacle Creek Distance from Evaluated Stream 2 mi

☐ 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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Champaign Township / City: Rush Twp

MISCELLANEOUS

Base Flow Conditions? (Y/N): N Date of last precipitation: 8/10/09 Quantity: Unknown

Photograph Information: yes

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: recently dug out agricultural ditch

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

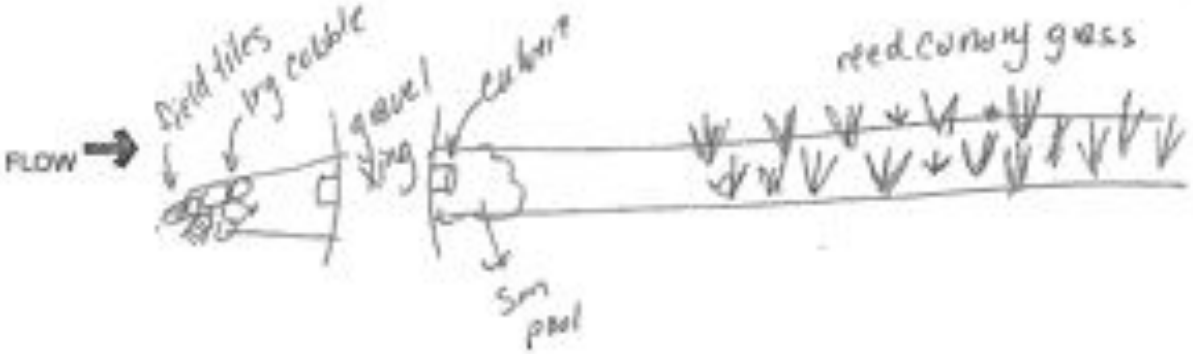
Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

none observed

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

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



Stream Y

OhioEPA — Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 41.5

Stream & Location: Brush Creek - Upst. SR 32 RM: Date: 08/21/09

Scorers Name & Affiliation: K. Gall - EPA

River Code: STORET #: Lat/Long: /8

1] SUBSTRATE

TYPE (check ONLY two substrate TYPE BOXES; estimate % or note every type present)	POOL RIFFLE	TYPE	POOL RIFFLE
☐ BLDR/ SLABS [10]		☐ GRAVEL [7]	
☐ BOULDER [9]		☐ SAND [6]	30
☐ COBBLE [8]	70	☐ BEDROCK [5]	
☐ HARDPAN [4]		☐ DETRITUS [3]	
☐ MUCK [2]		☐ ARTIFICIAL [0]	
☐ SILT [1]	30	(Recent natural substrates; ignore algae; from point-sources)	

NUMBER OF BETTER (>5) TYPES: ☐ 6 or more [2] ☐ 4 or 5 [1]

ORIGIN (Check ONE (Or 2 & average)): ☐ LIMESTONE [1] ☐ TILLS [1] ☐ WETLANDS [0] ☐ FLOODPLAIN [1] ☐ SANDSTONE [0] ☐ RIPRAP [0] ☐ CAST/STONE [1] ☐ SHALE [1] ☐ COAL FINES [-1]

QUALITY (Check ONE (Or 2 & average)): SILT — ☐ HEAVY [-2] ☐ MODERATE [-1] ☐ NORMAL [0]; COLOR — ☐ ORANGE [-1] ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☒ NORMAL [0] ☐ NONE [1]

Substrate Maximum 20: 14

Comments: - Stream was dry 13

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.

0 UNDERCUT BANKS [1]	0 POOLS/POOLS [2]	0 OVERHANGING VEGETATION [1]	0 SNAGS, BRUSH/BRANCHES [1]
0 OVERHANGING VEGETATION [1]	0 ROOTWADS [1]	0 AQUATIC MACROPHYTES [1]	1 AQUATIC MACROPHYTES [1]
1 SHALLOWS (in SLOW WATER) [1]	2 BOULDERS [1]	2 LOGS OR WOODY DEBRIS [1]	2 LOGS OR WOODY DEBRIS [1]
2 ROOTMATS [1]	2		

AMOUNT (Check ONE (Or 2 & average)): ☐ SCARCE 1-5% [1] ☐ MODERATE 5-25% [2] ☒ SPARSE 5-25% [3] ☐ NEARLY ABSENT <5% [1]

3

Cover Maximum 20: 5

Comments: - Stream was dry

3] CHANNEL MORPHOLOGY

Check ONE in each category (Or 2 & average)

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ MODERATE [1]	☐ EXCELLENT [7]	☐ NONE [6]	☐ MODERATE [2]
☐ LOW [0]	☒ GOOD [5]	☐ RECOVERED [4]	☐ LOW [0]
☐ NONE [1]	☐ FAIR [3]	☐ RECOVERING [2]	
	☐ POOR [1]	☐ PRESENT OR NO RECOVERY [1]	

Comments: 1 4 3.5 2 - Stream was dry

Channel Maximum 20: 13.5

4] RIPARIAN ZONE AND BANK EROSION

Check ONE in each category for EACH BANK (Or 2 per bank & average)

RIPARIAN WIDTH	FLOOD PLAIN QUALITY	EROSION
☐ WIDE [4]	☐ FOREST, SWAMP [3]	☐ NONE [3]
☐ MODERATE [3]	☐ SHRUB OR OLD FIELD [2]	☐ MODERATE [2]
☐ NARROW [2]	☐ RESIDENTIAL, PARK, NEW FIELD [1]	☐ HEAVY/SEVERE [1]
☐ VERY NARROW [1]	☐ FENCED PASTURE [1]	
☐ NONE [0]	☐ CONSERVATION TILLAGE [1]	
	☐ URBAN OR INDUSTRIAL [0]	
	☐ OPEN PASTURE, ROW CROP [0]	
	☐ MINING/ CONSTRUCTION [0]	

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

Comments: 1 0 2

Riparian Maximum 10: 3

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH (Check ONE (ONLY)): ☐ >1m [6] ☐ 0.7-1m [4] ☐ 0.4-0.7m [2] ☐ 0.2-0.4m [1] ☐ <0.2m [0]

CHANNEL WIDTH (Check ONE (Or 2 & average)): ☐ POOL WIDTH > RIFFLE WIDTH [2] ☒ POOL WIDTH = RIFFLE WIDTH [1] ☐ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY (Check ALL that apply): ☐ SWIFT [1] ☐ FAST [1] ☐ MODERATE [1] ☒ SLOW [1] ☐ TORRENTIAL [-1] ☐ INTERSTITIAL [-1] ☐ INTERMITTENT [-2] ☐ VERY FAST [-1]

Indicate for each - pools and riffles

Recreation Potential (pool size, Property ownership (Private/ Public), Pool Depth, Access/Ramps/Pits)

2 1 2

Comments: Stream was dry

Pool / Current Maximum 12: 5

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: ☐ NO RIFFLE (restricted)

RIFFLE DEPTH	RUN DEPTH	RIFFLE / RUN SUBSTRATE (Check ONE (Or 2 & average))	RIFFLE / RUN EMBEDDEDNESS
☐ BEST AREAS > 10cm [2]	☐ MAXIMUM > 50cm [2]	☐ STABLE (e.g., Cobble, Boulder) [2]	☐ NONE [2]
☐ BEST AREAS 5-10cm [1]	☐ MAXIMUM < 50cm [1]	☐ MODERATELY STABLE (e.g., Large Gravel) [1]	☐ FREE [1]
☐ BEST AREAS < 5cm [0]		☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☐ MODERATE [0]
☐ Recovering [Hardpan]			☐ EXTENSIVE [-1]

1 1 1

Comments: Stream was dry

Riffle / Run Maximum 8: 3

6] GRADIENT

DRAINAGE AREA ____ sq mi

☐ VERY LOW / LOW [0-4] ☐ MODERATE [5-9] ☐ HIGH / VERY HIGH [10-6]

%POOL: 30 %GLIDE: 20 %RUN: 20 %RIFFLE: 30

Gradient Maximum 10: 6

EPA 4520 08/29/06

Note stream was dry during field work.

A] SAMPLED REACH
Check ALL that apply

METHOD
- ☐ BOAT
- ☒ WADE
- ☐ CLIMB
- ☐ OTHER

CLARITY
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible] CTR
- ☐ SECCHI DEPTH

DISTANCE
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ OTHER

CANOPY
- ☒ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]

STAGE
- ☐ HIGH
- ☐ UP
- ☐ NORMAL
- ☐ LOW
- ☐ [illegible]

B] RECREATION
POOL
AREA GRIPSH
- ☐ >1000ft ☐ >3ft
- ☐ <1000ft ☐ <3ft

Comment RE: Recreation/Observed - Inferred, No.# adults - Kids, Frequency, Hazards, Potential, Other/Sampling observations, Concerns, Access directions, etc.

the stream was dry during field [illegible]

C] MERITS
- ☐ BOATS / CANOES
- ☐ SWIMMING / RAFTS
- ☐ ROPE / ROCK DAM
- ☐ FISHING / WADERS
- ☐ PATHS / CAMPS
- ☐ SCHOOLS
- ☐ PARTY / GRAFFITI
- ☐ COVERED BRIDGE
- ☐ FORD / STEP STONE
- ☐ WATER FALL
- ☐ VISTA / OUTCROP
- ☐

D] AESTHETICS
- ☐ NUISANCE ALGAE
- ☐ INVASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM / SCUM
- ☐ [illegible]
- ☐ TRASH / LITTER
- ☐ NUISANCE ODOR
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐

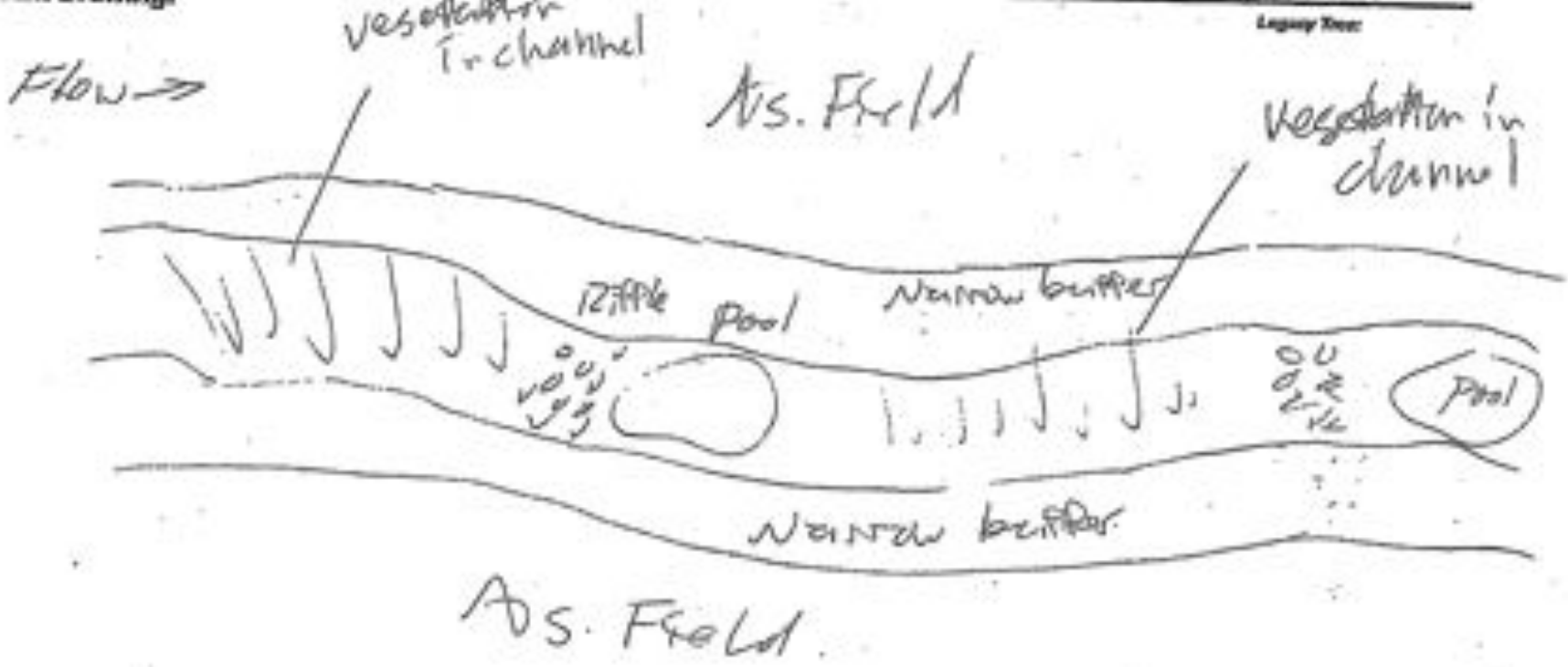
E] MAINTENANCE
PUBLIC / PRIVATE / BOTH / NA
ACTIVE / HISTORIC / BOTH / NA
YOUNG-SUCCESSION-OLD
SPRAY / SNAG / REMOVED
MODIFIED / DIPPED OUT / NA
LEVEED / ONE SIDED
RELOCATED / CUTOFFS
MOVING-BEDLOAD-STABLE
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DEDICATED
FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

F] ISSUES
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIKE&GRIME
CONTAMINATED / LANDFILL
EMPs-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 PRECITY

Stream Drawing:

Legacy Tree:



photos 100-107

designated as CWH

STREAM Y-2

OhioEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 25.5

Stream & Location: BUCK CREEK STREAM Y-2 RM: Date: 19 10 / 11

Scorers Full Name & Affiliation: B. FALKINBURG - HULL

River Code: STORET #: Lat/Long: 40.0937 2/83.64432 Office verified location

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

BEST TYPES | POOL | RIFFLE | OTHER TYPES | POOL | RIFFLE

(Score natural substrates; ignore sludge from point sources)

Check ONE (Or 2 & average)

ORIGIN | QUALITY

SILT

NUMBER OF BEST TYPES:

Comments: 2 + 2 + 1 - 2 - 2 x2 = 3

Substrate Maximum 20: 3

2] INSTREAM COVER Indicate presence 0 to 3: 0-Absent; 1-Very sparse 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)

Comments: None

Cover Maximum 20: 0

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

SINUOSITY | DEVELOPMENT | CHANNELIZATION | STABILITY

Comments: 3 + 3 + 4 + 2

Channel Maximum 20: 12

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

River right looking downstream

EROSION | RIPARIAN WIDTH | FLOOD PLAIN QUALITY

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

Comments: 2+3 + (2+1/2=1.5) + (3+0/2)=4.5

Riparian Maximum 10: 4.5

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH Check ONE (ONLY) | CHANNEL WIDTH Check ONE (Or 2 & average) | CURRENT VELOCITY Check ALL that apply

Indicate for reach - pools and riffles.

Recreation Potential: Primary Contact / Secondary Contact (circle one and comment on back)

Comments: 0

Pool / Current Maximum 12: 0

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

Comments:

Riffle / Run Maximum 8: 0

6] GRADIENT (10 ft/mi) DRAINAGE AREA (3.5 mi²) 6

%POOL: %GLIDE: %RUN: %RIFFLE:

Gradient Maximum 10: 6

EPA 4520 08/16/08

A] SAMPLED REACH
Check ALL that apply

METHOD
- [illegible]
- [illegible]
- [illegible]
- [illegible]

STAGE
1st sample rem. 2nd
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

DISTANCE
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- OTHER

CLARITY
1st sample rem. 2nd
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- SECCHI DEPTH

meters

CANOPY
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

1st ____ cm
2nd ____ cm

Comment RE: Reach consistency/ is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

B] AESTHETICS
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

C] RECREATION AREA DEPTH
POOL/ ☐ >100ft ☐ >3ft

D] 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
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

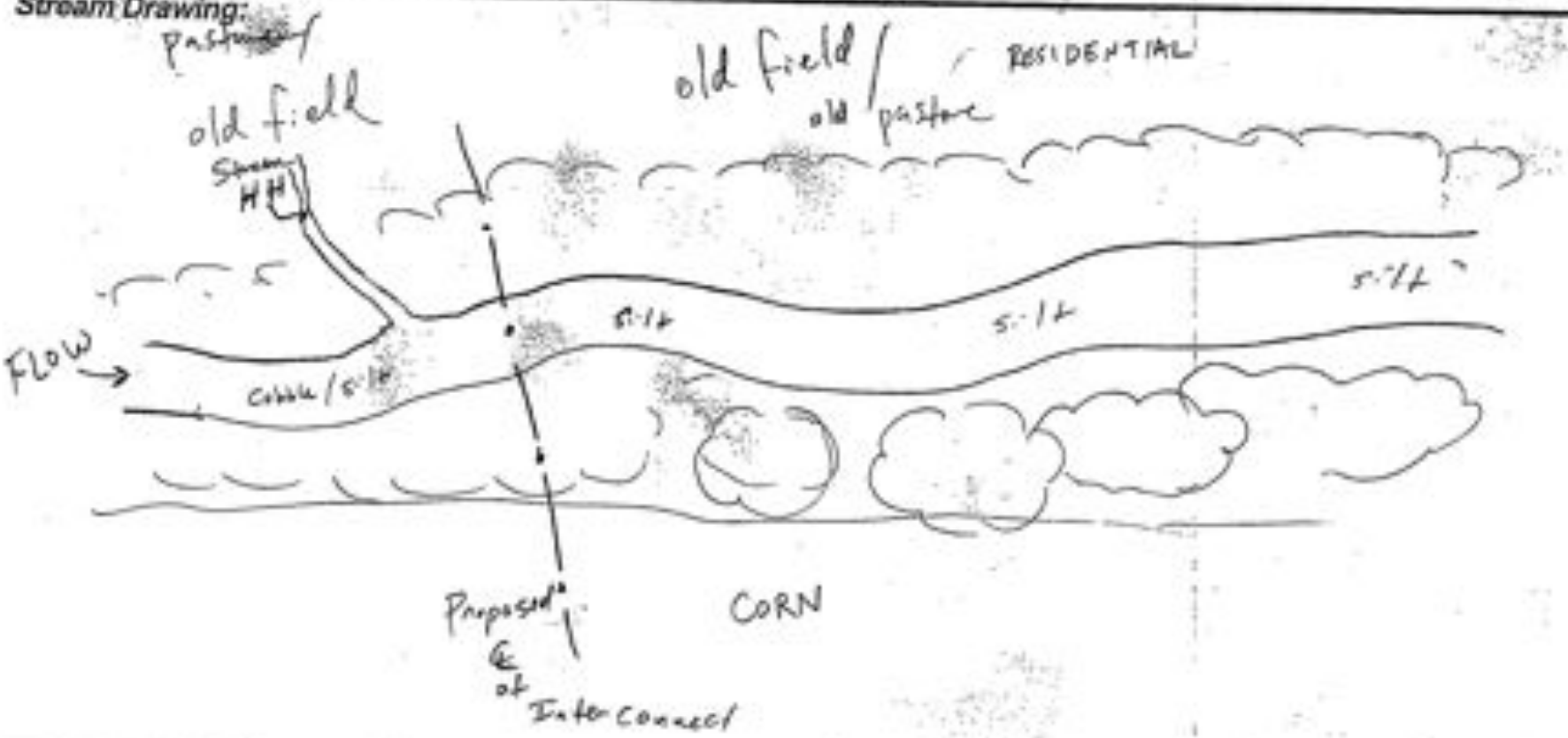
E] ISSUES
WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_2O / TILE / H_2O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS
- [illegible]

Legacy Tree:

STREAM Y-2 Buck CREEK

Stream Drawing:



photos 102-107

designated CWH

STREAM Y-3

OhioEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 22

Stream & Location: BUCK CREEK RM: Date: 10/10/11

Scorers Full Name & Affiliation: B. FALKINBURG

River Code: STORET #: Lat./Long.: /8 Office verified location ☐

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

BEST TYPES | POOL | RIFFLE | OTHER TYPES | POOL | RIFFLE

[redacted] 157 | [redacted] 85%

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

NUMBER OF BEST TYPES: [redacted]

Comments: 8+2 +0 +1 -2 -2 =7

Check ONE (Or 2 & average)

ORIGIN | SILT | EMBEDDEDNESS | QUALITY

[redacted]

Substrate 7 Maximum 20

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.

