ATTACHMENT 1

Inadvertent Fluid Release Prevention, Monitoring, and Contingency Plan

Inadvertent Fluid Release Prevention, Monitoring, and Contingency Plan

ITC Lake Erie Connector, LLC (ITC), through its contractors, will implement a Drilling Fluid Monitoring and Operations Plan (Plan) during all Horizontal Directional Drilling (HDD) operations associated with installation of the Lake Erie Connector Project (LEC).

In any fluid based drilling operation there is a chance of inadvertent release of drilling fluids, typically due to weak spots in the soils allowing migration of the fluids to the surface.

The purpose of this plan is to quickly identify any inadvertent fluid releases and then contain, minimize, and remediate any environmental impacts associated with any normal or inadvertent release of HDD drilling fluids.

This plan is currently a template setting forth the minimum requirements for site-specific plans that will be prepared by HDD drilling contractor(s) once such contractor(s) have been selected and engaged. Copies of the final site-specific inadvertent return plan for each site will be provided to the relevant regulatory agencies before the commencement of drilling activities at each site.

1.0 Project Summary

The Lake Erie Connector Project consists of installation of a High Voltage Direct Current (HVDC) cable system in Lake Erie and lands on each side of Lake Erie between the Nanticoke Transformer Station in Ontario, Canada and Erie West Substation in Erie County, Pennsylvania, USA. The project includes multiple areas where the underground cable conduits will be installed by HDD. Three main types of areas are involved, where significantly different equipment and procedures will be used: (1) the Lake Erie shoreline area (where HDD borings will be installed to transition the cables from the top of the bluff to a point in the off-shore bedrock bed of Lake Erie; (2) crossings under certain streams; and (3) crossings to avoid certain surface obstacles. The procedures for monitoring and on site contingency measures will be different for each type based on potential risk of environmental impacts.

1.1 Lake Erie Shoreline Crossings

In order to minimize disturbance in the shoreline and shallow water areas of Lake Erie, ITC intends to install conduits for the cable by HDD. The shoreline crossings will be approximately 750 m (2,500 ft) long, extending approximately 600 m (2,000 ft) into the water. Each shoreline

crossing will consist of 3 parallel bore holes, separated by approximately 10 m (33 ft). A single high density polyethylene (HDPE) pipe with an outside diameter of 250 to 350 mm (10 to 14 inches) will be installed in each borehole to act as a casing.

1.2 Waterway Crossings

No additional waterway crossings are expected in Ontario.

HDD used for stream crossings will be much shorter than Lake Erie shoreline crossing, generally involving borings less than 150 m (500 ft) long. Each HDD stream crossing will consist of three parallel bores, separated by a minimum of 5 m (15 ft). A single high density polyethylene (HDPE) pipe with an outside diameter of 200 to 300 mm (8 to 12 inches) will be installed in each borehole to act as a casing.

1.3 Surface Obstacle Crossings

No additional HDD installations are expected in Ontario. Surface obstacles such as railroads are expected to be crossed by cased auger boring (Jack & Bore).

Certain surface obstacles in Pennsylvania, such as high traffic roadways, railroads, and ephemeral waterways, may be crossed by HDD or Jack & Bore. Where HDD is used the crossings will be less than 150 m (500 ft) long. Each crossing will consist of three parallel bores, separated by approximately 5 m (15 ft). A single high density polyethylene (HDPE) pipe with an outside diameter of 200 to 300 mm (8 to 12 inches) will be installed in each borehole to act as a casing.

2.0 Drilling Fluid

In HDD installations, drilling fluid is used to remove cuttings and spoils from the borehole, maintain the integrity of the hole, and lubricate and cool the drill bit.

Drilling fluid is mostly water with addition of naturally occurring clay called sodium montmorillinite (bentonite). Bentonite is a non-toxic, non-reactive material that allows the HDD contractor to monitor and adjust the viscosity of the drilling fluid to achieve the desired carrying, and lubricating properties.

2.1 Additives

Additives to adjust the viscosity, improve hole integrity, prevent, or reduce fluid release may be added to the drilling fluid as required during the drilling operations. These additives may include clays, organic fibers, modified starches and non-reactive polymers. No petroleum based additives will be used. All potential additives will be identified in the final inadvertent return

plan for each site, and Material Safety Data Sheets for all additives will be provided in each site-specific inadvertent return plan.