[redacted]

AMOUNT Check ONE (Or 2 & average)

[redacted]

Absent = 0

Comments

Cover 0 Maximum 20

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

SINUOSITY | DEVELOPMENT | CHANNELIZATION | STABILITY

[redacted]

Comments: 2 + 1 + (3+1/2 =) 2 + 2

Channel 7 Maximum 20 14

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

Water right looking downstream

EROSION | RIPARIAN WIDTH | FLOOD PLAIN QUALITY

[redacted]

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

Comments: 2 + 1 + 1

Riparian 4 Maximum 10 18

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH Check ONE (ONLY) | CHANNEL WIDTH Check ONE (Or 2 & average) | CURRENT VELOCITY Check ALL that apply

[redacted]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Comments: 0 DRY

Pool / Current 0 Maximum 12

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

[redacted]

Comments: 0 DRY

Riffle / Run 0 Maximum 8

6] GRADIENT 43

DRAINAGE AREA 1.87

[redacted] (4)

%POOL: DRY %GLIDE: DRY

%RUN: DRY %RIFFLE: DRY

Gradient 4 Maximum 10 22

EPA 4520 05/15/00

A] SAMPLED REACH
Check ALL that apply

METHOD

STAGE

DISTANCE

OTHER

meters

CLARITY

RECON DEPTH

CANOPY

B] AESTHETICS

C] RECREATION AREA DEPTH
POOL: ☐>1000ft² ☐>3ft

Comment/ RE: Reach consistency/ is reach typical of stream?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

D] MAINTENANCE Circle some & COMMENT

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
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

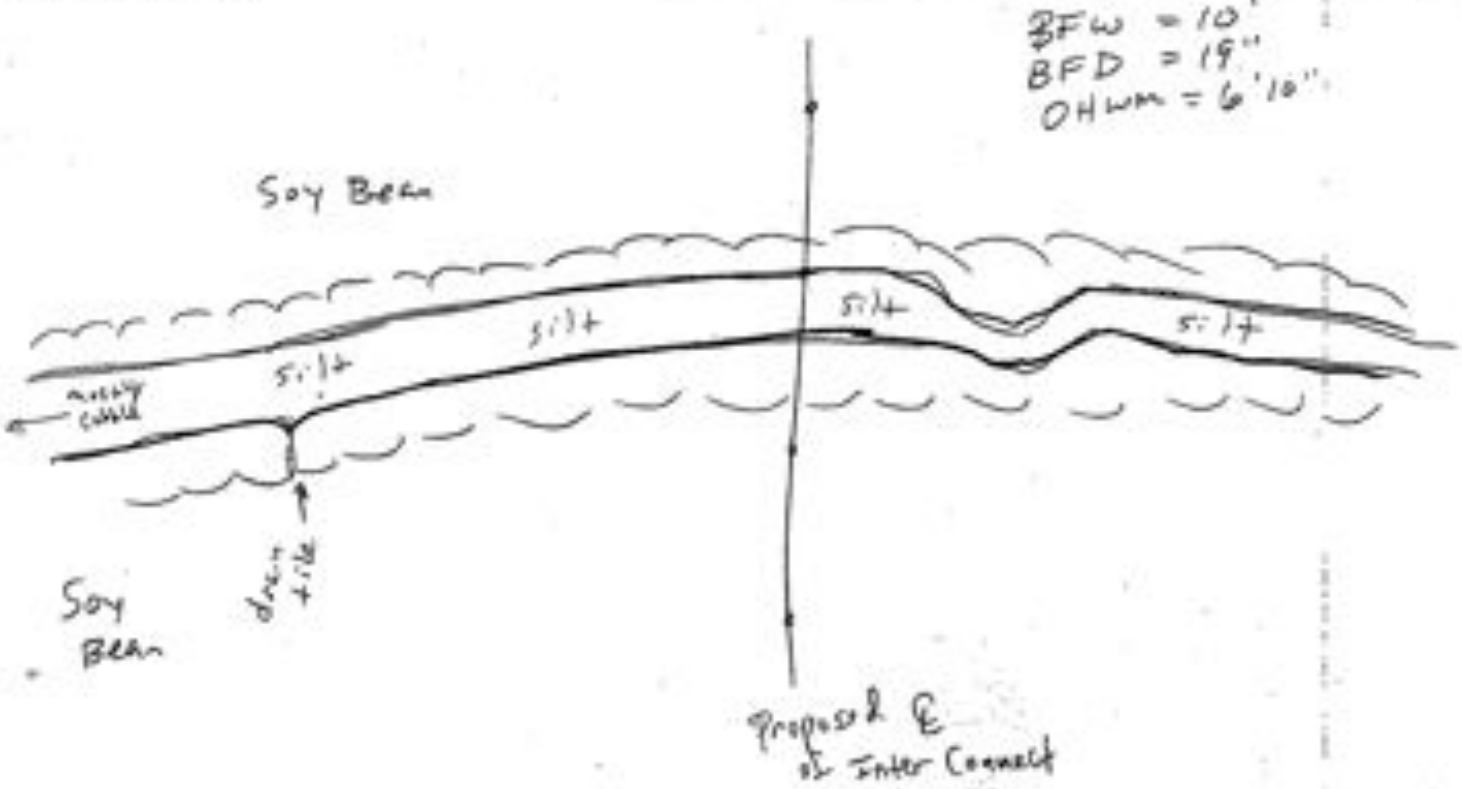
E] ISSUES

WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRAVE
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H_2S / TILE / H_2O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

Legacy Tree:

Stream Drawing:



STREAM Y-3
BUCK CREEK

CWH STREAM Y-4 BUCK CREEK

OhioEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 33

Stream & Location: BUCK CREEK - STR. Y-4 **RM:** **Date:** 12/19/11

EVER POWER **Scorers Full Name & Affiliation:** B. FALKINBURG / HULL

River Code: - - **STORET #:** **Lat./Long.:** (DDD.DD - decimal °) / 8 . Office verified location ☐

1] SUBSTRATE

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

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
[redacted]			[redacted]		
	5				
	25			20	
	5				

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

NUMBER OF BEST TYPES: [redacted]

Check ONE (Or 2 & average)

ORIGIN: [redacted]

SILT / EMBEDDEDNESS

QUALITY: [redacted]

Substrate: 13 (Maximum 20)

Comments: 7+4+2+1+(-1)+0 = 13

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.

[redacted] (1) [redacted] [redacted]

AMOUNT — Check ONE (Or 2 & average): [redacted]

Comments: 1+1

Cover: 2 (Maximum 20)

3] CHANNEL MORPHOLOGY

Check ONE in each category (Or 2 & average)

SINUOSITY: [redacted]

DEVELOPMENT: [redacted]

CHANNELIZATION: [redacted]

STABILITY: [redacted]

Comments: Channelized drainage ditch 2+1+1+1

Channel: 5 (Maximum 20)

4] BANK EROSION AND RIPARIAN ZONE

Check ONE in each category for EACH BANK (Or 2 per bank & average)

River right looking downstream

EROSION (L R): [redacted]

RIPARIAN WIDTH (L R): [redacted]

FLOOD PLAIN QUALITY (L R): [redacted]

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

Comments: 1+0+0

Riparian: 1 (Maximum 10)

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH — Check ONE (ONLY!): [redacted]

CHANNEL WIDTH — Check ONE (Or 2 & average): [redacted]

CURRENT VELOCITY — Check ALL that apply: [redacted]

Indicate for reach - pools and riffles.

Recreation Potential: Primary Contact / Secondary Contact (circle one and comment on back)

Comments: 2+2+1

Pool / Current: 5 (Maximum 12)

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: [redacted]

RUN DEPTH: [redacted]

RIFFLE / RUN SUBSTRATE: [redacted]

RIFFLE / RUN EMBEDDEDNESS: [redacted]

Comments: 1+2+0+0

Riffle / Run: 3 (Maximum 8)

6] GRADIENT

DRAINAGE AREA 140.1 ft/mi 11.85 mi²

[redacted]

%POOL: 5 %GLIDE: 85

%RUN: 5 %RIFFLE: 5

Gradient: 4 (Maximum 10)

above 40 ft/mi = 4 points

EPA 4520 06/16/08

A] SAMPLED REACH
Check ALL that apply

METHOD

STAGE
1st sample pass 2nd

DISTANCE

OTHER

meters

CLARITY
1st sample pass 2nd

SECCHI DEPTH

CANOPY
1st ____ cm
2nd ____ cm

B] AESTHETICS

C] RECREATION
POOL: AREA ☐>100ft² DEPTH ☐>3ft

Comment RE: Reach consistancy/Is reach typical of stream?, Recreation/Observed - Inferred, Other/Sampling observations, Concerns, Access directions, etc.

D] MAINTENANCE
Circle some & COMMENT

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

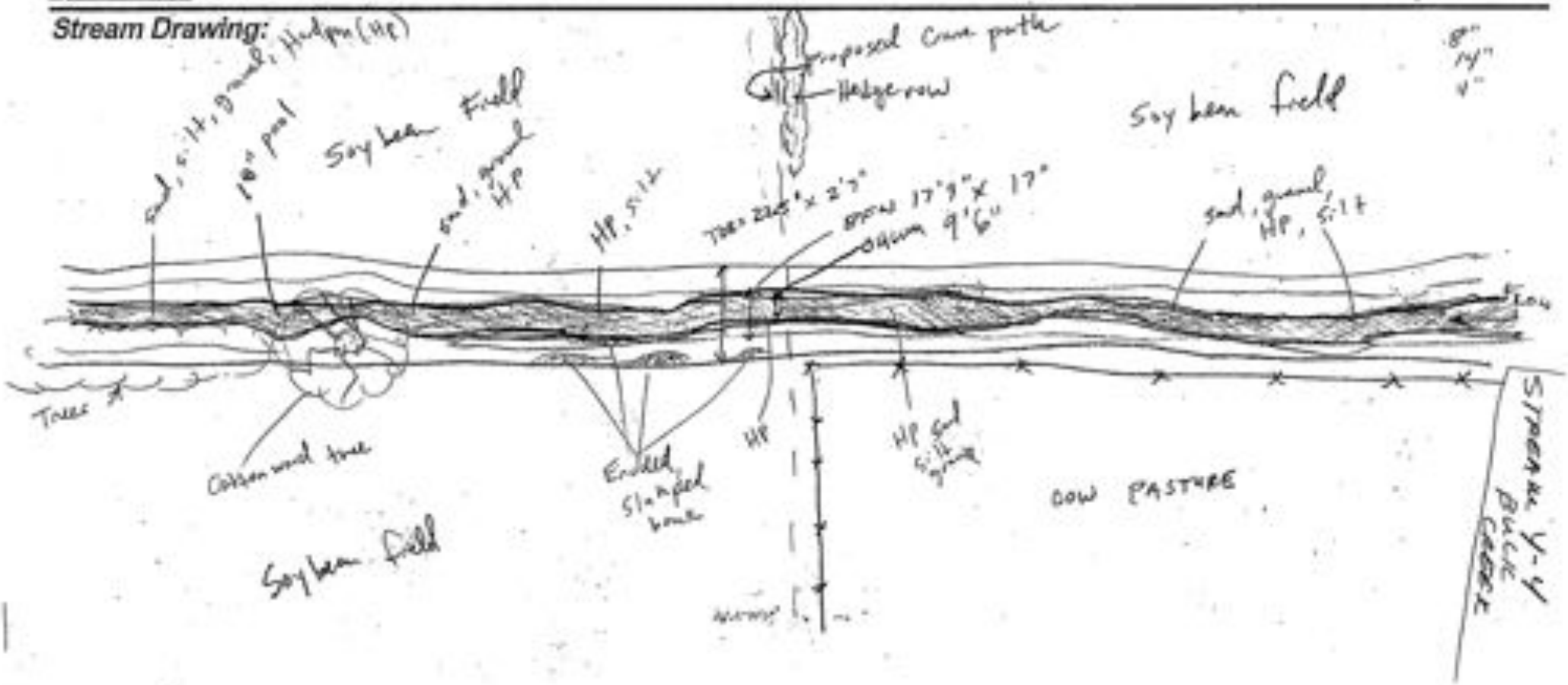
E] ISSUES

WWTP / CSO / NPDES / INDUSTRY
HARDENED / URBAN / DIRT&GRIME
CONTAMINATED / LANDFILL
BMPs-CONSTRUCTION-SEDIMENT
LOGGING / IRRIGATION / COOLING
BANK / EROSION / SURFACE
FALSE BANK / MANURE / LAGOON
WASH H$_2$0 / TILE / H$_2$0 TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS

Legacy Tree

Stream Drawing:



STREAM AA-2

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 13

SITE NAME/LOCATION: Cuer Power

SITE NUMBER: STR-AA-2 RIVER BASIN: _____ DRAINAGE AREA (mi²): < 0.1

LENGTH OF STREAM REACH (ft): _____ LAT. _____ LONG. _____ RIVER CODE _____ RIVER MILE _____

DATE: 10/17/11 SCORER: BMF COMMENTS: Start of Buck Creek

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

STREAM CHANNEL: ☐ [illegible] ☐ [illegible] ☒ [illegible] ☐ [illegible]

MODIFICATIONS: [illegible]

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [15 pts]		☒☒	SILT [3 pt]	95
☐☐	BOULDER (>256 mm) [15 pts]	5	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [15 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 5% (A) 6 (B) 2

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):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: DRY MAXIMUM POOL DEPTH (centimeters): 0

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

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☒ < 1.0 m (< 3' 3") [5 pts]

COMMENTS: _____ AVERAGE BANKFULL WIDTH (meters): 26"

HHEI Metric Points

Substrate Max = 40: 8

A + B

Pool Depth Max = 30: 0

Bankfull Width Max=20: 5

This information must also be completed

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

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

COMMENTS: _____

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

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

COMMENTS: _____

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

- ☐ None
- ☐ 0.5
- ☒ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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): STREAM AA-Z

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: Buck Creek headwaters 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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Champaign Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/14/11 Quantity: ?

Photograph Information: Y 1-7

Elevated Turbidity? (Y/N): N Canopy (% open): 40%

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)

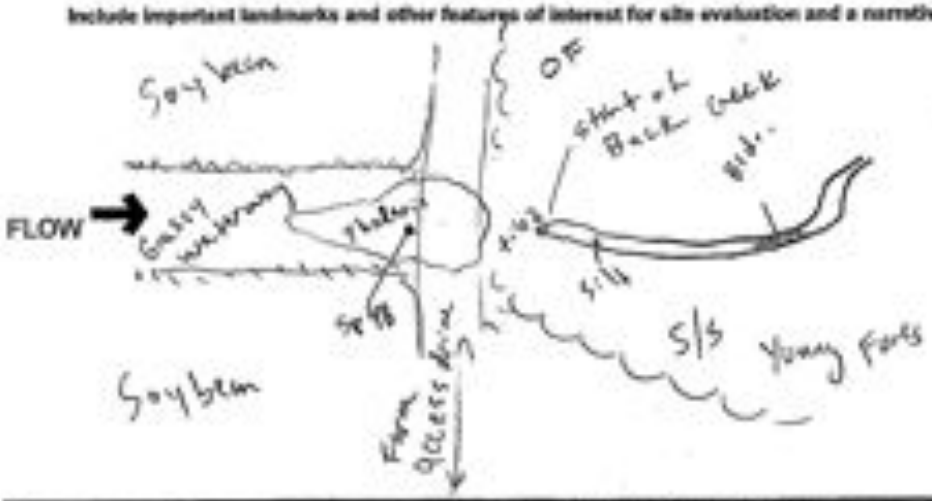
Fish Observed? (Y/N) N Voucher? (Y/N) — Salamanders Observed? (Y/N) N Voucher? (Y/N) —

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

Comments Regarding Biology: DRY

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



ALSO SEE QHEI for Stream BB

Primary Headwater Habitat Evaluation Form

STREAM BB

HHEI Score (sum of metrics 1, 2, 3) : 69

SITE NAME/LOCATION EVEPH2

SITE NUMBER BB RIVER BASIN _____ DRAINAGE AREA (mi²) 1.18

LENGTH OF STREAM REACH (ft) 200 LAT. 40.143 LONG. 83.6301 RIVER CODE _____ RIVER MILE _____

DATE 6/29/11 SCORER BMF COMMENTS Treacle Creek - EWH

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

STREAM CHANNEL ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ■ RECOVERING ☐ RECENT OR NO RECOVERY

MODIFICATIONS: Channelized Ag Ditch

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	13
☐☐	BOULDER (>256 mm) [14 pts]	2	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
■☐	COBBLE (65-256 mm) [12 pts]	30	☐☐	CLAY or HARDPAN [0 pt]	29
☐☐	GRAVEL (2-64 mm) [8 pts]	15	☐☐	MUCK [8 pts]	
☐■	SAND (<2 mm) [4 pts]	21	☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 32% (A) 18 (B) 6

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

HHEI Metric Points

Substrate Max = 40: 24

A + B

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

■ > 30 centimeters [20 pts]
☐ > 22.5 - 30 cm [30 pts]
☐ > 10 - 22.5 cm [20 pts]
☐ > 5 cm - 10 cm [10 pts]
☐ < 5 cm [5 pts]
☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): 33

Pool Depth Max = 30: 20

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

☐ > 4.0 meters (> 13') [20 pts]
■ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
☐ > 1.0 m - 3.0 m (> 9' 7" - 4' 9") [24 pts]
☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 9") [15 pts]
☐ < 1.0 m (< 3' 3") [0 pts]

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): 11'10"

Bankfull Width Max=30: 25

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

☐ Flat (pull snow ft) ■ Flat to Moderate ☐ Moderate (pull snow ft) ☐ Moderate to Severe ☐ Severe (no snow ft)

STREAM BB

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

QHEI PERFORMED? - ☑ Yes ☐ No QHEI Score 45 (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ EWH Name: _____ Distance from Evaluated Stream _____

☑ EWH Name: Treacle Creek Distance from Evaluated Stream headwaters

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

USGS Quadrangle Name: North Lewisburg NRCS Soil Map Page: 33 NRCS Soil Map Stream Order: 2

County: Champaign Township / City: Union Twp / Urbana

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: > 2 days Quantity: ?

Photograph Information: Yes

Elevated Turbidity? (Y/N): Y 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)

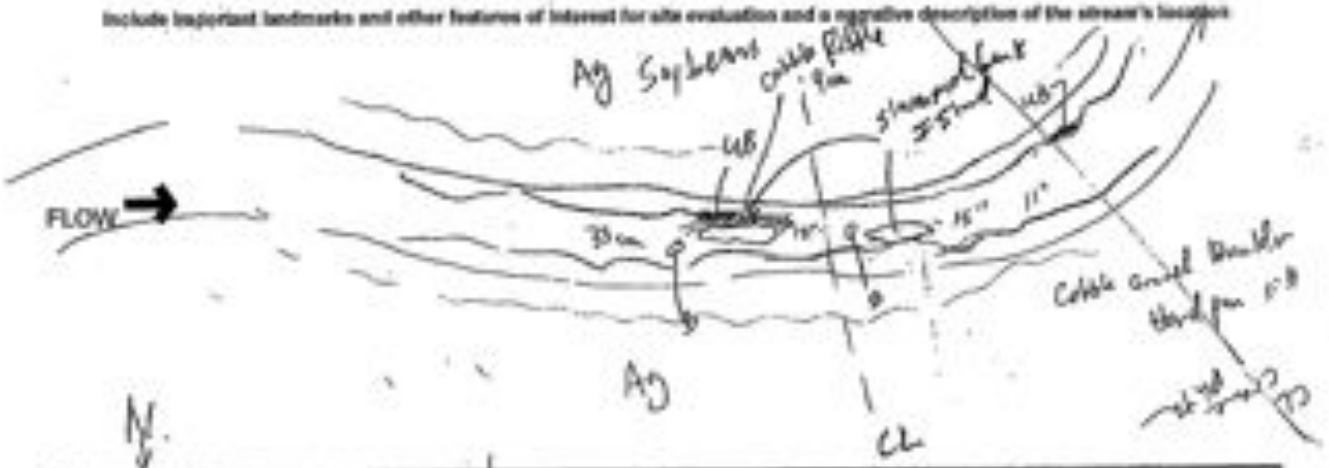
Fish Observed? (Y/N) ____ Voucher? (Y/N) ____ Salamanders Observed? (Y/N) ____ Voucher? (Y/N) ____

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

Comments Regarding Biology: Green Frog, Ebony jewelwing odonata.