No other materials will be included in the drilling mud without prior approval of the relevant environmental agencies.

2.2 Disposal

Drilling fluid is circulated continuously through-out the drilling process with the cuttings and spoils from the drilling operation removed in order to reuse and recycle the drilling fluid. Prior to drilling operations, the HDD contractor will identify qualified disposal at a landfill or off-site facility for disposal of the cuttings, spoils and excess drilling fluid.

Depending on permitting requirements, filtered and purified water may be disposed of on site with an approved discharge and other related environmental permits.

3.0 Design Considerations

ITC and its consultants have been and will be undertaking several steps during design to minimize the chances of an inadvertent release of drilling fluid.

3.1 Identify Soil and Subsurface Conditions

ITC and its consultants will undertake geotechnical investigations to identify the materials being drilled through, resistance to drilling operations and resistance to fluid migration.

3.2 Drill Design

ITC, through its design contractor, will prepare detailed design calculations and plans identifying the drill path, expected volumes, pipe installation stresses and pressures of fluid.

3.3 Additional Modeling for Lake Erie Shoreline Crossing

For the longer HDD borings crossing the Lake Erie shoreline, the drilling fluid will need to circulate at a higher pressure. For these areas site specific modeling will be performed to estimate the ability of the soils to withstand fluid migration (Hydrofracture Modeling). These models will be used in conjunction with the expected fluid pressures to confirm the drill installation depth.

4.0 Monitoring and Operations Plan

The Monitoring and Operations Plan is broken into the following conditions with corresponding monitoring and operational actions:

Table 4-1 Drilling Fluid Monitoring and Operations Plan Summary		
Condition	Status	Actions
Condition 1: Normal Drilling Conditions	Normal drilling fluid circulation is maintained.	• Perform routine collection of drilling fluid at endpoints • Perform routine drilling data collection • Conduct routine visual monitoring for surface releases.
Condition 2: Loss or Reduction of Circulation	Loss, or significant reduction, of fluid circulation.	• Notify regulatory agencies • Adjust drilling parameters in an effort to regain circulation • Increased visual monitoring for surface release • Continue drilling if no release is detected
Condition 3: Drilling Fluid Release and Remediation	Drilling fluid release is confirmed.	• Notify regulatory agencies • Monitor and document release area • Contain and collect release if feasible • Suspend HDD operations if containment is not feasible

4.1 Condition 1: Normal Drilling Conditions

The HDD Contractor will maximize recirculation of drilling fluid surface returns and provide solids control and fluid cleaning equipment of a configuration and capacity that can process surface returns and produce drilling fluid suitable for reuse.

ITC's Contractor will at all times provide and maintain instrumentation which will accurately locate the pilot hole, measure drill string axial and torsional loads, and measure drilling fluid discharge rate and pressure.

Representatives of regulatory agencies, including the Pennsylvania Department of Environmental Protection, will be provided access to these instruments and records of measurements upon request. A log of all recorded monitored information will be maintained at the drill rig site and will become a part of the construction record.

Routine visual monitoring under Condition 1 will consist of periodic visual inspections by the HDD Contractor personnel at least every 4 hours along the drilled alignment. For the Lake Erie shoreline crossings, inspection will be carried out on foot on land and by boat in the water. For the high quality waterway and surface obstacle crossings inspections will be made on foot.

The name of the inspector, time of the examination, and observations will be kept in a log at the drill rig site and will be available for inspection.

4.2 Condition 2: Loss or Reduction of Circulation

Condition 2 procedures will be implemented if the drilling fluid fails to circulate as expected. Drilling fluid circulation will be evaluated on the basis of comparing actual quantities against the planned quantities for the volume of fluid being recovered, drilling fluid pressures, and location of fluid recovered.

Complete recovery of all circulating drilling fluids is not expected. Soil naturally includes voids and low density areas. A portion of the fluid will fill the voids in the soils and sediments immediately adjacent to the borehole during the drilling process. An approximate amount of fluid that will be absorbed before Condition 2 begins will be estimated as part of the detailed design.

The following procedures will be implemented if a loss or significant reduction of drilling fluid circulation occurs.