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



STREAM BB – Check During Hex

OhioEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 44

Stream & Location: Evron RM: ___ Date: 6/29/11

Scorers Full Name & Affiliation: B. PAUL DAVIS - HULL

River Code: - - STORET #: Lat/Long: 40.143 -82.620L Office verified location ☐

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

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐☐ BEDROCK [9]			☐☐ HARDPAN [2]		
☐☐ BOULDER [8]	2%		☐☐ DETRITUS [2]		
☐☐ COBBLE [7]	39%		☐☐ MUCK [2]		
☐☐ GRAVEL [6]	15%		☐☐ SILT [2]		3%
☐☐ SAND [6]	34%		☐☐ ARTIFICIAL [0]		
☐☐ BEDROCK [9]			(Score natural substrates; ignore sludge from point-sources)		

NUMBER OF BEST TYPES: ☐ 4 (or more) ☐ 3 (or less)

Check ONE (Or 2 & average)

ORIGIN	QUALITY
☐ BEDROCK [1]	☐ HEAVY [1]
☐ TILL [0]	☐ MODERATE [1]
☐ MAN-MADE [0]	☐ NORMAL [0]
☐ RUBBLE [1]	☐ FREE [0]
☐ FLOODPLAIN [0]	☐ EXTENSIVE [-2]
☐ RIPARIAN [0]	☐ MODERATE [-1]
☐ ALLUVIAL [0]	☐ NORMAL [0]
☐ COAL FINES [-2]	☐ NONE [1]

SILT

Substrate 15 / Maximum 20

Comments 2 +2+6+1 -1 -1 =15

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.

___ UNDERCUT BANKS [1]	___ BOULDERS [2]	___ OVERHANGING VEGETATION [1]	AMOUNT (Check ONE (Or 2 & average))
___ OVERHANGING VEGETATION [1]	___ COBBLE [1]	___ AQUATIC MACROPHYTES [1]	☐ EXTENSIVE >75% [11]
___ SHALLOWS (IN SLOW WATER) [1]	1 ROOTWADS [1]	___ LOGS OR WOODY DEBRIS [0.5]	☐ MODERATE 25-75% [7]
___ ROOTWADS [1]			☑ SPARSE 5-25% [3]
			☐ NEARLY ABSENT <5% [1]

Cover Maximum 20 / 5

Comments 1+1+3 =5

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ [HIGH] [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]
☐ MODERATE [3]	☐ GOOD [5]	☐ RECOVERED [4]	☑ MODERATE [2]
☑ LOW [2]	☐ FAIR [3]	☑ RECOVERING [3]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Channel Maximum 20 / 10

Comments 2+3+3+2

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

Near right looking downstream

EROSION	L	R	RIPARIAN WIDTH	L	R	FLOOD PLAIN QUALITY	L	R
☐ NONE OR LITTLE [3]	☐	☐	WIDE (>50m) [4]	☐	☐	FOREST, SWAMP [3]	☑	☑
☑ MODERATE [2]	☑	☑	MODERATE (10-50m) [3]	☐	☐	SHRUB OR OLD FIELD [2]	☐	☐
☐ HEAVY OR SEVERE [1]	☐	☐	NARROW (5-10m) [2]	☐	☐	RESIDENTIAL, PARK, NEW FIELD [1]	☐	☐
			VERY NARROW (<5m) [1]	☑	☑	FENCED PASTURE [1]	☐	☐
			NONE [0]	☐	☐	OPEN PASTURE, ROW CROP [0]	☐	☐

☐ CONSERVATION TILLAGE [1]	Indicate predominant land use(s) past 100m riparian.	Riparian Maximum 10 / 4
☐ URBAN OR INDUSTRIAL [0]		
☐ MINING/CONSTRUCTION [0]		

Comments 2+1+1=4

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH (Check ONE (ONLY))

☐ >1m [6]
☐ 0.7-1m [4]
☐ 0.4-0.7m [2]
☑ 0.2-0.4m [1]
☐ <0.2m [0]

CHANNEL WIDTH (Check ONE (Or 2 & average))

☐ POOL WIDTH > 2 X RIFFLE WIDTH [2]
☐ POOL WIDTH = RIFFLE WIDTH [1]
☑ POOL WIDTH < RIFFLE WIDTH [0]

CURRENT VELOCITY (Check ALL that apply)

☐ TORRENTIAL [-1] ☑ SLOW [1]
☐ MODERATE [0] ☐ INTERSTITIAL [-1]
☐ FAST [1] ☐ INTERMITTENT [-2]
☐ MODERATE [0] ☐ EDDIES [1]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Pool / Current Maximum 12 / 2

Comments 1+0+1=2

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

☐ NO RIFFLE [metric=0]

RIFFLE DEPTH (Check ONE (Or 2 & average))

☐ MAXIMUM > 0.5m [2]
☑ MAXIMUM 0.25-0.5m [1]
☐ MAXIMUM < 0.25m [0]

RUN DEPTH

☐ MAXIMUM > 1m [2]
☑ MAXIMUM 0.5-1m [1]
☐ MAXIMUM < 0.5m [0]

RIFFLE / RUN SUBSTRATE

☑ STABLE (e.g., Cobble, Boulder) [2]
☐ MODERATELY STABLE (e.g., Large Gravel) [1]
☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]

RIFFLE / RUN EMBEDDEDNESS

☑ NONE [2]
☐ LOW [1]
☐ MODERATE [0]
☐ EXTENSIVE [-1]

Riffle / Run Maximum 8 / 6

Comments 1+1+2+2=6

6] GRADIENT (___ ft/mi)

DRAINAGE AREA (1.11 mi²)

☑ LOW GRADIENT [2]
☐ MODERATE GRADIENT [1]
☐ HIGH GRADIENT [0]

%POOL: 60 %GLIDE: 35
%RUN: 0 %RIFFLE: 5

Gradient Maximum 10 / 2

08/10/06

EPA 4520

A] SAMPLED REACH
Check ALL that apply

METHOD
- [ ] BOATS
- [ ] WADE
- [ ] [illegible]
- [ ] OTHER

STAGE
1st sample pass 2nd
- [ ] HIGH
- [ ] [illegible]
- [ ] NORMAL
- [ ] LOW
- [ ] [illegible]

DISTANCE
- [ ] [illegible]
- [ ] [illegible]
- [ ] [illegible]
- [ ] [illegible]
- [ ] OTHER

meters

CLARITY
1st sample pass 2nd
- [ ] [illegible]
- [ ] [illegible]
- [ ] [illegible]
- [ ] [illegible]
- [ ] SECCHI DEPTH

CANOPY
- [ ] [illegible]
- [ ] [illegible]
- [ ] [illegible]
- [ ] [illegible]
- [ ] [illegible]

1st ____ cm
2nd ____ cm

Comment RE: Reach consistency/ is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

STREAM BB

0506 0001-20-01

TREACLE CREEK

B] AESTHETICS
- [ ] NUISANCE & LOAD
- [ ] INVASIVE MACROPHYTES
- [ ] EXCESS CURRENT
- [ ] DISCOLORATION
- [ ] FOAM/SCUM
- [ ] OIL SHEEN
- [ ] TRASH/LITTER
- [ ] NUISANCE COOKS
- [ ] SLUDGE DEPOSITS
- [ ] CSO/SSO/OUTFALLS

C] RECREATION AREA DEPTH
POOL: [ ] >100ft [ ] >5ft

D] 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
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

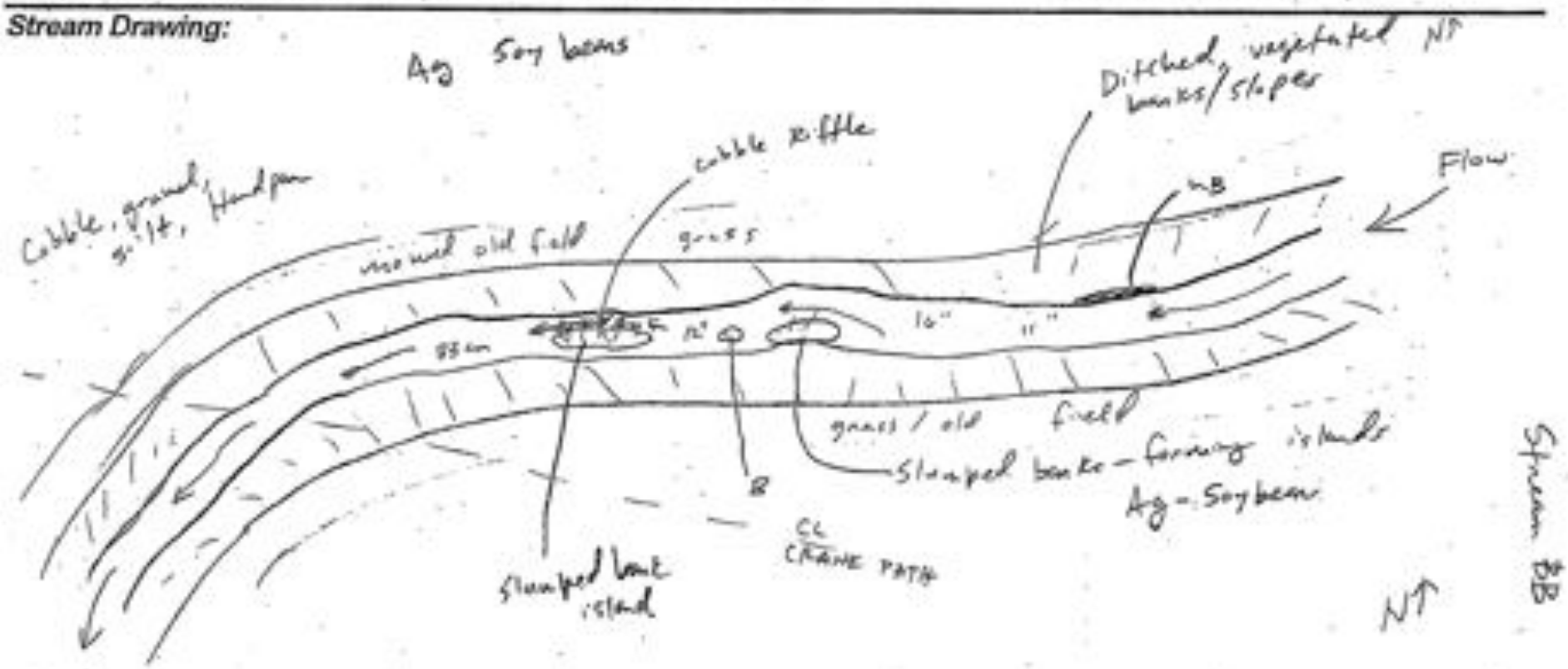
Circle some & COMMENT

E] 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 H_2O / TILE / H_2O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS
[illegible]

Legacy Tree:

Stream Drawing:



STREAM BB-2

OhioEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 73

Stream & Location: EVER POWER - TREACLE CR. RM: ___ Date: 6/18/08

Scorers Full Name & Affiliation: ___

River Code: ___ STORET #: ___ Lat/Long: 40.12064 / 83.57459 Office verified location ☐

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

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
☐ BOULDER [9]			☐ HARDPAN [2]		
☐ COBBLE [8]			☐ DETRITUS [1]	1	
☐ GRAVEL [7]	10	5	☐ MUCK [2]		
☐ SAND [6]	20	20	☐ SILT [2]	10	0
☐ BEDROCK [9]	15	30	☐ ARTIFICIAL [0]		

NUMBER OF BEST TYPES: ☐ 4 or more [2] ☐ 3 [1.5] ☐ 2 [1] ☐ 1 or none [0] (Score natural substrates; ignore sludge from point-sources)

Check ONE (Or 2 & average)

ORIGIN: ☐ LIMESTONE [1] ☐ TILL [1] ☐ WETLAND [0] ☐ HARDPAN [0] ☐ SANDSTONE [0] ☐ SHALE [0] ☐ ALLUVIUM [0] ☐ COAL FINES [-2]

SILT / NORMALITY

QUALITY: ☐ HEAVY [-2] ☐ MODERATE [-1] ☐ NORMAL [0] ☐ FREE [1] ☐ EXTENSIVE [-2] ☐ MODERATE [-1] ☐ NORMAL [0] ☐ NONE [1]

Substrate Maximum 20: 17

Comments: 7 + 2 + 1 + 0 = 10

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)

1 SNAGS/CUT BANK [1]	2 POOLS/ RUN [2]	2 OVERHANGING VEGETATION [1]	AMOUNT: ☐ EXTENSIVE >75% [11] ☐ MODERATE 25-75% [7] ☐ SPARSE 5-25% [3] ☐ NEARLY ABSENT <5% [1]
1 UNDERCUT BANKS [1]	1 ROOTWADS [1]	2 SHALLOWS (IN SLOW WATER)	
1 BOULDERS [1]	2 AQUATIC MACROPHYTES [1]		
1 ROOTMATS [1]	2 LOGS OR WOODY DEBRIS [1]		

Cover Maximum 20: 20

Comments: 9 + 11 = 20

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

SINUOSITY	DEVELOPMENT	CHANNELIZATION	STABILITY
☐ HIGH [4]	☐ EXCELLENT [7]	☐ NONE [6]	☐ HIGH [3]
☒ MODERATE [3]	☒ GOOD [5]	☐ RECOVERED [4]	☒ MODERATE [2]
☐ LOW [2]	☐ FAIR [3]	☒ RECOVERING [2]	☐ LOW [1]
☐ NONE [1]	☐ POOR [1]	☐ RECENT OR NO RECOVERY [1]	

Channel Maximum 20: 13

Comments: 3 + 5 + 3 + 2 = 13

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

EROSION	L	R	RIPARIAN WIDTH	L	R	FLOOD PLAIN QUALITY	L	R
☐ NONE/LITTLE [3]	☐	☐	☐ WIDE >50m [4]	☐	☐	☐ FOREST, SWAMP [3]	☐	☐
☒ MODERATE [2]	☒	☐	☐ MODERATE 10-50m [2]	☐	☐	☐ SHRUB OR OLD FIELD [2]	☐	☐
☐ HEAVY/SEVERE [1]	☐	☒	☒ NARROW 5-10m [1]	☒	☐	☐ RESIDENTIAL, PARK, NEW FIELD [1]	☐	☐
			☐ VERY NARROW <5m [1]	☐	☐	☐ FENCED PASTURE [1]	☐	☐
			☐ NONE [0]	☐	☐	☒ OPEN PASTURE, ROW CROP [0]	☐	☐
						☐ CONSERVATION TILLAGE [1]	☐	☐
						☐ URBAN OR INDUSTRIAL [0]	☐	☐
						☐ MINING/CONSTRUCTION [0]	☐	☐

Indicate predominant land use(s) past 100m riparian. Riparian Maximum 10: 3

Comments: 2 + 1 = 3

5) POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH (Check ONE (ONLY)): ☐ >1m [6] ☒ 0.7-<1m [4] ☐ 0.4-<0.7m [2] ☐ 0.2-<0.4m [1] ☐ 0.1-<0.2m [0]

CHANNEL WIDTH (Check ONE (Or 2 & average)): ☒ POOL WIDTH ≥ RIFFLE WIDTH [2] ☐ POOL WIDTH < RIFFLE WIDTH [1] ☐ POOL WIDTH << RIFFLE WIDTH [0]

CURRENT VELOCITY (Check ALL that apply): ☐ TORRENTIAL [-1] ☐ SWIFT [1] ☐ VERY FAST [1] ☐ FAST [1] ☒ MODERATE [1] ☐ SLOW [1] ☐ INTERSTITIAL [-1] ☐ INTERMITTENT [-2] ☐ EDDIES [1] (Indicate for reach - pools and riffles.)

Recreation Potential: Primary Contact / Secondary Contact (circle one and comment on back)

Pool / Current Maximum 12: 8

Comments: 4 + 2 + 1 + 1 = 8

Indicate for functional riffles; Best areas must be large enough to support a population of riffle-obligate species: ☐ NO RIFFLE [metric=0]

RIFFLE DEPTH (Check ONE)	RUN DEPTH (Check ONE)	RIFFLE / RUN SUBSTRATE (Check ONE (Or 2 & average))	RIFFLE / RUN EMBEDDEDNESS
☒ BEST AREAS >10cm [2]	☐ MODERATE >50cm [1]	☐ STABLE (e.g., Cobble, Boulder) [2]	☐ NONE [2]
☐ BEST AREAS 5-10cm [1]	☒ MAXIMUM ≤50cm [0]	☐ MOD. STABLE (e.g., Large Gravel) [1]	☒ LOW [1]
☐ BEST AREAS <5cm [0]		☐ UNSTABLE (e.g., Fine Gravel, Sand) [0]	☐ MODERATE [0]
			☐ EXTENSIVE [-2]

Riffle / Run Maximum 8: 4

Comments: (15cm Riffle) 2 + 1 + 1 + 1 = 5

6) GRADIENT
DRAINAGE AREA (17.14 sq mi)

Gradient (flow): ☐ VERY LOW - LOW [2-4] ☒ MODERATE [6-10] ☐ HIGH - VERY HIGH [12-16]

%POOL: 20 %GLIDE: 50 %RUN: 10 %RIFFLE: 20

Gradient Maximum 10: 8

EPA 4320 06/15/06

A] SAMPLED REACH
Check ALL that apply

METHOD
- ☐ BOAT
- ☐ WADE
- ☐ L-LINE
- ☐ OTHER

STAGE
1st sample pass 2nd
- ☐ HIGH ☐
- ☐ UP ☐
- ☐ NORMAL ☐
- ☐ LOW ☐
- ☐ DRY ☐

DISTANCE
- ☐ 0.5 Km
- ☐ 0.2 Km
- ☐ 0.15 Km
- ☐ 0.12 Km
- ☐ OTHER

meters

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

CANOPY
- ☐ >90% OPEN
- ☐ 55%-<85%
- ☐ 30%-<55%
- ☐ 10%-<30%
- ☐ <10% CLOSED

1st ____ cm
2nd ____ cm

Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

STREAM BB-2

B] AESTHETICS
- ☐ NUISANCE ALGAE
- ☐ INEASIVE MACROPHYTES
- ☐ EXCESS TURBIDITY
- ☐ DISCOLORATION
- ☐ FOAM/SCUM
- ☐ OIL SHEEN
- ☐ TRASH/LITTER
- ☐ NUISANCE ODOR
- ☐ SLUDGE DEPOSITS
- ☐ CSOs/SSOs/CUTFALLS

C] RECREATION
POOL: ☐ >100ft ☐ >3ft
AREA DEPTH

D] 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
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

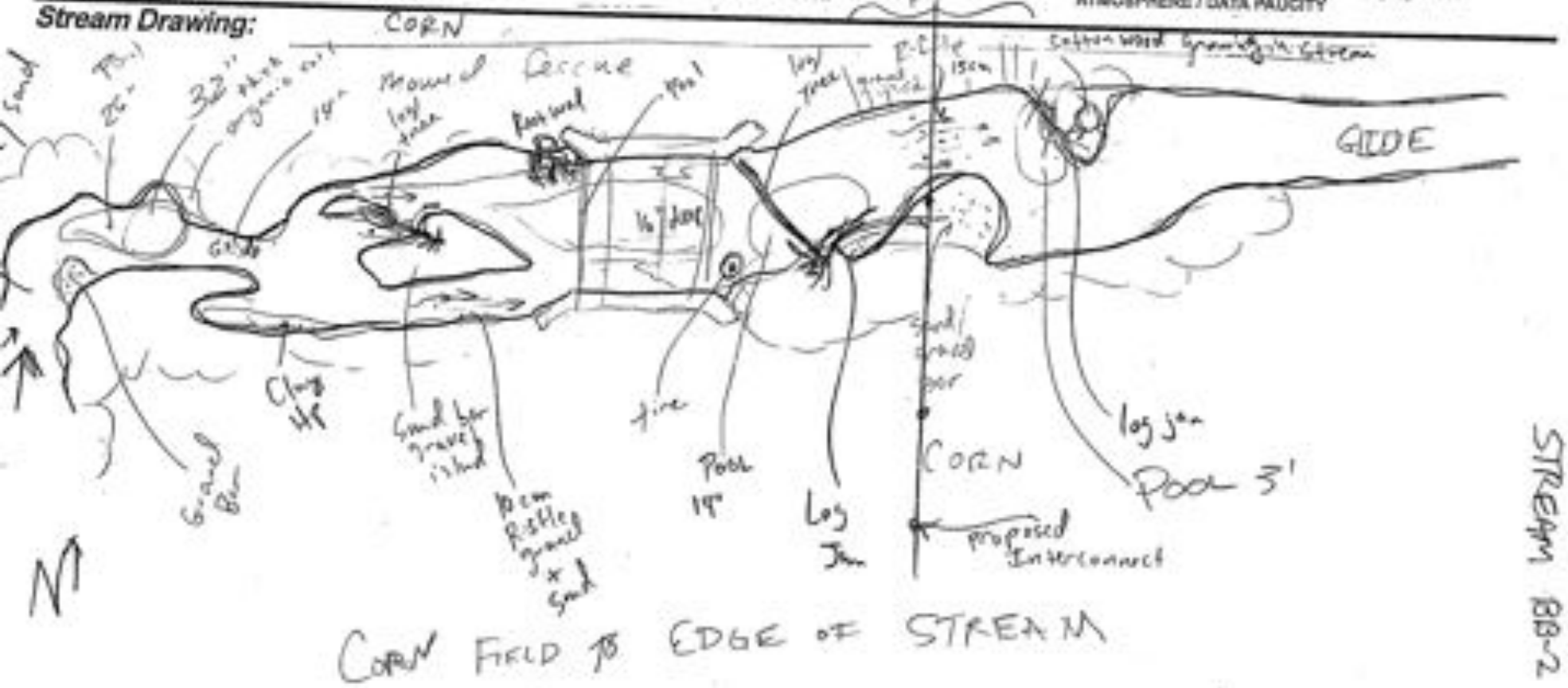
Circle some & COMMENT

E] 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 H_2O / TILE / H_2O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS
- X width
- X depth
- max depth
- Bankfull width
- bankfull depth
- W/D ratio
- bankfull max depth
- floodprone width
- entrance ratio

Legacy Tree:

Stream Drawing:



Mod class II BB-3

Ohio EPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 61

SITE NAME/LOCATION UNT to Trout Creek

SITE NUMBER BB-3 RIVER BASIN _____ DRAINAGE AREA (mi²) 0.15

LENGTH OF STREAM REACH (ft) _____ LAT. 40.14581 LONG. 83-6.1796 RIVER CODE _____ RIVER MILE _____

DATE 12-12-11 SCORER BMF/EMH COMMENTS _____

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

STREAM CHANNEL MODIFICATIONS: [illegible]

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BEDR SLABS [16 pts]		☐☐	SILT [3 pts]	15
☐☐	BOULDER (>256 mm) [16 pts]	1	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	5
☐☐	BEDROCK [16 pts]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]	15	☐☐	CLAY or HARDPAN [0 pt]	
☒☐	GRAVEL (2-64 mm) [8 pts]	40	☐☐	MUCK [0 pts]	
☐☒	SAND (<2 mm) [6 pts]	40	☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 16

(A) 15

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B) 6

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):

☐	> 30 centimeters [20 pts]	☐	> 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [5 pts]
☒	> 15 - 22.5 cm [25 pts]	☐	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS 9", 8", 9", 8" MAXIMUM POOL DEPTH (centimeters):

Pool Depth Max = 30: 25

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

☐	> 4.6 meters (> 15') [20 pts]	☒	> 1.0 m - 3.0 m (> 3'3" - 9'3") [15 pts]
☐	> 3.0 m - 4.6 m (> 9'3" - 15') [25 pts]	☐	≤ 1.0 m (≤ 3'3") [5 pts]
☐	> 1.5 m - 3.0 m (> 4'9" - 9'3") [20 pts]		

COMMENTS 3', 4', 4'6" AVERAGE BANKFULL WIDTH (meters): 4.9

Bankfull Width Max=20: 15

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

☐ Flat (0.1 ft/100 ft) ☒ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

BB-3

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ VWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: _____ Distance from Evaluated Stream _____

☒ EWH Name: TREACLE CREEK Distance from Evaluated Stream _____

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

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

County: Champaign Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: _____ Quantity: _____

Photograph Information: yes ↑ + ↓

Elevated Turbidity? (Y/N): N Canopy (% open): 20%

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 - upstream If not, please explain: N - downstream - turns into an v grassed waterway - No bed / bank, No channel

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)

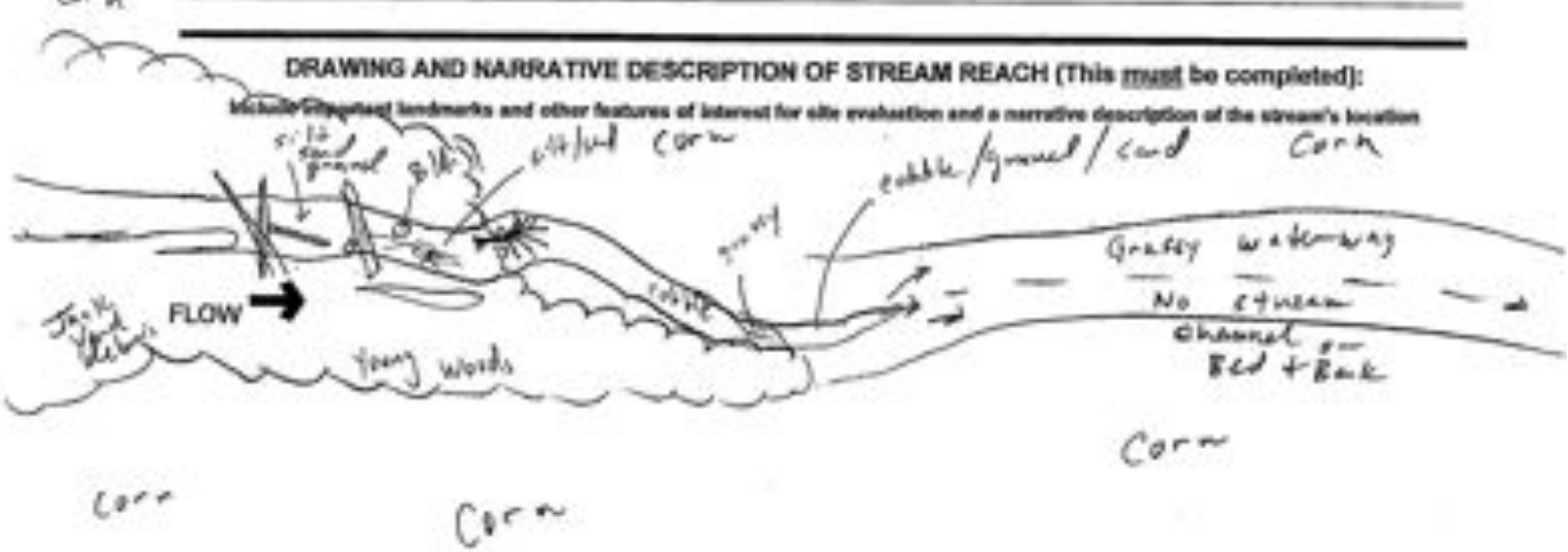
Fish Observed? (Y/N) N Voucher? (Y/N) ____ Salamanders Observed? (Y/N) N Voucher? (Y/N) ____

Frogs or Tadpoles Observed? (Y/N) ____ 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



STREAM CC

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 21

SITE NAME/LOCATION: [illegible] SITE NUMBER: CC RIVER BASIN: [illegible] Creek DRAINAGE AREA (mi²): 0.63

LENGTH OF STREAM REACH (ft): 200 LAT: 40.082.1 LONG: 82.6267 RIVER CODE: _____ RIVER MILE: _____

DATE: 6/30/11 SCORER: [illegible] COMMENTS: Dry, riparian stream channel

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

STREAM CHANNEL: [illegible]

ROCK CATEGORY: [illegible]

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR/SLABS (10+ inch)		☐	SILT (0-1/16 mm)	
☐	COBBLE (2½-10 inch)	3	☐	SAND (1/16-2 mm)	
☐	GRAVEL (0.1-2½ inch)		☐	FINE DETRITUS (0 pts)	
☒	COBBLE (2½-10 inch)	25	☒	CLAY or HARDPAN (0 pts)	49
☐	GRAVEL (0.1-2½ inch)	23	☐	MUCK (0 pts)	
☐	SAND (1/16-2 mm)		☐	ARTIFICIAL (0 pts)	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 27% (A) 12

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B) 4

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40: 16

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):

☐	40 cm (16 inch)	☐	0.1 - 0.2 m (4-8 inch)
☐	30 - 39 cm (12-15 inch)	☐	0.3 m (12 inch)
☐	20 - 29 cm (8-11 inch)	☒	NO POOLS OR MOST DOWNCUT (0 pts)

0

COMMENTS: _____ MAXIMUM POOL DEPTH (centimeters):

Pool Depth Max = 20: 0

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

☐	4 m (13 ft)	☐	3.1 m - 3.9 m (10-13 ft)
☐	3 m (10 ft)	☒	1.5 m - 3.0 m (5-10 ft)
☐	2 m (7 ft)		

2.5

COMMENTS: _____ AVERAGE BANKFULL WIDTH (meters):

Bankfull Width Max=20: 5

This information must also be completed

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

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

COMMENTS: [illegible]

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

☐	Stream Flowing
☐	Subsurface flow with isolated pools (interstitial)
☐	Moist Channel, isolated pools, no flow (intermittent)
☒	Dry channel, no water (Ephemeral)

COMMENTS: _____

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

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

STREAM GRADIENT ESTIMATE

☐ Flat (no evidence) ☒ Flat to Moderate ☐ Moderate (evident) ☐ Moderate to Severe ☐ Severe (no erosion)

October 24, 2002 Revision

STREAM CE

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):

☐ EWH Name: _____ Distance from Evaluated Stream _____
☑ CWH Name: Salt Creek Distance from Evaluated Stream 1,451 feet
☐ EWH Name: _____ Distance from Evaluated Stream _____

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

USGS Quadrangle Name: Urbana East NRCS Soil Map Page: 50 NRCS Soil Map Stream Order: 3

County: Champaign Township / City: Union Twp / Mutual

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: >2 days Quantity: ?

Photograph Information: _____

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 (umhos/cm) ___

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

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

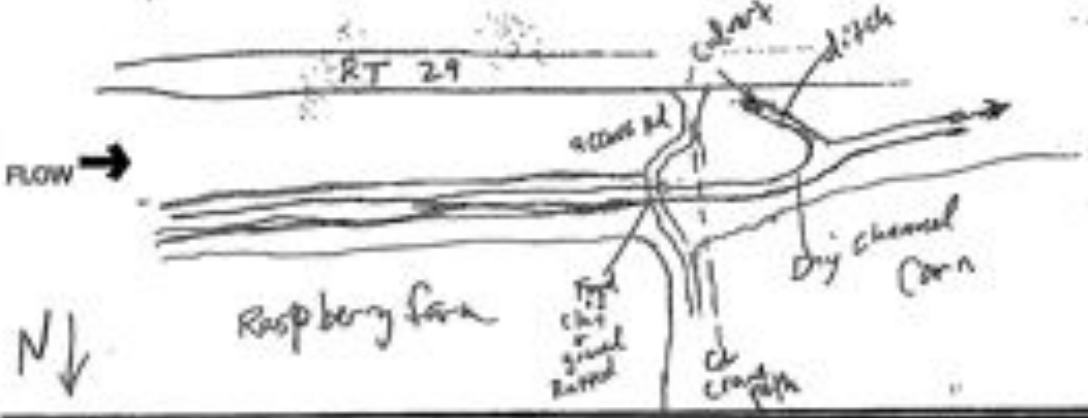
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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: None observed

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

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



Stream DD

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3): 22

SITE NAME/LOCATION: [illegible] STREAM DD

SITE NUMBER: Str DD RIVER BASIN: Little Darby DRAINAGE AREA (mi²): 0.068

LENGTH OF STREAM REACH (ft): 200 LAT: 40 0 885 LONG: 83 58 76 RIVER CODE: _____ RIVER MILE: _____

DATE: 6/30/11 SCORER: BMF COMMENTS: WT to Little Darby Creek

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

STREAM CHANNEL: [illegible]

MODIFICATIONS: [illegible]

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 20). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS (≥4 ft)		☐	SILT (fill)	
☐	BOULDER (1-4 ft)		☐	DAM MUCK/SILT/CLAY (fill)	
☐	BEDROCK (≥4 ft)		☐	FINE DETRITUS (fill)	
☑	COBBLE (3-12 in)	25	☑	CLAY or HARDPAN (≥4 ft)	50
☐	GRAVEL (0.1-3 in)	10	☐	MUCK (fill)	
☐	SAND (<0.1 in)	5	☐	ARTIFICIAL (fill)	

Total of Percentages of Boulder, Cobble, Bedrock: 25% (a) 12

(b) 5

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

HHEI Metric Points

Substrate Max = 40: 17 (A + B)

2. Maximum Pool Depth (Measure the *maximum pool depth* within the *91 meter* (300 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

☐	>0.7 m (>28 in)	☐	0.5 m (19 in)
☐	0.4 m (16 in)	☐	0.3 m (12 in)
☐	0.2 m (8 in)	☑	No Water or Moist Channel

0

COMMENTS: _____ MAXIMUM POOL DEPTH (centimeters)

Pool Depth Max = 20: 0

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

☐	4.6 meters (15 ft)	☐	3.1 m (10 ft) > 1.8 m (6 ft)
☐	1.5 m (5 ft)	☑	1.2 m (4 ft) or Less
☐	0.9 m (3 ft)		

1'

COMMENTS: _____ AVERAGE BANKFULL WIDTH (meters)

Bankfull Width Max=30: 5

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R	
☐	☐	Mature Forest, Wetland
☑	☑	Immature Forest, Shrub or Old Field + CRP
☐	☐	Residential, Park, New Field
☐	☐	Fenced Pasture

L	R	
☐	☐	Conservation Tillage
☐	☐	Urban or Industrial
☐	☐	Open Pasture, Row Crop
☐	☐	Mining or Construction

COMMENTS: _____

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

☐	Stream Flowing	☐	Moist Channel, Isolated pools, no flow (Intermittent)
☐	Subsurface flow with isolated pools (Intermittent)	☑	Dry channel, no water (Ephemeral)

COMMENTS: _____

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

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

STREAM GRADIENT ESTIMATE

☐ Flat ☐ Flat to Moderate ☑ Moderate ☐ Moderate to Severe ☐ Severe

Stream DD

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: Little Darby Creek Distance from Evaluated Stream 370'

☒ EWH Name: _____ Distance from Evaluated Stream _____

?

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

USGS Quadrangle Name: Mechanicsburg NRCS Soil Map Page: 51 NRCS Soil Map Stream Order: 1st

County: Champaign Township / City: Union / mechanicsburg

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: Dry > 3 days Quantity: ?

Photograph Information: yes

Elevated Turbidity? (Y/N) Dry Canopy (% open) 25

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: Dry

Additional comments/description of pollution impacts: Dry

BIOTIC EVALUATION Dry

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

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

Comments Regarding Ecology: None Observed - Dry Channel

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

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

STREAM EE

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3): 34

SITE NAME/LOCATION: EE RT 61 1/4 mile North of Shuck Corners

SITE NUMBER: EE RIVER BASIN: DRAINAGE AREA (sq mi): 0.31

LENGTH OF STREAM REACH (ft): 200 LAT: 40.6656 LONG: 82.6156 RIVER CODE: RIVER MILE:

DATE: 6/30/11 SCORER: B.A., M.E. COMMENTS: Dry Channel, pockets of standing water, silt dominated

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

STREAM CHANNEL: [illegible]

MODIFICATIONS: Channelized Ag Ditch

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 20). Add total number of significant substrate types found (Max of 6). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BOULDER (10-256 mm) [16 pts]		☐	SILT [2 pts]	75
☐	COBBLE (64-256 mm) [14 pts]		☐	HARDPAN [2 pts]	
☐	GRAVEL (2-64 mm) [10 pts]		☐	WOODY DEBRIS [2 pts]	
☐	FINE GRAVEL (2-16 mm) [7 pts]		☐	ORGANIC [2 pts]	
☐	SAND (0.06-2 mm) [3 pts]	25	☐	MUCK [2 pts]	
☐	BEDROCK [3 pts]		☐	ARTIFICIAL [2 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 0% (A) 12

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES

(B) 2

TOTAL NUMBER OF SUBSTRATE TYPES

HHEI Metric Points — Substrate Max = 40: 14 (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):

☐	> 40 cm (> 16") [10 pts]	☐	6 to 12" (15-30 cm) [5 pts]
☐	20 to 40 cm (8-16") [6 pts]	☐	3 to 6" (8-15 cm) [3 pts]
☐	12 to 20 cm (5-8") [3 pts]	☐	< 3" (< 8 cm) [1 pt]
		■	NO WATER OR ISOLATED POOLS [0 pts]

0

COMMENTS: Dry — MAXIMUM POOL DEPTH (centimeters)

Pool Depth Max = 30: 0

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

☐	> 4.0 meters (> 13') [20 pts]	☐	1.5 to 2.5 meters (5-8') [10 pts]
■	2.5 to 4.0 meters (8-13') [15 pts]	☐	1.0 to 1.5 meters (3-5') [5 pts]
		☐	< 1.0 meters (< 3') [1 pt]

6'

COMMENTS: — AVERAGE BANKFULL WIDTH (meters)

Bankfull Width (from 3) = 20

This information must also be completed

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

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

COMMENTS:

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

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

COMMENTS:

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

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

STREAM GRADIENT ESTIMATE

■	Flat (< 2 meters)	☐	Flat to Moderate	☐	Moderate (2-4 meters)	☐	Moderate to Severe	☐	Severe (> 4 meters)

Stream EE

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: E. Fork Back Creek Distance from Evaluated Stream 1160

☐ 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: Mechanicsburg NRCS Soil Map Page: 60 NRCS Soil Map Stream Order: 3rd

County: Champaign Township / City: Union / Mechanicsburg

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: Dry > 3 wk/days Quantity: ?

Photograph Information: Y

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): N 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)

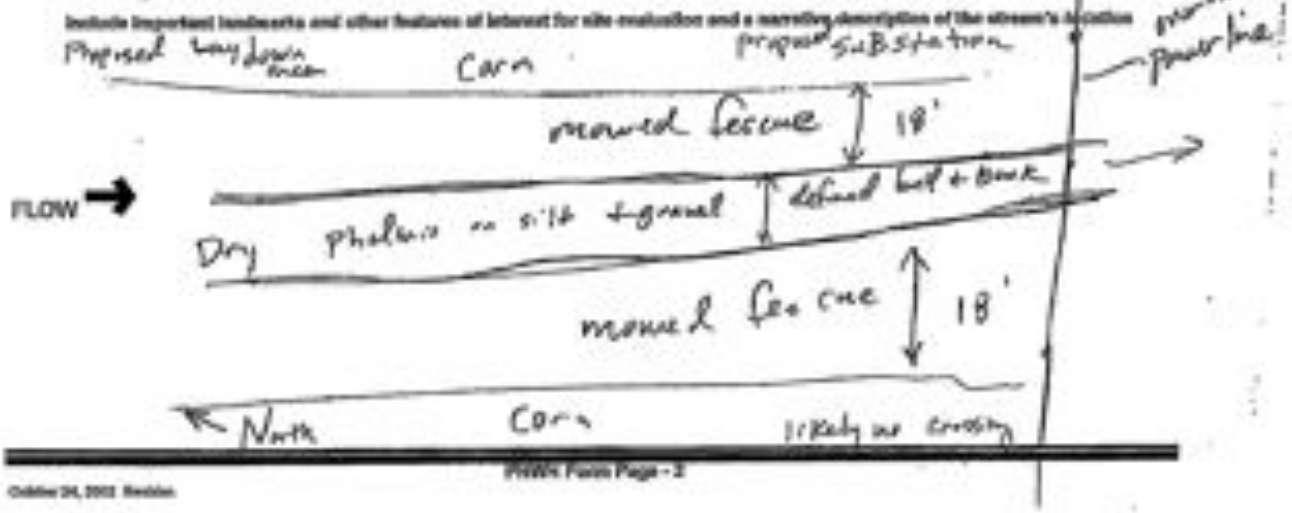
Fish Observed? (Y/N)____ Voucher? (Y/N)____ Salamanders Observed? (Y/N)____ Voucher? (Y/N)____

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

Comments Regarding Biology: _____

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



October 24, 2002 Revision

Ephemeral Mod class I

STREAM II

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 25

SITE NAME/LOCATION River Power

SITE NUMBER STR II RIVER BASIN _____ DRAINAGE AREA (mi²) 0.04

LENGTH OF STREAM REACH (ft) 200 LAT. 40.09861 LONG. 83.63875 RIVER CODE _____ RIVER MILE _____

DATE 10/10/11 SCORER BMF - HULL COMMENTS DRY

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

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

Channel ratio

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☒☒	SILT [3 pt]	90
☐☐	BOULDER (>250 mm) [16 pts]	✓ 1	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-250 mm) [12 pts]	✓ 2	☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [8 pts]	✓ 2	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 3% (A) 6 (B) 4

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

HHEI Metric Points

Substrate Max = 40: 10

A + B

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

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [20 pts]
- ☐ > 15 - 22.5 cm [25 pts]
- ☐ > 5 cm - 15 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

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

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☒ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS 3.5' AVERAGE BANKFULL WIDTH (meters) 1.1

Bankfull Width Max=30: 15

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 to 0.5) ☐ Flat to Moderate ☒ Moderate (0 to 0.5) ☐ Moderate to Severe ☐ Severe (>0 to 0.5)

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: Buck Creek - Dry 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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: CHAMPAIGN Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: _____ Quantity: _____

Photograph Information: Y

Elevated Turbidity? (Y/N): N Canopy (% open): 50

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: Dry

Additional comments/description of pollution impacts: Broken Glass / tractor tires

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)

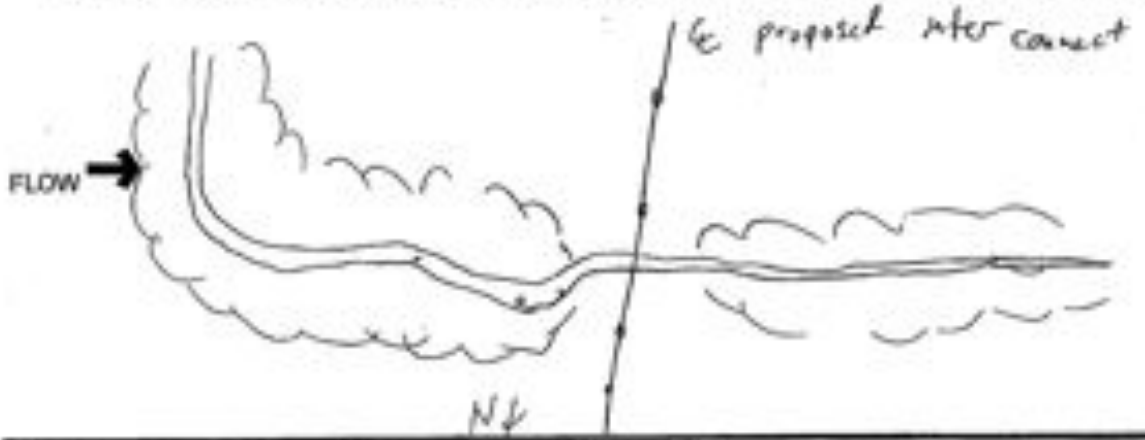
Fish Observed? (Y/N) N Voucher? (Y/N) ___ Salamanders Observed? (Y/N) N Voucher? (Y/N) ___

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

Comments Regarding Biology: Dry

. 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



Mod WWH

STREAM JJ

OhioEPA Qualitative Habitat Evaluation Index and Use Assessment Field Sheet

QHEI Score: 36.5

Stream & Location: UT BUCK CREEK RM: Date: 10/10/11

Scorers Full Name & Affiliation: B. FALKINBURG - HULL

River Code: - - STORET #: Lat/Long: 40.1103 / 83.63819 Office verified location ☐

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

BEST TYPES	POOL	RIFFLE	OTHER TYPES	POOL	RIFFLE
[illegible]			[illegible]		
[illegible]	✓ 7		[illegible]		
[illegible]	✓ 30		[illegible]		
[illegible]	✓ 20		[illegible]	✓ 25	
[illegible]	✓ 14		[illegible]		
[illegible]					

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

NUMBER OF BEST TYPES: [illegible]

Check ONE (Or 2 & average)

ORIGIN: [illegible]

SILT

QUALITY: [illegible]

Substrate Maximum 20: 16

Comments: 8+7+2+1+-1-1=16

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.