- HDD Contractor will notify the Pennsylvania Department of Environmental Protection ("PaDEP') of the occurrence of Condition 2, and will advise PaDEP whether or not drilling is continuing under Condition 2.

- HDD Contractor will increase monitoring frequency from Routine to Focused monitoring. Focused monitoring consists of continuous monitoring of the drill alignment by personnel, who shall have no other duties. Sufficient personnel will be used to ensure that each portion of the alignment is inspected at least once every 30 minutes.

- HDD Contractor will immediately take steps to restore circulation. These steps will include, but not be limited to, the following:
    - Size the hole. Sizing (swabbing) involves withdrawing the drill string to mechanically clean the drilled hole.
    - Adjust drilling fluid viscosity and gelling properties to encourage annular flow and stabilize the hole structure.
    - HDD Contractor may elect to attempt the following adjustments in addition to the above steps.
        - Adding additional pre-approved filling or stabilizing materials to potentially seal fissures in the soil.
        - Adjust the drill cutting heads and speeds for potential soil pockets.

Once circulation is restored, drilling will continue under Condition 2 for a period of not less than eight (8) drilling hours. If a release is not identified, and loss or significant reduction of drilling fluid circulation does not re-occur, the HDD Contractor will notify regulatory agency representatives that drilling under Condition 1 has resumed.

HDD Contractor will keep PaDEP and other regulatory agency representatives notified on changes to circulation status, including if circulation has been restored or partially restored.

4.3 Condition 3: Drilling Fluid Release, Containment and Remediation

This section covers the general principles for Condition 3 and drilling fluid containment. More detailed information is included in Section 5. If a drilling fluid release is detected the following procedures will be implemented.

- HDD Contractor will immediately notify PaDEP that a fluid release has been detected.
- HDD Contractor will immediately begin containment efforts. See Section 5.0 for discussion of containment methods and equipment.
- HDD Contractor will begin steps to reduce released fluid volumes and pressures.
    - Size and swab the bore hole
    - Adjust drilling fluid viscosity and gel properties to restore circulation

    - Adding additional pre-approved filling or stabilizing materials to potentially seal fissures in the soil.

- Once containment has been established drilling will continue under condition 3. If the amount of the release occurring exceeds that which can be contained and collected drilling operations will be suspended until released volumes can be brought under control.

- Continue Focused Monitoring to ensure additional fluid releases have not occurred.

If the amount of any drilling fluid release, either on land or within the lake, exceeds that which can be feasibly contained and collected, drilling operations will be suspended and the HDD Contractor will notify ITC and PaDEP. Drilling will not resume until ITC and PaDEP have approved a plan for recommencing drilling.

Drilling fluid returns may stop as the drilling fluid consistency changes. If drilling fluid stops returning, the surface containment measures will be maintained in place and drilling will continue under Condition 2.

HDD Contractor will keep PaDEP and other regulatory agency representatives notified on changes to status, including if circulation has been restored, additional releases and containment status.

5.0 Containment Methods and Equipment

Containment methods and equipment will be based on the potential locations of the release and potential volume of fluid.

The plans below lay out basic principles. These plans will be refined by the HDD contractor considering the contractor's available equipment and the conditions and requirements for each individual site. The equipment required to execute the plan will be maintained on site during all drilling activities.

5.1 Lake Erie Shoreline crossing, in water

Drilling fluid is heavier than water and typical released at low velocities. This means that the easiest way to contain the fluid is to place barriers around the release location creating a sump around the release location and pump the fluid out of the sump.

Due to the depth of the water expected over the HDD alignment it is expected that a response boat with a diver on board will be required during all drilling activities.

Containment and capture of fluid already dispersed into the lake water is not practical and will not be attempted.

Specific barriers and equipment will be identified by the HDD contractor for the Lake Erie shoreline crossing.

5.2 Shoreline crossing, on land

As only a small amount of the alignment is on land for the shoreline crossing the spill prevention materials that will be kept at the drill site.

Containment on land will be by construction of a sump by excavating a pit approximately 6 foot square at the location of the release and pumping the contained fluid into the fluid circulation system.

The fluid released before containment was established will be contained with temporary barriers such as sand bags and then swept back into the containment sump or contained in low areas and vacuumed into holding tanks.