[illegible]

AMOUNT Check ONE (Or 2 & average): [illegible]

Comments: 1+1

Cover Maximum 20: 2 18

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

SINUOSITY: [illegible]

DEVELOPMENT: [illegible]

CHANNELIZATION: [illegible]

STABILITY: [illegible]

Comments: 3+3+3.5+2

Channel Maximum 20: 11.5 29.5

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

River right looking downstream

EROSION (L R): [illegible]

RIPARIAN WIDTH (L R): [illegible]

FLOOD PLAIN QUALITY (L R): [illegible]

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

Comments: 2+1+0

Riparian Maximum 10: 3 32.5

5] POOL / GLIDE AND RIFFLE / RUN QUALITY

MAXIMUM DEPTH Check ONE (ONLY): [illegible]

CHANNEL WIDTH Check ONE (Or 2 & average): [illegible]

CURRENT VELOCITY Check ALL that apply: [illegible]

Indicate for reach - pools and riffles.

Recreation Potential
Primary Contact
Secondary Contact
(circle one and comment on back)

Comments: DRY

Pool / Current Maximum 12: 0 32.5

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: [illegible]

RUN DEPTH: [illegible]

RIFFLE / RUN SUBSTRATE: [illegible]

RIFFLE / RUN EMBEDDEDNESS: [illegible]

Comments: DRY

Riffle / Run Maximum 8: 0 32.5

6] GRADIENT (46 feet) DRAINAGE AREA (1.08 mi²): [illegible] (4)

%POOL: %GLIDE: %RUN: %RIFFLE:

Gradient Maximum 10: 4 36.5

EPA 4520 06/16/08

A] SAMPLED REACH
Check ALL that apply

METHOD
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]

STAGE
1st -sample pass- 2nd
- ☐ [illegible] ☐
- ☐ [illegible] ☐
- ☐ [illegible] ☐
- ☐ [illegible] ☐
- ☐ [illegible] ☐

DISTANCE
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ OTHER

______ meters

CLARITY
1st -sample pass- 2nd
- ☐ [illegible] ☐
- ☐ [illegible] ☐
- ☐ [illegible] ☐
- ☐ [illegible] ☐
- ☐ SECCHI DEPTH ☐

CANOPY
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ■ [illegible]
- ☐ [illegible]

1st ______ cm
2nd ______ cm

C] RECREATION AREA DEPTH
POOL: ☐>100ft² ☐>3ft

Comment RE: Reach consistency/ Is reach typical of steam?, Recreation/ Observed - Inferred, Other/ Sampling observations, Concerns, Access directions, etc.

B] AESTHETICS
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]
- ☐ [illegible]

D] 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
ARMOURED / SLUMPS
ISLANDS / SCOURED
IMPOUNDED / DESICCATED
FLOOD CONTROL / DRAINAGE

Circle some & COMMENT

E] 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 H_2O / TILE / H_2O TABLE
ACID / MINE / QUARRY / FLOW
NATURAL / WETLAND / STAGNANT
PARK / GOLF / LAWN / HOME
ATMOSPHERE / DATA PAUCITY

F] MEASUREMENTS
[illegible]

Legacy Tree:

Stream Drawing:

Ephemeral

Mod class I

STREAM MM

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION: STREAM MM UT to PROCTOR RUN

SITE NUMBER: STR-MM RIVER BASIN: _____ DRAINAGE AREA (mi²): 0.13

LENGTH OF STREAM REACH (ft): 200 LAT. 40.13792 LONG. 83.5793 RIVER CODE: _____ RIVER MILE: _____

DATE: 10/12/11 SCORER: B. FELKNER COMMENTS: DRY

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

STREAM CHANNEL [illegible] MODIFICATIONS

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☒☒	SILT [3 pt]	98%
☐☐	BOULDER [1-250 mm] [16 pts]		☐☐	LEAF MUCK/WOODY DEBRIS [3 pts]	1%
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE [65-250 mm] [12 pts]	1%	☐☐	CLAY or HARDPAN [3 pt]	
☐☐	GRAVEL [2-64 mm] [8 pts]		☐☐	MUCK [3 pts]	
☐☐	SAND [12 mm] [8 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock _____ (A) 6 (B) 3

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

HHEI Metric Points

Substrate Max = 40: 9

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):

- ☐ >50 centimeters [20 pts]
- ☐ >22.5 - 50 cm [20 pts]
- ☐ >10 - 22.5 cm [25 pts]
- ☐ >5 cm - 10 cm [16 pts]
- ☐ >5 cm [8 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

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

- ☐ >4.0 meters (> 12') [20 pts]
- ☐ >3.0 m - 4.0 m (> 9'-3" - 12') [25 pts]
- ☒ >1.5 m - 3.0 m (> 9'-3" - 4'-6") [20 pts]
- ☐ >0.6 m - 1.5 m (> 2'-3" - 4'-6") [15 pts]
- ☐ >1.5 m (< 9'-3") [5 pts]

COMMENTS 6' AVERAGE BANKFULL WIDTH (meters): 6'

Bankfull Width Max=30: 20

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

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

STREAM GRADIENT ESTIMATE

☐ Flat (0.0 ft/100 ft) ☒ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

STREAM #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):

☐ HWH Name: PROCTOR RUN Distance from Evaluated Stream _____

☐ OWH 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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Champaign Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/14/11 Quantity: Trace

Photograph Information: Yes ↑ & V

Elevated Turbidity? (Y/N): N Canopy (% open): 0

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): 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)

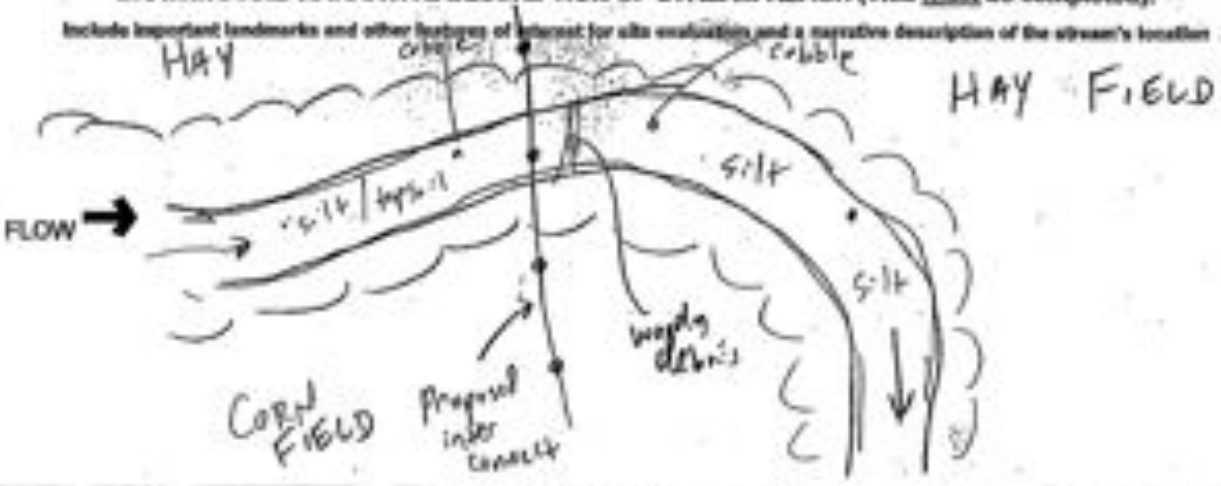
Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____

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

Comments Regarding Biology: None - Dry

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



Ephemeral Mod class II

OhioEPA Primary Headwater Habitat Evaluation Form STREAM NN

HHEI Score (sum of metrics 1, 2, 3) : 46

SITE NAME/LOCATION Deer Creek Trib to Little Darby Creek

SITE NUMBER STR-NN RIVER BASIN Little Darby DRAINAGE AREA (mi²) 0.5T

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

DATE 10/13/11 SCORER B. FALKINBURG COMMENTS DRY

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

STREAM SKETCH AND LOCATION

1. **SUBSTRATE** (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 2/2). Add total number of significant substrate types found (Max of 8). Final metric score is sum of blocks A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BDR SDRS [16 pts]	5	☐	SILT [3 pts]	
☐	BOULDER [10-256 mm] [14 pts]	5	☐	CLAY/HARDPAN [3 pts]	
☐	BEDROCK [16 pts]		☐	MUCK [3 pts]	
●	COBBLE [65-256 mm] [12 pts]	60	☐	ORGANIC/WOODY DEBRIS [3 pts]	
■	GRAVEL [2-64 mm] [9 pts]	30	☐	HARDPAN [0 pts]	
☐	SAND [1/16-2 mm] [6 pts]	10	☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bdr Slabs, Boulder, Cobble, Bedrock 70% (A) 21

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES

(B) 5

TOTAL NUMBER OF SUBSTRATE TYPES

HHEI Metric Points — Substrate Max = 40: 26 — 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):

- ☐ > 80 centimeters [20 pts]
- ☐ > 40 - 80 cm [15 pts]
- ☐ > 22.5 - 40 cm [10 pts]
- ☐ > 13 - 22.5 cm [5 pts]
- ☐ > 5 cm - 13 cm [1 pt]
- ☐ ≤ 5 cm [0 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts]

0

COMMENTS DRY MAXIMUM POOL DEPTH (centimeters):

Pool Depth Max = 30: 0

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

- ☐ > 12 meters [20 pts]
- ☐ > 7 - 12 m [15 pts]
- ☐ > 3 - 7 m [10 pts]
- ☐ ≤ 3 m [5 pts]
- ■ 2.5 - 4.0 m [20 pts]

8' 7' 9'

COMMENTS AVERAGE BANKFULL WIDTH (meters) 8' ft

Bankfull Width Max=30: 20

This information must also be completed

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

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

COMMENTS

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

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

COMMENTS DRY

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

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ■ 1.0
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

- ☐ Flat (0.5 m/km ft)
- ☐ Flat to Moderate
- ☐ Moderate (2 m/km ft)
- ■ Moderate to Severe
- ☐ Severe (10 m/km ft)

STREAM NN

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: LITTLE DARBY CREEK 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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: CHAMPAIGN Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/13/11 Today Quantity: _____

Photograph Information: yes ↓ ↓T

Elevated Turbidity? (Y/N): N Canopy (% open): 55

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)

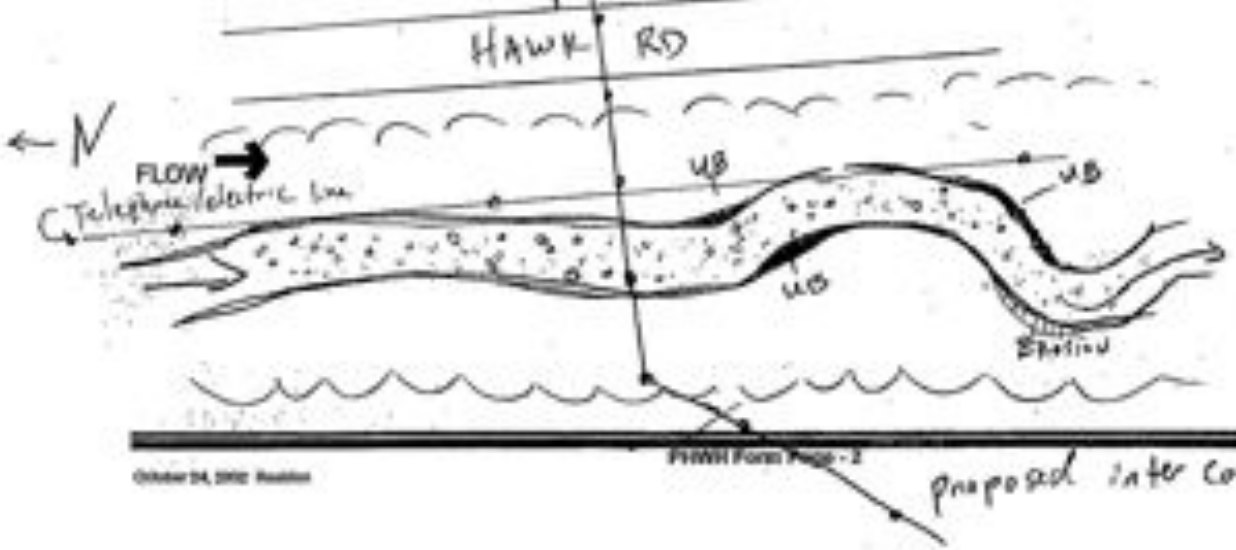
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) —

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

Comments Regarding Biology: terrestrial bugs

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



Ephemeral Mod class II

STREAM-00

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 36

SITE NAME/LOCATION: Avon power - RT 10 Black Rd.

SITE NUMBER: STR-00 RIVER BASIN: DRAINAGE AREA (mi²): 0.69

LENGTH OF STREAM REACH (ft): 200 LAT: 40.97722 LONG: 82.04613 RIVER CODE: RIVER MILE:

DATE: 10/13/11 SCORER: B. FACKING COMMENTS: DRY & channelized

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

STREAM CHANNEL:

MODIFICATIONS: channel, ICE

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BOAT SLABS [16 pts]		☐	SILT [0 pts]	60%
☐	BOULDER [12 pts]	17%	☐	CLAY HARDPAN [3 pts]	
☐	BEDROCK [10 pts]		☐	MUCK [3 pts]	
☐	COBBLE [8 pts]	19	☐	CLAY or HARDPAN [0 pts]	
☒	GRAVEL [6 pts]	20%	☐	MUCK [0 pts]	
☐	SAND [3 pts]		☐	ARTIFICIAL [0 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 20% (A): 12

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B): 4

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points — Substrate Max = 40: 16

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):

☐	> 50 cm [20 pts]	☐	> 5 cm - 15 cm [10 pts]
☐	> 30.5 - 50 cm [30 pts]	☐	< 5 cm [5 pts]
☐	> 15 - 30.5 cm [20 pts]	☒	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: Dry 0

MAXIMUM POOL DEPTH (centimeters):

Pool Depth Max = 30: 0

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

☐	> 4.6 meters (> 15') [20 pts]	☐	> 0.6 m - 1.5 m (2' - 5') [15 pts]
☐	> 3.0 m - 4.6 m (> 10' - 15') [25 pts]	☐	< 0.6 m (< 2') [5 pts]
☒	> 1.5 m - 3.0 m (> 5' - 10') [30 pts]		

feet

COMMENTS: 6' 9"

AVERAGE BANKFULL WIDTH (meters): 6.9

Bankfull Width Max=30: 20

This information must also be completed

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

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

COMMENTS:

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

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

COMMENTS: Dry

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

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

STREAM GRADIENT ESTIMATE

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

October 04, 2006 Revision

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed): Stream 00

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☒ CWH Name: Back Creek 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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Champaign Township / City: Mutual

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: today 10/13/11 Quantity: ?

Photograph Information: yes ↓ & ↑

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)

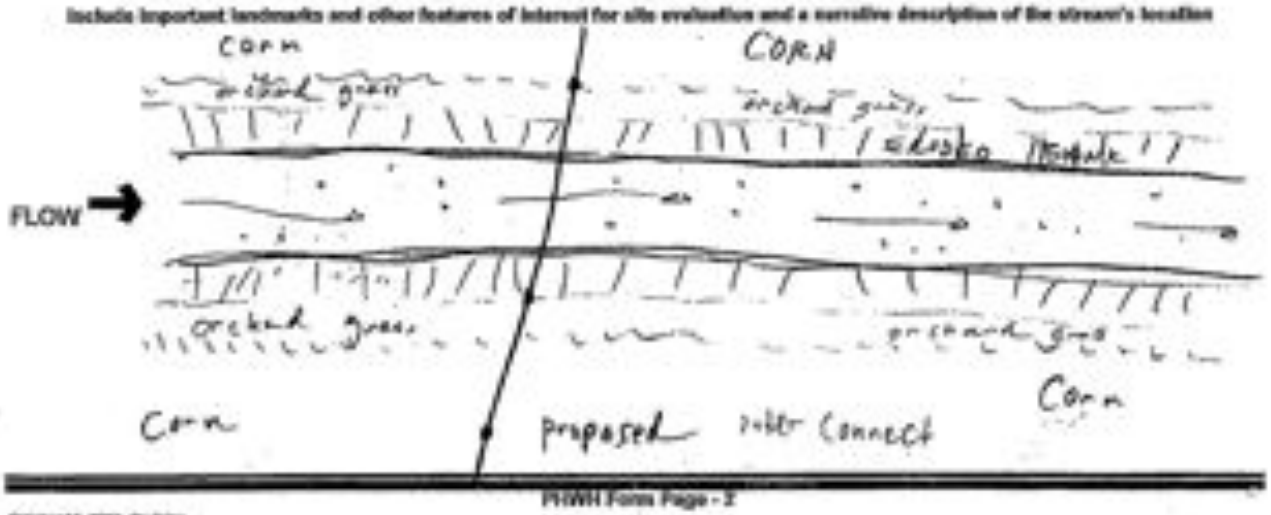
Fish Observed? (Y/N): N Voucher? (Y/N): — Salamanders Observed? (Y/N): N Voucher? (Y/N): —

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

Comments Regarding Biology: Earthworm under piece of wood upland plant specks (FACU + UPL) growing in stream channel - velvet leaf, barnyard grass, morning glory pigweed, mulberry saplings, green fox tail, yellow sweet clover

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



October 14, 2003 Revision

STREAM PP

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3): 15

SITE NAME/LOCATION EVEE Power - STREAM PP - phase 2 - confluence w/ Little Darby Creek

SITE NUMBER STR PP RIVER BASIN _____ DRAINAGE AREA (mi²) 20.1

LENGTH OF STREAM REACH (ft) 200 LAT. 39.9963° LONG. 83.6027° RIVER CODE _____ RIVER MILE _____

DATE 9/19/11 SCORER B. Fault-Hunter COMMENTS DRY - ult to Little Darby Creek

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

STREAM CHANNEL MODIFICATIONS: ☐ Channelized ☒ Recent ☒ Ditched ☐ Impounded ☐ None
Recent channel work for project

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BDR SLABS [16 pts]		☒	SILT [3 pts]	80
☐	BOULDER (>256 mm) [16 pts]	1	☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pts]		☐	FINE DETRITUS [3 pts]	
☐	COBBLE (65-256 mm) [12 pts]	10	☐	CLAY or HARDPAN [3 pts]	9
☐	GRAVEL (2-64 mm) [9 pts]		☐	MUCK [3 pts]	
☐	SAND (<2 mm) [6 pts]		☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 11 % (A) 6

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B) 4 TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40: 10

A + B

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

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ > 0 - 5 cm [5 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts] → 0

COMMENTS: 0 - dry MAXIMUM POOL DEPTH (centimeters):

Pool Depth Max = 30: 0

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

- ☐ > 4.0 meters [> 13'] [20 pts]
- ☐ > 3.0 m - 4.0 m [> 9'-13'] [15 pts]
- ☐ > 1.5 m - 3.0 m [> 5'-9'] [10 pts]
- ☒ > 0.3 m - 1.5 m [> 1'-5'] [5 pts]

COMMENTS: 3', 2.5', 3.5' = 3' AVERAGE BANKFULL WIDTH (meters): 3'

Bankfull Width Max=30: 5

This information must also be completed

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

RIPARIAN WIDTH (Per Bank)

L	R	
☒	☐	Wide >10m
☐	☐	Moderate 5-10m
☐	☒	Narrow <5m
☐	☐	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R	
☐	☐	Mature Forest, Wetland
☒	☐	Immature Forest, Shrub or Old Field
☐	☐	Residential, Park, New Field
☐	☐	Fenced Pasture

L	R	
☐	☒	Conservation Tillage
☐	☐	Urban or Industrial
☐	☐	Open Pasture, Row Crop
☐	☐	Mining or Construction

COMMENTS: Soybeans on R.B. side

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

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

COMMENTS:

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

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

STREAM GRADIENT ESTIMATE

- ☐ Flat (0.5 ft/100 ft)
- ☐ Flat to Moderate
- ☒ Moderate (0.5-1.0 ft/100 ft)
- ☐ Moderate to Severe
- ☐ Severe (>2.0 ft/100 ft)

STREAM PP

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: Little Darby Creek 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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: CHAMPAIGN Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/14/11 Quantity: ?

Photograph Information: Yes ↓ + ↑

Elevated Turbidity? (Y/N): N Canopy (% open): 50

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) ____

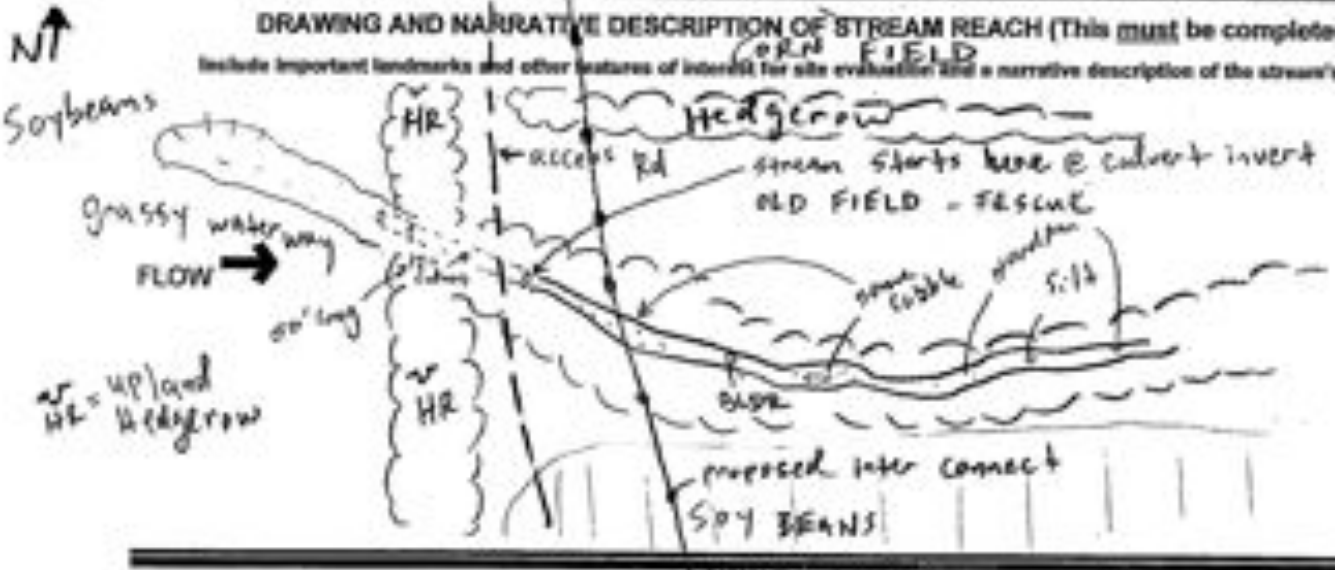
Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) ____ Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) ____

Comments Regarding Biology: None noted

TBD

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



STREAM QQ

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 15

SITE NAME/LOCATION EVERPOWER

SITE NUMBER STR-QQ RIVER BASIN _____ DRAINAGE AREA (m²) 0.20

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

DATE 10/17/11 SCORER B. FALK COMMENTS DRY

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

STREAM CHANNEL ☐ [illegible] ☐ [illegible] ☐ [illegible] ☒ [illegible]

MODIFICATIONS Channelized / [illegible] waterway

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☒☒	SILT [3 pt]	85
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]	1	☐☐	CLAY or HARDPAN [0 pt]	12
☐☐	GRAVEL (2-64 mm) [9 pts]	2	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 1% (A) 6 (B) 4

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

HHEI Metric Points

Substrate Max = 40: 10

A + B

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

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS DRY MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

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

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☒ > 1.0 m (< 3' 3") [5 pts]

COMMENTS 24" AVERAGE BANKFULL WIDTH (meters) 2' 2

Bankfull Width Max=30: 5

This information must also be completed

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

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

COMMENTS _____

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

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

COMMENTS _____

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

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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)

October 24, 2002 Revision

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

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

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____

☐ CWH Name: UT to TREACLE CREEK 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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: CHAMPAIGN Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/14/11 Quantity: ?

Photograph Information: Yes ↑ & L

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: Grassed waterway w/ a defined channel Bed & Bank & evidence of flow

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)

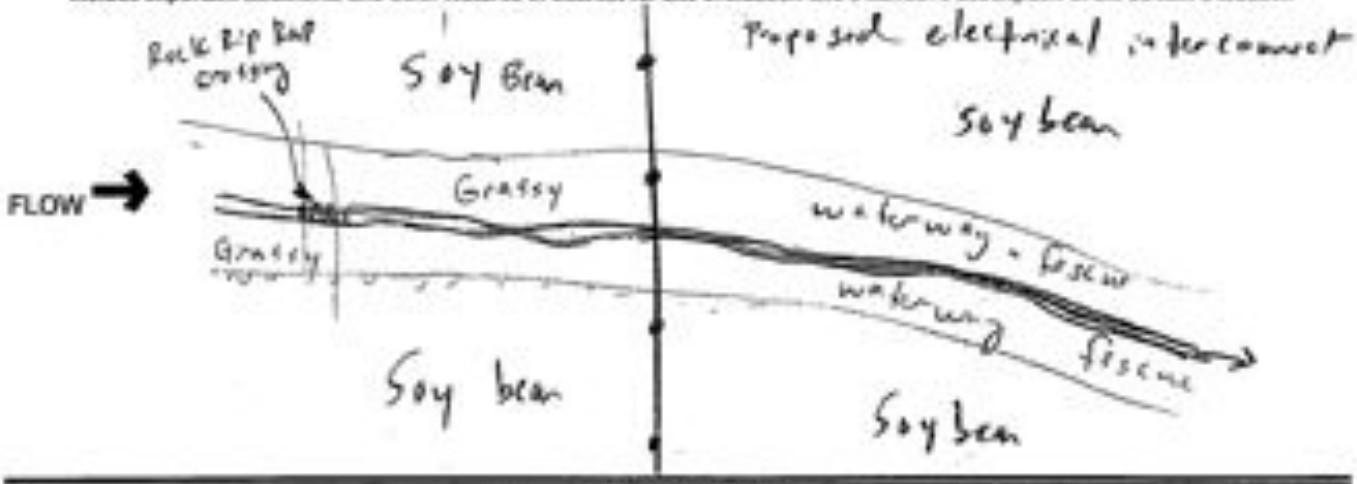
Fish Observed? (Y/N) N Voucher? (Y/N) — Salamanders Observed? (Y/N) N Voucher? (Y/N) —

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

Comments Regarding Ekology: DRY - Nothing observed

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

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



STREAM SS

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3): 46

SITE NAME/LOCATION EVER POWER HEADWATER CREEK

SITE NUMBER STR-SS RIVER BASIN _____ DRAINAGE AREA (mi²) 0.19

LENGTH OF STREAM REACH (ft) _____ LAT. 40.17076 LONG. 83.57217° RIVER CODE _____ RIVER MILE _____

DATE 10/18/11 SCORER B. FALK DRY - originates from Ag field/grassy waterway

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

STREAM CHANNEL: ☐ NON-NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RELENT OR NO RECOVERY

MODIFICATIONS: Channelized

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 22). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]		☐	SILT [3 pts]	5
☐	BOULDER (>256 mm) [16 pts]		☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pt]		☐	FINE DETRITUS [3 pts]	
☒	COBBLE (65-256 mm) [12 pts]	15	☐	CLAY or HARDPAN [0 pt]	10
☐	GRAVEL (2-64 mm) [9 pts]	60	☐	MUCK [3 pts]	
☐	SAND (<2 mm) [6 pts]	10	☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock _____

(A) SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: 21

(B) TOTAL NUMBER OF SUBSTRATE TYPES: 5

HHEI Metric Points — Substrate Max = 40: 26 (A + B)

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

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [16 pts]
- ☐ > 10 - 22.5 cm [12 pts]
- ☐ > 5 cm - 10 cm [16 pts]
- ☐ < 5 cm [8 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS 0 = dry

MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 20: 0

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

- ☐ > 4.5 meters (> 15') [20 pts]
- ☐ > 3.0 m - 4.5 m (> 9'10" - 15') [25 pts]
- ☒ > 1.5 m - 3.0 m (> 4'11" - 9'10") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3'3" - 4'11") [16 pts]
- ☐ ≤ 1.0 m (≤ 3'3") [8 pts]

COMMENTS _____

AVERAGE BANKFULL WIDTH (meters): 6 (6')

Bankfull Width Max=20: 20

This information must also be completed

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

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

COMMENTS Soybean

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

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

COMMENTS Dry

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

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

STREAM GRADIENT ESTIMATE

- ☐ Flat (0.0 ft/mile)
- ☐ Flat to Moderate
- ☒ Moderate (2 ft/mile)
- ☐ Moderate to Severe
- ☐ Severe (10 ft/mile)

October 24, 2002 Revision

STREAM SS

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: TREACLE CREEK Distance from Evaluated Stream 2500'

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

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

County: CHAMPAIGN Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/18/11 Quantity: ?

Photograph Information: photos ↑ + ↓

Elevated Turbidity? (Y/N): N Canopy (% open): 40

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)

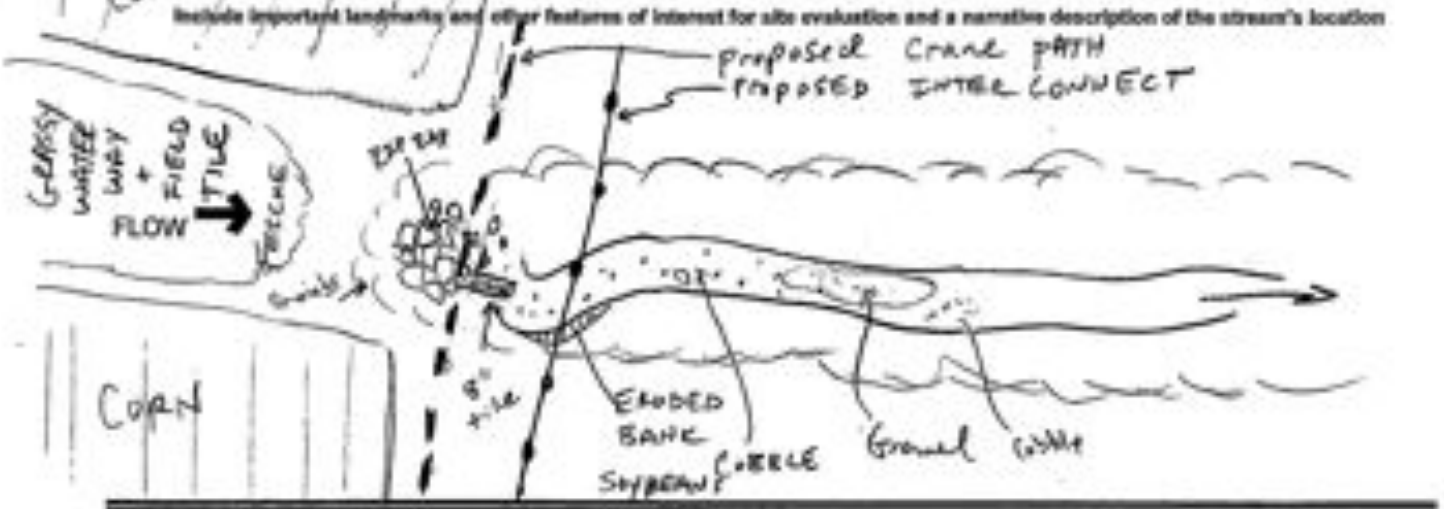
Fish Observed? (Y/N) N Voucher? (Y/N) — Salamanders Observed? (Y/N) N Voucher? (Y/N) —

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

Comments Regarding Biology: DRY — NO 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



October 24, 2002 Revision

OhioEPA Primary Headwater Habitat Evaluation Form

STREAM T1

HHEI Score (sum of metrics 1, 2, 3) : 23

SITE NAME/LOCATION EVER POWER

SITE NUMBER STRT1 RIVER BASIN TEAYLE CR. DRAINAGE AREA (mi²) < 0.2

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

DATE 10/18/11 SCORER BMF COMMENTS _____

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

STREAM CHANNEL MODIFICATIONS: [illegible] X [illegible]

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR. SLABS [16 pts]		☐	SILT [3 pts]	49
☐	BOULDER (>256 mm) [16 pts]		☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pt]		☐	FINE DETRITUS [3 pts]	
☐	COBBLE (65-256 mm) [12 pts]	1	☒	CLAY or HARDPAN [0 pt]	40
☐	GRAVEL (2-64 mm) [9 pts]	10	☐	MUCK [0 pts]	
☐	SAND (<2 mm) [6 pts]	5	☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 11 (A) 3

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B) 5

TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40: 8

A + B

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

☐	> 30 centimeters [20 pts]	☐	≥ 5 cm - 10 cm [15 pts]
☐	> 22.5 - 30 cm [30 pts]	☐	< 5 cm [8 pts]
☐	> 15 - 22.5 cm [25 pts]	☒	NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS DRY

MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

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

☐	> 4.0 meters [> 13] [30 pts]	☒	> 1.0 m - 1.5 m [> 3'3" - 4'11"] [15 pts]
☐	> 3.0 m - 4.0 m [> 9.7' - 13'] [25 pts]	☐	≤ 1.0 m [≤ 3'3"] [8 pts]
☐	> 1.5 m - 3.0 m [> 4'11" - 9.8'] [20 pts]		

COMMENTS 3.5' avg width

AVERAGE BANKFULL WIDTH (meters): 1.2

Bankfull Width Max=30: 15

This information must also be completed

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

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

COMMENTS pasture does not appear to have been recently used mowed for hay

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

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

COMMENTS DRY

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

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

STREAM GRADIENT ESTIMATE

☐ Flat (0.0 ft/mile) ☐ Flat to Moderate ☒ Moderate (2 ft/mile) ☐ Moderate to Severe ☐ Severe (10 ft/mile)

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

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: TREACLE CREEK Distance from Evaluated Stream ¼ mile

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

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

County: CHAMPAIGN Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: 10/18/11 Quantity: ?

Photograph Information: Yes ↓ ↑

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)

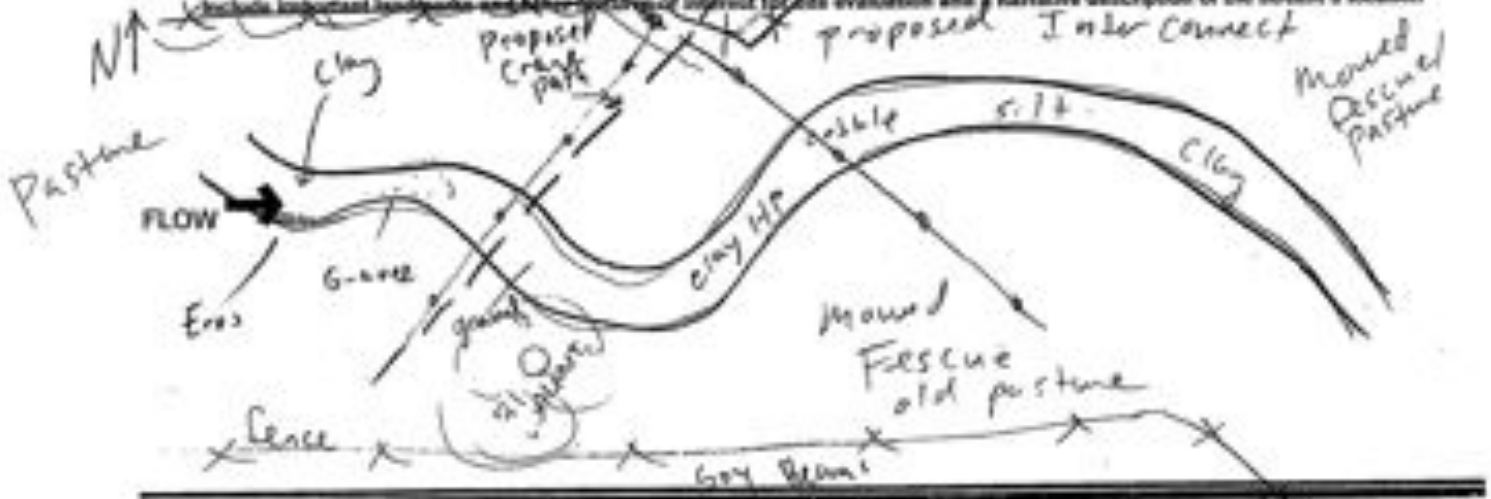
Fish Observed? (Y/N) N Voucher? (Y/N) _____ Salamanders Observed? (Y/N) N Voucher? (Y/N) _____

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

Comments Regarding Biology: No Biology in dry Stream Bed

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

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



JUMPING RUN - STREAM-UU

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 49

SITE NAME/LOCATION EVER POWER

SITE NUMBER STR UU RIVER BASIN _____ DRAINAGE AREA (mi²) 0.51

LENGTH OF STREAM REACH (ft) _____ LAT. 40.104483 LONG. 83.55980 RIVER CODE _____ RIVER MILE _____

DATE 10/19/11 SCORER(S) BFALKINBURG - WATER, not flowing, ponded

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

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

Channelized

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]		☐	SILT [3 pt]	85
☐	BOULDER (>256 mm) [16 pts]		☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pt]		☐	FINE DETRITUS [3 pts]	
☐	COBBLE (65-256 mm) [12 pts]		☒	CLAY or HARDPAN [3 pt]	10
☐	GRAVEL (2-64 mm) [9 pts]	2	☐	MUCK [3 pts]	
☐	SAND (<2 mm) [6 pts]	5	☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock _____ (A) 0

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (B) 4 TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points — Substrate Max = 40: 4 (A + B)

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

- ☐ > 30 centimeters [25 pts]
- ☐ > 22.5 - 30 cm [20 pts]
- ☒ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ ≤ 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS 6" - 15 cm MAXIMUM POOL DEPTH (centimeters): 15

Pool Depth Max = 30: 25

3. BANK FULL WIDTH (Measured as the average of 3-6 measurements) (Check ONLY one box):

- ☐ > 4.6 Meters (> 15') [30 pts]
- ☐ > 3.0 m - 4.6 m (> 9.7' - 15') [25 pts]
- ☒ > 1.5 m - 3.0 m (> 5' - 9.8') [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 9") [10 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS 5' AVERAGE BANKFULL WIDTH (meters): 5 ft