Specific barriers and equipment will be identified by the HDD contractor once contracted.

5.3 Waterway, in water

The waterways in the area are shallow enough to be waded across. Inspections will be from shore and on foot. Containment in water will be by constructing a small sump by installing barriers downstream from the release and pumping the fluid into the fluid circulation system. For smaller releases, a vacuum truck hose may be used to collect released fluids if the vacuum truck is able to keep up with the rate of release.

Containment and capture of drilling fluid will begin immediately on detection of fluid release using equipment including filter tubes and sediment traps pre-staged near the waterway. Complete containment and recovery of drilling fluid released before detection may not be feasible depending on the flow of waterway.

Specific barriers and equipment will be identified by the HDD contractor once contracted.

5.4 Waterway, on land

Containment on land will be by construction of a sump by installing temporary barriers such as sandbags around the release and pumping the contained fluid into the fluid circulation system.

The fluid released before containment was established will be contained with temporary barriers such as sand bags and then swept back into the containment sump or contained in low areas and

vacuumed into holding tanks. For smaller releases, a vacuum truck hose may be used to collect released fluids if the vacuum truck is able to keep up with the rate of release.

Specific barriers and equipment will be identified by the HDD contractor once contracted.

5.5 Surface Obstacle Crossing

Containment on land will be by construction of a sump by installing temporary barriers such as sandbags around the release and pumping the contained fluid into the fluid circulation system.

The fluid released before containment was established will be contained with temporary barriers such as sand bags and then swept back into the containment sump or contained in low areas and vacuumed into holding tanks. For smaller releases, a vacuum truck hose may be used to collect released fluids if the vacuum truck is able to keep up with the rate of release.

Specific barriers and equipment will be identified by the HDD contractor once contracted.

6.0 Remediation

If a fluid release occurs, the HDD contractor will contain and pump or vacuum up the fluid. On land the fluid that can not be recovered will be diluted and removed from vegetation by washing with water.

ATTACHMENT 2

Stream Identification and Wetland Delineation Report

LAKE ERIE CONNECTOR PROJECT
WATERBODY IDENTIFICATION AND WETLAND DELINEATION REPORT

Prepared for:
ITC Lake Erie Connector, LLC
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January 2016

LAKE ERIE CONNECTOR PROJECT
WATERBODY IDENTIFICATION AND
WETLAND DELINEATION REPORT

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1.0 INTRODUCTION

This Waterbody Identification and Wetland Delineation Report provides details about the portion of the ITC Lake Erie Connector Project located in the United States (U.S.) and the potential effects of the Project on waterbodies and wetlands. This report includes the results of the wetland and waterbody field delineations conducted to identify potential "Waters of the United States," as defined by the United States Army Corps of Engineers (USACE) (33 CFR §328.3), and "waters of the Commonwealth" as defined by the Pennsylvania Dam Safety and Water Obstructions Act and related regulations (25 Pa. Code Ch. 105) within the area of potential disturbance in areas that may be disturbed by the proposed underground cable and converter station installation.

The findings included in this report are based on review of publicly available mapping and field investigations conducted by HDR. Publicly available mapping included 7.5-minute United States Geological Survey (USGS) topographic quadrangles, soil survey maps, aerial photograph, and National Wetland Inventory (NWI) maps. Field investigations were conducted by experienced HDR personnel on August 4, 2014 through August 8, 2014, November 5 and 6, 2014, December 22, 2014, April 15 and 16, 2015, September 28, 2015, and December 30, 2015.

The environmental survey corridor included a 150-foot wide area centered on the cable route and surveys of the converter station boundary as defined by engineering requirements. The proposed construction corridor includes the construction workspace that will range between 40- and 75-feet in width, access roads, and potential laydown area. A map showing the location of cable and delineated wetlands and waterbodies is included in Appendix A.