Bankfull Width Max=30: 20

This information must also be completed

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

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

COMMENTS mowed fescue between Rd + Ag field

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

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

COMMENTS _____

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

- ☐ None
- ☐ 0.5
- ☒ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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)

STREAM UU

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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Champaign Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: TODAY Quantity: ≈ 1"

Photograph Information: yes

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)

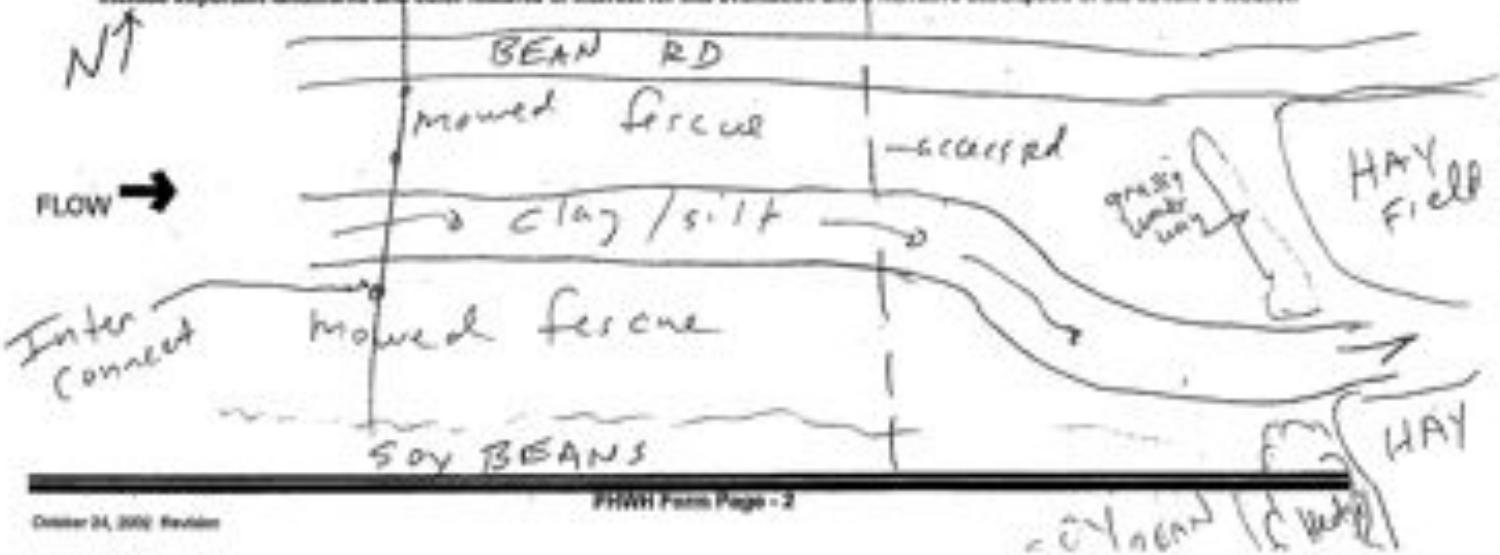
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

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

Comments Regarding Biology: _____

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

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



STREAM VV

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3): 9

SITE NAME/LOCATION: EAST FORK STREAM LD REROUTE

SITE NUMBER: SAR-VV RIVER BASIN: _____ DRAINAGE AREA (mi²): 0.04

LENGTH OF STREAM REACH (ft): 75' LAT.: _____ LONG.: _____ RIVER CODE: _____ RIVER MILE: _____

DATE: 10/19/11 SCORER: BMF COMMENTS: DRY, Most of Stream buried/filled

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

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

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 20). Add total number of significant substrate types found (Max of 6). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]		☐	SILT [3 pt]	✓ 15
☐	BOULDER (>256 mm) [16 pts]		☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pt]		☐	FINE DETRITUS [3 pts]	
☐	COBBLE (64-256 mm) [12 pts]	✓ 10	☒	CLAY or HARDPAN [0 pt]	✓ 20
☐	GRAVEL (2-64 mm) [9 pts]	✓ 5	☐	MUCK [6 pts]	
☐	SAND (.2-2 mm) [6 pts]		☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10 (A): 0

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: (B): 4 TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points — Substrate Max = 40: 4 — A + B

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

- ☐ > 30 cm (>12 inches) [20 pts]
- ☐ > 22.5 - 30 cm [18 pts]
- ☐ > 10 - 22.5 cm [15 pts]
- ☐ > 5 cm - 10 cm [10 pts]
- ☐ ≤ 5 cm [5 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: _____ MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

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

- ☐ > 4.0 meters (> 13') [20 pts]
- ☐ > 3.0 m - 4.0 m (> 9'3" - 13') [16 pts]
- ☐ > 1.0 m - 3.0 m (> 3'3" - 9'3") [10 pts]
- ☒ ≤ 1.0 m (≤ 3'3") [5 pts]

COMMENTS: 24" 24" 26" AVERAGE BANKFULL WIDTH (meters): 13

Bankfull Width Max=20: 5

This information must also be completed

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

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

COMMENTS: Mowed RR ROW

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

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☒ Dry channel, no water (Ephemeral)

COMMENTS: _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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): STREAM VV

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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: CHAMPAIGN Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: TODAY Quantity: LOTS

Photograph Information: Vert ↑ ↓

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) _____ If not, please explain: _____

Additional comments/description of pollution impacts: _____

BIOTIC EVALUATION

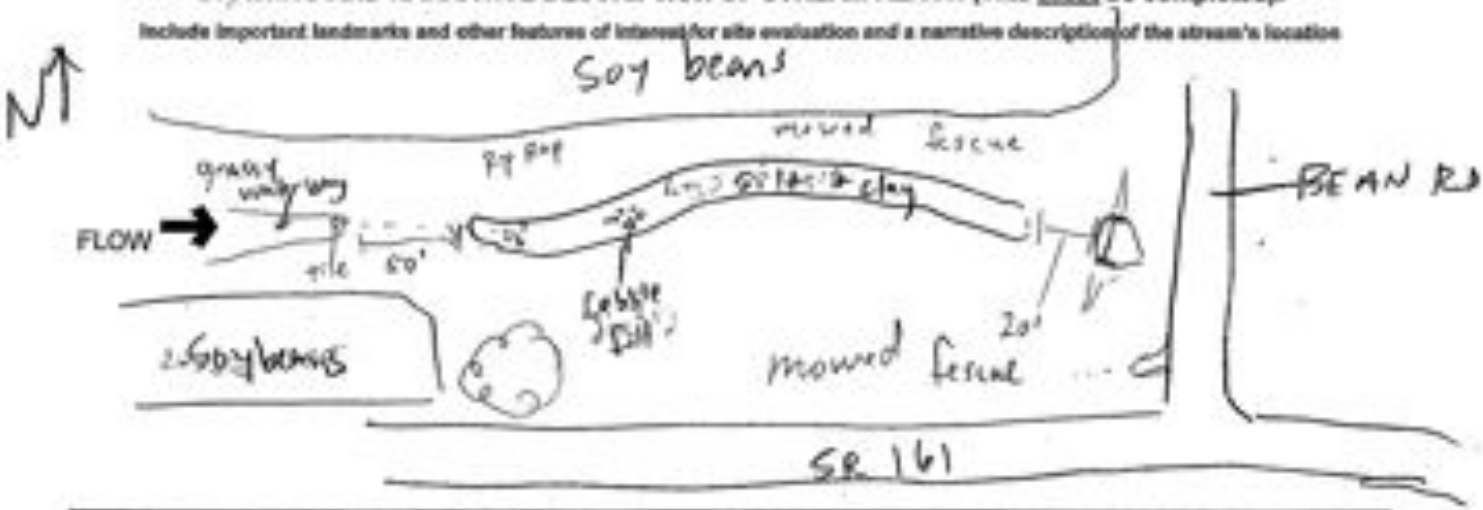
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____
Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

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



Mod class II
by HHEI

STREAM WW

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 42

SITE NAME/LOCATION EVER POWER - PH 2

SITE NUMBER STR WW RIVER BASIN UT Little Darby DRAINAGE AREA (mi²) 0.42

LENGTH OF STREAM REACH (ft) 200 LAT. _____ LONG. _____ RIVER CODE _____ RIVER MILE _____

DATE 10/19/11 SCORER BMF COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL: ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

MODIFICATIONS: channelization

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	
☐☐	BOULDER (>250 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-250 mm) [12 pts]	✓ 5	☐☐	CLAY or HARDPAN [9 pt]	
☒☒	GRAVEL (2-64 mm) [9 pts]	✓ 30	☐☐	MUCK [6 pts]	
☐☐	SAND (<2 mm) [6 pts]	✓ 10	☐☐	ARTIFICIAL [3 pts] Concrete Rubble	✓ 10

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 5 (A) 18 (B) 4

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40: 22 (A + B)

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [20 pts]
- ☐ > 10 - 22.5 cm [20 pts]
- ☐ > 5 cm - 10 cm [16 pts]
- ☐ > 5 cm [5 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS dry channel MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

- ☐ > 4.0 meters (> 13') [20 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [20 pts]
- ☒ > 1.5 m - 3.0 m (> 9' 7" - 4' 9") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 9") [16 pts]
- ☐ > 1.0 m (> 3' 3") [8 pts]

COMMENTS 7', 6', 8' AVERAGE BANKFULL WIDTH (meters): 7'

Bankfull Width Max=30: 20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☒	Conservation Tillage
☒	☒	Moderate 5-10m	☒	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS _____

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Intermittent)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☒ Dry channel, no water (Ephemeral)

COMMENTS No flow / Dry

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☒ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.0 m/100 ft) ☐ Flat to Moderate ☒ Moderate (0.5 m/100 ft) ☐ Moderate to Severe ☐ Severe (>0.5 m/100 ft)

October 24, 2002 Rev/Mar

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed): STREAM WW

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: Little Darby Creek Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: _____ NRCS Soil Map Page: _____ NRCS Soil Map Sheets Order _____

County: CHAMPAIGN Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: TODAY Quantity: ≥ 1"

Photograph Information: _____

Elevated Turbidity? (Y/N): N Canopy (% open): 30%

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: Concrete Rubble Ford Crossing for Ag implements

BIOTIC EVALUATION

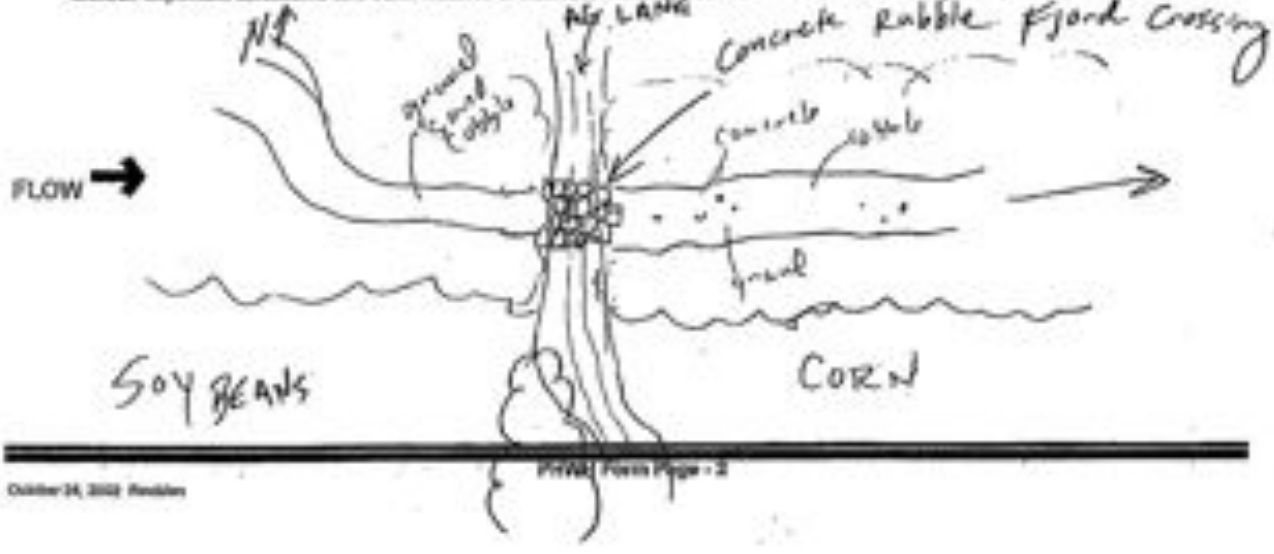
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

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: None

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



Mod class II
by HHEI

ephemeral

STREAM XX

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 38

SITE NAME/LOCATION: RIVER RIVER

SITE NUMBER: SAR-XX RIVER BASIN: Little Darby DRAINAGE AREA (mi²): 0.01

LENGTH OF STREAM REACH (ft): 200 LAT. 40.0517 LONG. 23.584107 RIVER CODE _____ RIVER MILE _____

DATE: 10/19/11 SCORER: BMF COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL: ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECEIVED NO RECOVERY

MODIFICATIONS:

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pt]	<20
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]	<10	☐☐	CLAY or HARDPAN [0 pt]	<10
☒☒	GRAVEL (2-64 mm) [9 pts]	<60	☐☐	MUCK [0 pts]	
☐☐	SAND (<2 mm) [6 pts]	<10	☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock: 10 (A) 18 (B) 5

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES: TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40: 23

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

☐ > 30 centimeters [20 pts] ☐ > 5 cm - 10 cm [16 pts]
☐ > 22.5 - 30 cm [20 pts] ☐ < 5 cm [5 pts]
☐ > 15 - 22.5 cm [25 pts] ☒ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS: DRY MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

☐ > 4.0 meters (> 13') [30 pts] ☒ > 1.0 m - 1.8 m (> 3' 3" - 4' 9") [16 pts]
☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts] ☐ < 1.0 m (< 3' 3") [8 pts]
☐ > 1.8 m - 3.0 m (> 5' 7" - 4' 9") [20 pts]

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters): 4'

Bankfull Width Max=30: 15

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☒	Moderate 5-10m	☒	☒	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

CRP WEG HAY

COMMENTS _____

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

☐ Stream Flowing ☐ Moist Channel, isolated pools, no flow (intermittent)
☐ Subsurface flow with isolated pools (intermittent) ☒ Dry channel, no water (Ephemeral)

COMMENTS: Dry

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

☐ None ☐ 1.0 ☐ 2.0 ☐ 3.0
☐ 0.5 ☐ 1.5 ☐ 2.5 ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 m/100 ft) ☐ Flat to Moderate ☒ Moderate (0.5/100 ft) ☐ Moderate to Severe ☐ Severe (10 m/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed): STREAM XX

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: LITTLE DARBY CR. Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: CHAMPAIGN Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: Today Quantity: 1"

Photograph Information: yes 1 + 1

Elevated Turbidity? (Y/N): N Canopy (% open): 20

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

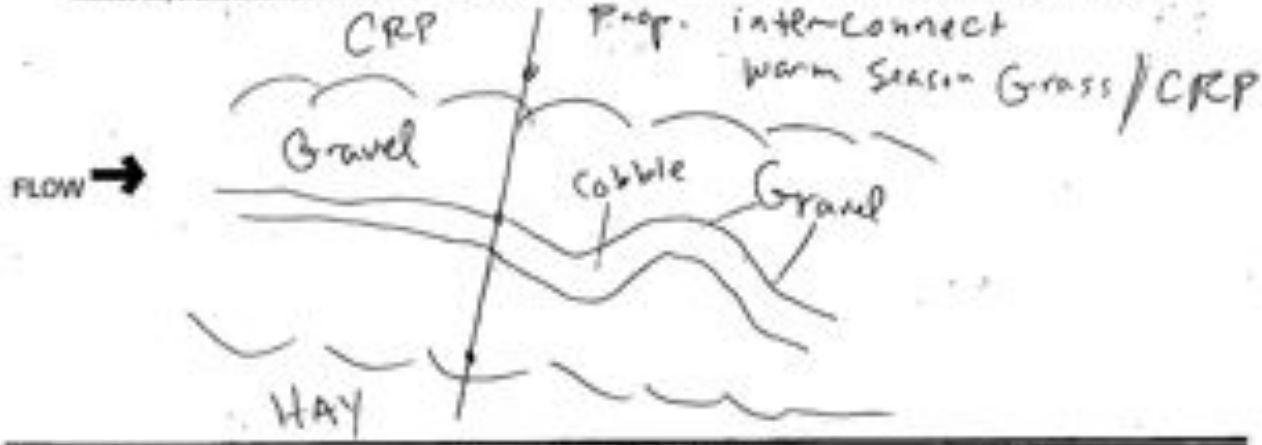
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N) _____ Voucher? (Y/N) _____ Salamanders Observed? (Y/N) _____ Voucher? (Y/N) _____
Frogs or Tadpoles Observed? (Y/N) _____ Voucher? (Y/N) _____ Aquatic Macroinvertebrates Observed? (Y/N) _____ Voucher? (Y/N) _____

Comments Regarding Biology: _____

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



STREAM YY

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 8

SITE NAME/LOCATION EVERFLOWER SITE NUMBER _____ RIVER BASIN Little Darby DRAINAGE AREA (mi²) 0.27

LENGTH OF STREAM REACH (ft) _____ LAT 40° 07' 12" LONG 83° 58' 51" RIVER CODE _____ RIVER MILE _____

DATE 10/19/11 SCORER BMF COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for instructions.

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☐ RECOVERED ☒ RECOVERING ☐ RECENT OR NO RECOVERY channelized + open pasture

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☐☐	SILT [3 pts]	
☐☐	BOULDER (>256 mm) [16 pts]		☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-256 mm) [12 pts]	✓15	☒☒	CLAY or HARDPAN [3 pt]	✓70
☐☐	GRAVEL (2-64 mm) [9 pts]	✓15	☐☐	MUCK [3 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 15 (A) 0

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B) 3 TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points

Substrate Max = 40: 3

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [13 pts]
- ☐ > 10 - 22.5 cm [8 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ ≤ 5 cm [5 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts] → 0

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters):

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

- ☐ > 4.6 meters (> 15') [20 pts]
- ☐ > 3.0 to 4.6 m (> 9'7" - 15') [16 pts]
- ☐ > 1.8 m - 3.0 m (> 5'7" - 9'7") [20 pts]
- ☐ > 1.0 m - 1.8 m (> 3'3" - 5'7") [16 pts]
- ☒ ≤ 1.0 m (≤ 3'3") [5 pts]

2 AVERAGE BANKFULL WIDTH (meters) → 24

COMMENTS _____

Bankfull Width Max=20: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank)

L	R	
☐	☐	Wide >10m
☐	☐	Moderate 5-10m
☐	☐	Narrow <5m
☒	☒	None

FLOODPLAIN QUALITY (Most Predominant per Bank)

L	R	
☐	☐	Mature Forest, Wetland
☐	☐	Immature Forest, Shrub or Old Field
☐	☐	Residential, Park, New Field
☐	☐	Fenced Pasture
☐	☐	Conservation Tillage
☐	☐	Urban or Industrial
☒	☒	Open Pasture, Row Crop
☐	☐	Mining or Construction

COMMENTS _____

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☒ Dry channel, no water (Ephemeral)

COMMENTS _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

- ☐ None
- ☐ 0.5
- ☒ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☒ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☐ Flat (0.5 ft/100 ft) ☐ Flat to Moderate ☒ Moderate (0.5-2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (>2 ft/100 ft)

STREAM YY

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: Little Darby Creek Distance from Evaluated Stream _____

MAPPING: ATTACH COPIES OF MAPS, INCLUDING THE ENTIRE WATERSHED AREA. CLEARLY MARK THE SITE LOCATION

USGS Quadrangle Name: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Champaign Township / City: Mechanicsburg

MISCELLANEOUS

Base Flow Conditions? (Y/N): _____ Date of last precipitation: Today Quantity: >1"

Photograph Information: Yes ↓ ↑

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)

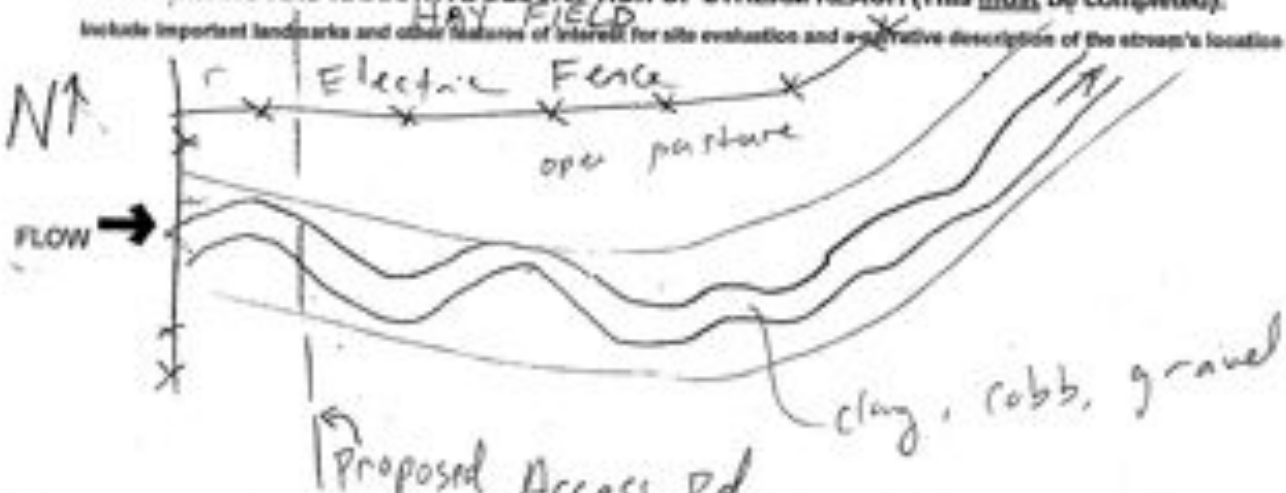
Fish Observed? (Y/N) N Voucher? (Y/N) — Salamanders Observed? (Y/N) N Voucher? (Y/N) —

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 qualitative description of the stream's location



STREAM ZZ

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3): 43

SITE NAME/LOCATION Cuyahoga Power Plant

SITE NUMBER Stm 22-1 RIVER BASIN _____ DRAINAGE AREA (mi²) 0.24

LENGTH OF STREAM REACH (ft) 200 LAT. 41.10537 LONG. 82-62'49" RIVER CODE _____ RIVER MILE _____

DATE 10/20/11 SCORER RMF COMMENTS DRY DESPITE 2 DAYS SOLID RAIN!