2.0 PROJECT DESCRIPTION

The Lake Erie Connector Project (Project) is an independent electric transmission facility proposed by ITC Lake Erie Connector, LLC (ITC). The proposed Project is an approximately 72.4 mile (116.5 km) 1,000 megawatt (MW) +/-320 kilovolt (kV) high-voltage direct current (HVDC) bi-directional electric transmission interconnection, which is being built to transfer electricity between Canada and the United States. The HVDC transmission line will run from Nanticoke, Ontario, through the lakebed in Lake Erie to Springfield Township in Erie County, Pennsylvania, where it will make landfall. The transmission line will then run underground to a new converter station, which will be built as part of the Project (called the Erie Converter Station), in Conneaut Township in Erie County, Pennsylvania.

The HVDC transmission line consists of two transmission cables, one positively charged and the other negatively charged, along with a fiber optic cable for communications between the converter stations. In the U.S., the transmission line elements of the Project consist of:

- U.S., HVDC underwater (from US border to Erie County landfall) - 35.4 mi (57.0 km)
- U.S., HVDC underground (from landfall to Erie Converter Station) - 7.1 mi (11.4 km)
- U.S., HVAC underground (from Erie Converter Station to Erie Waste Substation) 2,802 feet

The majority of the proposed on-land U.S. cable route uses existing roadway corridors to minimize the creation of new rights-of-way (ROWs). The cable system will be buried on land using conventional open trenching methods, with trenchless techniques used in situations where conventional trenching is inappropriate because of the potential for unacceptable environmental impacts or public inconvenience.

The Erie Converter Station will convert +/- 320 kV DC power to 345 kV AC power or vice-versa and will connect to a nearby point of interconnection (POI) at the existing Penelec Erie West Substation that is part of the PJM grid [1]. The final route for the underground 345 kV AC line that will interconnect the Converter Station and adjacent Erie West Substation has not yet been determined, but will range from approximately 2,802 feet in length.

3.0 REGULATORY AUTHORITY

Activities conducted in navigable waters of the United States are subject to regulation by the USACE under Section 10 of the Rivers and Harbors Act of 1899. The USACE Ordinary High Water Mark (OHWM) is a jurisdictional benchmark for administering its regulatory program in navigable waterways under Section 10 of the Rivers and Harbors Act. The OHWM is the location that represents the approximate line on the shore established by fluctuations of water as indicated by physical characteristics such as shelving, destruction of terrestrial vegetation, presence of litter or debris, or changes in the character of the soil.

Activities involving the placement of fill into certain wetlands and other bodies of water in Pennsylvania are regulated by the USACE through Section 404 of the federal Clean Water Act (CWA). Section 404 of the CWA grants the United States Environmental Protection Agency (USEPA) and USACE regulatory power over "Waters of the United States" as defined by 33 CFR §§328.3 and 329.4: "Traditional navigable waters; interstate waters, including interstate wetlands; the territorial seas; impoundments of traditional navigable waters, interstate waters, including interstate wetlands, the territorial seas, and tributaries, as defined, of such waters; tributaries, as defined, of traditional navigable waters, interstate waters, or the territorial seas; and adjacent waters, including adjacent wetlands." Waterbodies under the jurisdiction of the USACE include Traditional Navigable Waterways (TNWs), which include all of the navigable waters of the United States as defined in 33 CFR 329, and by numerous federal court decisions. In addition, non-navigable tributaries of TNWs that are relatively permanent waterways (RPWs) are also considered to be jurisdictional waters of the United States. Under court interpretations, the USACE also can assert jurisdiction over non-navigable tributaries that have a channel and OHWM but do not flow year round or have continuous flow at least seasonally if they demonstrate a significant nexus with a TNW.

In Pennsylvania, activities involving water obstructions or encroachments in, along, or across watercourses, wetlands and other bodies of water are also subject to regulation by the Pennsylvania Department of Environmental Protection (PADEP) adopted pursuant to the Pennsylvania Dam Safety and Encroachments Act and regulations contained in 25 Pa. Code

[1] PJM Interconnection is the regional transmission organization that coordinates electricity movement in 13 U.S. states and the District of Columbia.

Chapter 105. The Dam Safety and Encroachments Act defines a "body of water" as any natural or artificial lake, pond, reservoir, swamp, marsh, or wetland. Under Chapter 105, regulated waters of Pennsylvania are defined as "watercourses, streams, or bodies of water and their floodways wholly or partly within or forming part of the boundary of this commonwealth." PADEP regulates activities both within a wetland or watercourse, and also structures and fill within stream floodways (defined as the floodway mapped on FEMA maps, or where such maps are not available, an area presumed to extend 50 feet from the top of stream bank on either side of the waterway).

4.0 FIELD INVESTIGATION METHODS

The wetland and waterbody delineations were conducted August 4, 2014 through August 8, 2014, November 5 and 6, 2014, December 22, 2014, April 15 and 16, 2015, September 28, 2015, and December 30, 2015. Investigations indicate the presence of 19 wetlands, 20 streams, Lake Erie, and one pond within the environmental survey limits of the proposed underground cable route. The locations of these features are shown in Appendix A.

The wetland delineation was conducted following the methodology set forth in the USACE Wetland Delineation Manual (1987) and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northeast and North Central Region Version 2.0 (January 2012). Hydrology, soils, and vegetation were examined throughout the survey corridor. Wetland boundaries and streams were marked with pink or blue flags labeled with the wetland or stream identification number. All flagged locations were field-located using a sub-meter global positioning system (GPS) unit.

A representative test site was chosen at each wetland, where hydrology, soil, and vegetation were evaluated. Evidence of wetland hydrology was noted by identifying direct and indirect indicators of hydrologic influence. Soil borings were extracted with an auger to a depth sufficient to document an indicator or confirm the absence of hydric soil indicators. For each plant community, the percent aerial cover of dominant plants was estimated and hydrophytic status was determined using the 2014 National Wetland Plant List.

Streams that occurred within the environmental survey limits were classified as perennial, intermittent, or ephemeral. The types of substrate and the amount of water present were also recorded. The stream bank height and width were estimated from the top of bank (TOB) and the OHWM was noted and recorded using a sub-meter GPS unit. The OHWM was determined by observing the characteristics such as: natural line impressed on the bank, shelving, changes in the soil character, destruction of terrestrial vegetation, presence of litter and debris, wracking, vegetation matted down, bent, or absent, sediment sorting, leaf litter disturbed or washed away, scour, deposition, bed and banks, water staining, and changes in plant community. From the perspective of USACE and DEP jurisdiction, channels that parallel the roadway or railroad were identified as upland drainage features and were not considered to be jurisdictional unless they had an identifiable OHWM, were identified on the USGS topographic map, or represented a presumed relocation of a natural channel.

5.0 RESULTS OF WETLAND INVESTIGATION

Four basic types of wetlands were identified along the Project corridor:

- Palustrine Emergent (PEM) – wetlands that are characterized by erect, rooted, herbaceous, hydrophytes, excluding mosses and lichens (Cowardin, et al., 1979).
- Palustrine Scrub-Shrub (PSS) – wetlands that are dominated by woody vegetation less than 20-feet tall (Cowardin, et al., 1979).
- Palustrine Forested (PFO) – wetlands that are dominated by woody vegetation that is at least 20-feet tall (Cowardin, et al., 1979).
- Palustrine Unconsolidated Bottom (PUB) - wetlands and deepwater habitats with at least 25% cover of particles smaller than stone, and a vegetative cover less than 30% (Cowardin, et al., 1979).

Table 5.0-1 summarizes the results of the wetland field investigation. Each wetland is identified by a unique HDR Engineering, Inc. (HDR) identifier assigned during the field investigation.

Table 5.0-1 Wetlands Identified within the Underground Segment

Unique Identifier	Dominant NWI Classification	Associated Stream	Latitude; Longitude	Proposed to be Crossed by the Project
WPA-KAS-001	PFO	Abutting SPA-KAS-001 (UNT to Lake Erie)	42.005855; -80.398276	Yes
WPA-KAS-002	PFO, PEM	Adjacent to SPA-KAS-001 (UNT to Lake Erie)	42.006629; -80.399204	Yes
WPA-KAS-004	PFO	Adjacent to SPA-KAS-006 (UNT to Lake Erie)	41.996914; -80.388225	Yes
WPA-KAS-012	PFO	Abutting Unidentified Stream (UNT to Crooked Creek)	41.961778; -80.377322	Yes
WPA-KAS-018	PEM	Abutting Unidentified Stream (UNT to Crooked Creek)	41.935102, -80.381133	Yes - AC Cable route
WPA-KAS-023	PFO	Adjacent to Crooked Creek	41.937101; -80.380047	Yes
WPA-KAS-028	PEM, PSS, PFO	Abutting SPA-KAS-016 (Crooked Creek)	41.966177; -80.388335	Yes
WPA-KAS-029	PEM, PSS	Abutting SPA-KAS-017 (UNT to Crooked	41.943935; -80.374931	Yes