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☒ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

Channelization

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐	BLDR SLABS [16 pts]		☐	SILT [3 pts]	
☐	BOULDER (>256 mm) [16 pts]	11	☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐	BEDROCK [16 pts]		☐	FINE DETRITUS [3 pts]	
☐	COBBLE (65-256 mm) [13 pts]	5	☐	CLAY or HARDPAN [0 pt]	12
☒	GRAVEL (2-64 mm) [9 pts]	90	☐	MUCK [0 pts]	
☐	SAND (<2 mm) [6 pts]	2	☐	ARTIFICIAL [3 pts]	

Total of Percentages of (Bldr Slabs, Boulder, Cobble, Bedrock) 6% (A) 18

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

(B) 5 TOTAL NUMBER OF SUBSTRATE TYPES:

HHEI Metric Points — Substrate Max = 40: 23 (A+B)

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ ≤ 5 cm [5 pts]
- ☒ NO WATER OR MOIST CHANNEL [0 pts] → 0

COMMENTS _____ MAXIMUM POOL DEPTH (centimeters):

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 3" - 13') [25 pts]
- ☒ > 1.5 m - 3.0 m (> 4' 7" - 9' 3") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 6") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS 6', 7', 7' AVERAGE BANKFULL WIDTH (meters): 6.7

Bankfull Width Max=20: 20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank)	L	R
Wide >10m	☒	☐
Moderate 5-10m	☐	☐
Narrow <5m	☐	☒
None	☐	☐

FLOODPLAIN QUALITY (Most Predominant per Bank)	L	R
Mature Forest, Wetland	☐	☐
Immature Forest, Shrub or Old Field	☒	☐
Residential, Park, New Field	☐	☐
Fenced Pasture	☐	☐
Conservation Tillage	☐	☐
Urban or Industrial	☐	☐
Open Pasture, (Row Crop)	☐	☒
Mining or Construction	☐	☐

COMMENTS _____

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☒ Dry channel, no water (Ephemeral)

COMMENTS DRY

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☒ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

- ☐ Flat (0.4 ft/100 ft)
- ☐ Flat to Moderate
- ☒ Moderate (0.4-2.0 ft/100 ft)
- ☐ Moderate to Severe
- ☐ Severe (>2.0 ft/100 ft)

ADDITIONAL STREAM INFORMATION (This Information Must Also be Completed): STREAM ZZ

QHEI PERFORMED? - ☐ Yes ☑ No QHEI Score _____ (If Yes, Attach Completed QHEI Form)

DOWNSTREAM DESIGNATED USE(S)

☐ WWH Name: _____ Distance from Evaluated Stream _____
☐ CWH Name: BULL CREEK 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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: CHAMPAIGN Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: TODAY Quantity: ✓ 1-2"?

Photograph Information: Y

Elevated Turbidity? (Y/N): N Canopy (% open): 40 %

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) U 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

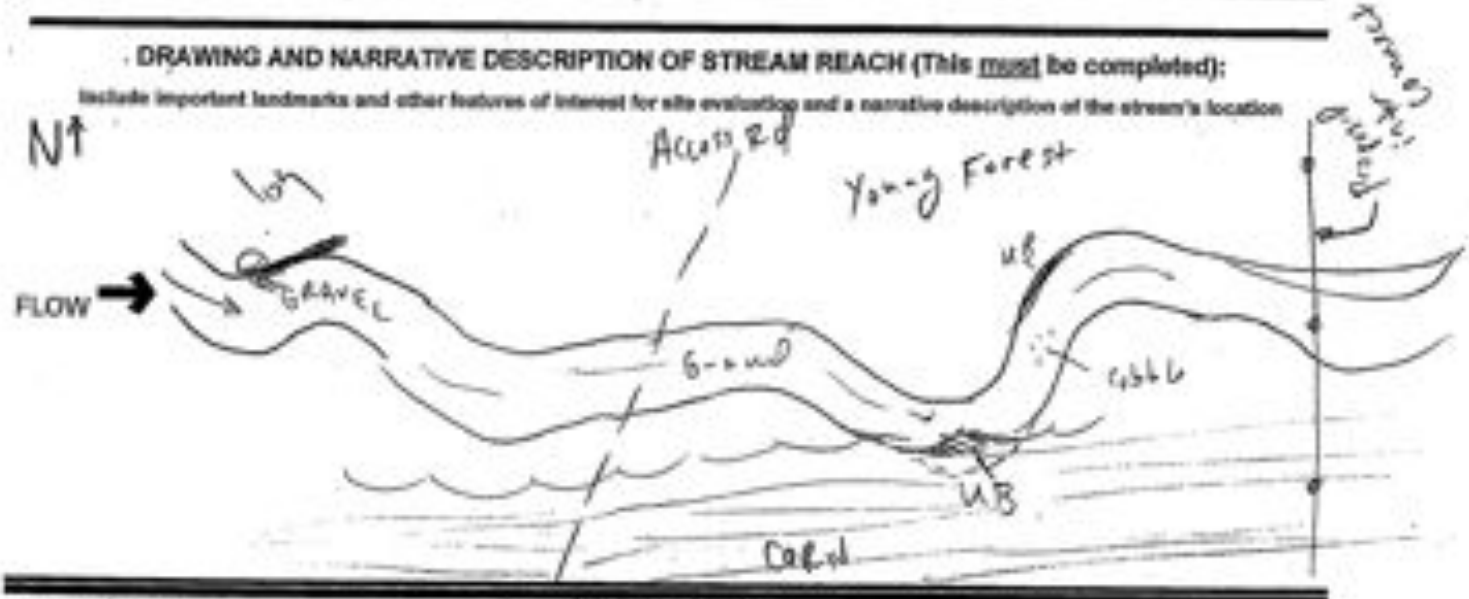
Performed? (Y/N): N (If Yes, Record all observations. Voucher collections optional. NOTE: all voucher samples must be labeled with the site ID number. Include appropriate field data sheets from the Primary Headwater Habitat Assessment Manual)

Fish Observed? (Y/N)____ Voucher? (Y/N)____ Salamanders Observed? (Y/N)____ Voucher? (Y/N)____
Frogs or Tadpoles Observed? (Y/N)____ Voucher? (Y/N)____ Aquatic Macroinvertebrates Observed? (Y/N)____ Voucher? (Y/N)____

Comments Regarding Biology: _____

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



STREAM ZZ-2

Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 29

SITE NAME/LOCATION Everpower Phase II

SITE NUMBER ~~AAA~~ ZZ-2 RIVER BASIN _____ DRAINAGE AREA (mi²) 0.10

LENGTH OF STREAM REACH (ft) 200 LAT. _____ LONG. _____ RIVER CODE _____ RIVER MILE _____

DATE 10/20/11 SCORER _____ COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: ☐ NONE / NATURAL CHANNEL ☑ RECOVERED ☐ RECOVERING ☐ RECENT OR NO RECOVERY

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐☐	BLDR SLABS [16 pts]		☑☑	SILT [3 pt]	25
☐☐	BOULDER (>250 mm) [16 pts]	1	☐☐	LEAF PACK/WOODY DEBRIS [3 pts]	19
☐☐	BEDROCK [16 pt]		☐☐	FINE DETRITUS [3 pts]	
☐☐	COBBLE (65-250 mm) [12 pts]		☐☐	CLAY or HARDPAN [0 pt]	
☐☐	GRAVEL (2-64 mm) [9 pts]		☐☐	MUCK [9 pts]	
☐☐	SAND (<2 mm) [6 pts]		☐☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 1 (A) 8

SCORE OF TWO MOST PREDOMINATE SUBSTRATE TYPES:

TOTAL NUMBER OF SUBSTRATE TYPES: (B) 3

HHEI Metric Points

Substrate Max = 40: 9

A + B

2. Maximum Pool Depth (Measure the maximum pool depth within the 61 meter (200 ft) evaluation reach at the time of evaluation. Avoid plunge pools from road culverts or storm water pipes) (Check ONLY one box):

- ☐ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [15 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☑ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS dry

MAXIMUM POOL DEPTH (centimeters): 0

Pool Depth Max = 30: 0

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☑ > 1.5 m - 3.0 m (> 5' 7" - 4' 9") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 9") [15 pts]
- ☐ ≤ 1.0 m (≤ 3' 3") [5 pts]

COMMENTS _____ AVERAGE BANKFULL WIDTH (meters) 5'4" 20

Bankfull Width Max=20: 20

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☑	☑	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☐	☐	Moderate 5-10m	☑	☑	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☑	☑	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS _____

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

- ☐ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☑ Moist Channel, isolated pools, no flow (Intermittent)
- ☑ Dry channel, no water (Ephemeral)

COMMENTS _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

- ☐ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☑ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >3

STREAM GRADIENT ESTIMATE

☑ Flat (0.0 ft/100 ft) ☐ Flat to Moderate ☐ Moderate (2 ft/100 ft) ☐ Moderate to Severe ☐ Severe (10 ft/100 ft)

STREAM 272

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: Boneyard Creek 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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: Champaign Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N) N Date of last precipitation: 10-20-11 Quantity: 1-2"

Photograph Information: Y

Elevated Turbidity? (Y/N): N Canopy (% open): 15

Were samples collected for water chemistry? (Y/N): N (Note lab sample no. or id. and attach results) Lab Number: _____

Field Measures: Temp (°C) NA Dissolved Oxygen (mg/l) NA pH (S.U.) NA Conductivity (µmhos/cm) NA

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)

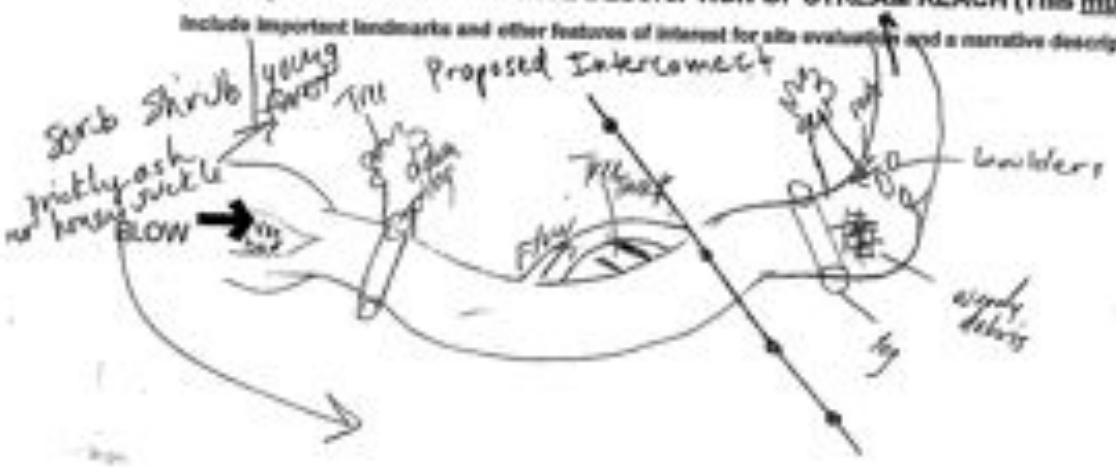
Fish Observed? (Y/N) N Voucher? (Y/N) N Salamanders Observed? (Y/N) N Voucher? (Y/N) N

Frogs or Tadpoles Observed? (Y/N) N Voucher? (Y/N) N Aquatic Macroinvertebrates Observed? (Y/N) N Voucher? (Y/N) N

Comments Regarding Biology: _____

DRAWING AND NARRATIVE DESCRIPTION OF STREAM REACH (This must be completed):

Include important landmarks and other features of interest for site evaluation and a narrative description of the stream's location



Mod Class II STREAM AAA

OhioEPA Primary Headwater Habitat Evaluation Form

HHEI Score (sum of metrics 1, 2, 3) : 34

SITE NAME/LOCATION EXPOTO UT to Buck Creek

SITE NUMBER _____ RIVER BASIN _____ DRAINAGE AREA (mi²) 0.06

LENGTH OF STREAM REACH (ft) _____ LAT. _____ LONG. _____ RIVER CODE _____ RIVER MILE _____

DATE _____ SCORER BMF COMMENTS _____

NOTE: Complete All Items On This Form - Refer to "Field Evaluation Manual for Ohio's PHWH Streams" for Instructions

STREAM CHANNEL MODIFICATIONS: [illegible]

1. SUBSTRATE (Estimate percent of every type of substrate present. Check ONLY two predominant substrate TYPE boxes (Max of 32). Add total number of significant substrate types found (Max of 8). Final metric score is sum of boxes A & B.

TYPE		PERCENT	TYPE		PERCENT
☐ ☐	BLDR SLABS [16 pts]		☒ ☐	SILT [3 pt]	✓ 30
☒ ☐	BOULDER (>256 mm) [16 pts]	✓ 10	☐ ☐	LEAF PACK/WOODY DEBRIS [3 pts]	
☐ ☐	BEDROCK [16 pt]		☐ ☐	FINE DETRITUS [3 pts]	
☒ ☐	COBBLE (65-256 mm) [12 pts]	✓ 5	☐ ☒	CLAY or HARDPAN [0 pt]	✓ 40
☐ ☐	GRAVEL (2-64 mm) [9 pts]	✓ 20	☐ ☐	MUCK [6 pts]	
☐ ☐	SAND (<2 mm) [6 pts]	✓ 5	☐ ☐	ARTIFICIAL [3 pts]	

Total of Percentages of Bldr Slabs, Boulder, Cobble, Bedrock 15 (A) 3 (B) 6

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):

- ☒ > 30 centimeters [20 pts]
- ☐ > 22.5 - 30 cm [30 pts]
- ☐ > 10 - 22.5 cm [25 pts]
- ☐ > 5 cm - 10 cm [15 pts]
- ☐ < 5 cm [5 pts]
- ☐ NO WATER OR MOIST CHANNEL [0 pts]

COMMENTS 15" 12" 11" MAXIMUM POOL DEPTH (centimeters): 37

3. BANK FULL WIDTH (Measured as the average of 3-4 measurements) (Check ONLY one box):

- ☐ > 4.0 meters (> 13') [30 pts]
- ☐ > 3.0 m - 4.0 m (> 9' 7" - 13') [25 pts]
- ☐ > 1.5 m - 3.0 m (> 9' 7" - 4' 8") [20 pts]
- ☐ > 1.0 m - 1.5 m (> 3' 3" - 4' 8") [15 pts]
- ☒ < 1.0 m (< 3' 3") [0 pts]

COMMENTS 3' 2" AVERAGE BANKFULL WIDTH (meters) 1

HHEI Metric Points

Substrate Max = 40: 9

A + B

Pool Depth Max = 30: 20

Bankfull Width Max=30: 5

This information must also be completed

RIPARIAN ZONE AND FLOODPLAIN QUALITY ☆NOTE: River Left (L) and Right (R) as looking downstream☆

RIPARIAN WIDTH (Per Bank) L	R		FLOODPLAIN QUALITY (Most Predominant per Bank) L	R		L	R	
☐	☐	Wide >10m	☐	☐	Mature Forest, Wetland	☐	☐	Conservation Tillage
☒	☒	Moderate 5-10m	☐	☐	Immature Forest, Shrub or Old Field	☐	☐	Urban or Industrial
☐	☐	Narrow <5m	☐	☐	Residential, Park, New Field	☐	☐	Open Pasture, Row Crop
☐	☐	None	☐	☐	Fenced Pasture	☐	☐	Mining or Construction

COMMENTS _____

FLOW REGIME (At Time of Evaluation) (Check ONLY one box):

- ☒ Stream Flowing
- ☐ Subsurface flow with isolated pools (Interstitial)
- ☐ Moist Channel, isolated pools, no flow (Intermittent)
- ☐ Dry channel, no water (Ephemeral)

COMMENTS _____

SINUOSITY (Number of bends per 61 m (200 ft) of channel) (Check ONLY one box):

- ☒ None
- ☐ 0.5
- ☐ 1.0
- ☐ 1.5
- ☐ 2.0
- ☐ 2.5
- ☐ 3.0
- ☐ >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)

October 24, 2002 Revision

STREAM AAA

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: Buck Creek 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: _____ NRCS Soil Map Page: _____ NRCS Soil Map Stream Order _____

County: _____ Township / City: _____

MISCELLANEOUS

Base Flow Conditions? (Y/N): Y Date of last precipitation: today Quantity: _____

Photograph Information: Yes ↑ ↗ ↓

Elevated Turbidity? (Y/N): Y 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) _____ If not, please explain: _____

Additional comments/description of pollution impacts: _____

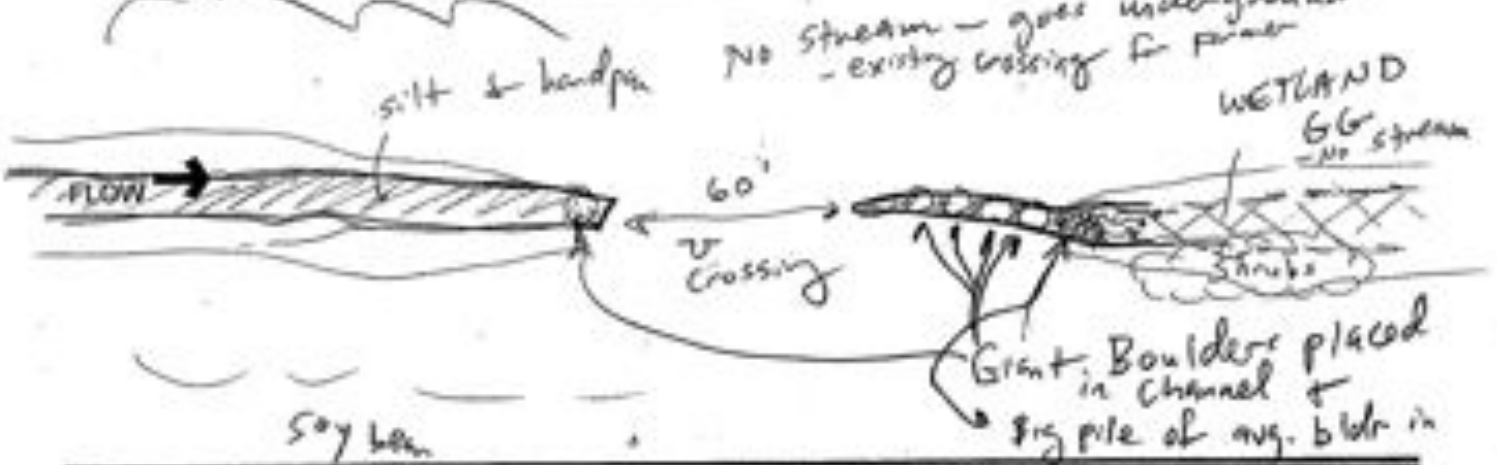
BIOTIC EVALUATION

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) ____ 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