Unique Identifier	Dominant NWI Classification	Associated Stream	Latitude; Longitude	Proposed to be Crossed by the Project
		Creek)		
WPA-KAS-030	PEM	Isolated	41.951858; -80.369678	Yes
WPA-KAS-031	PFO, PEM	Abutting Unidentified Stream (UNT to Crooked Creek)	41.95351; -80.370725	Yes
WPA-KAS-032	PEM	Abutting SPA-KAS-018 (UNT to Crooked Creek)	41.957414; -80.373884	Yes
WPA-KAS-034	PEM	Abutting SPA-KAS-020 (UJNT to Crooked Creek)	41.978265; -80.388002	Yes
WPA-KAS-035	PEM	Abutting SPA-KAS-021 (UNT to Crooked Creek)	41.983645; -80.387792	Yes
WPA-KAS-036	PFO	Adjacent to SPA-KAS-026 (UNT to Crooked Creek)	41.964316; -80.38818	Yes
WPA-KAS-037	PUB	Isolated	41.969176; -80.388424	No
WPA-KAS-038	PEM	Isolated	41.970097; -80.38846	Yes
WPA-KAS-039	PFO	Abutting SPA-KAS-019 (Crooked Creek)	41.973231; -80.389591	No
WPA-KAS-040	PEM	Abutting Unnamed Tributary to Crooked Creek	41.935591: -80.378455	No
WPA-KAS-041	PEM	Abutting Unnamed Tributary to Crooked Creek	41.934894, -80.382307	No

6.0 DESCRIPTION OF WETLANDS

Wetlands delineated within the survey corridor are described below. Photographs of each wetland are included in Appendix B and datasheets are provided in Appendix C. Potential Project impacts to wetlands are shown in Table 3 and 4, and discussed in Section 9 of this report.

Wetland WPA-KAS-001 is a palustrine forested wetland (PFO) located in a depression. The wetland is bound on the south by a railroad track. The wetland is hydrologically connected to stream SPA-KAS-001 and wetland WPA-KAS-002. The hydrologic characteristics of the wetland include a high water table, saturated soils, and hydrogen sulfide odor. National Wetland Inventory (NWI) mapping lists this area as a PFO wetland as well as the field data collected. The dominant vegetation includes eastern cottonwood (*Populus deltoides*), slippery elm (*Ulmus rubra*), spicebush (*Lindera benzoin*), spotted jewelweed (*Impatiens capensis*), wrinkleleaf goldenrod (*Solidago rugosa*), and sensitive fern (*Onoclea sensibilis*). The soils exhibit a depleted matrix.

Wetland WPA-KAS-002 is a wetland complex consisting of a PFO and a palustrine emergent (PEM) wetland. The two types ungulate and are very extensive in the area west of the landowner access road. The area east of the landowner access road is also dominated by wetland WPA-KAS-002, but the stream, SPA-KAS-001, collects a lot of the moisture and limits the extent of the wetlands. The hydrologic characteristics of the wetland include surface water, high water table, and saturated soils. The PFO wetland is dominated by eastern cottonwood, green ash (*Fraxinus pennsylvanica*), spicebush, Japanese honeysuckle (*Lonicera japonica*), spotted jewelweed, and fowl manna grass (*Glyceria striata*). The PEM portion of the wetland has vegetation dominated by cottongrass bulrush (*Scirpus cyperinus*), boneset (*Eupatorium perfoliatum*) and fowl manna grass. The soils exhibit a depleted matrix.

Wetland WPA-KAS-004 is a PFO wetland located at the edge of Townline Road and West Middle Road. The roads are elevated, therefore they bisect and interrupt the wetland. The wetland on the east and west of Townline Road is connected via stream SPA-KAS-006. The hydrologic characteristics of this wetland include surface water, a high water table, saturated soils, water marks, sediment deposits, water-stained leaves, and moss trimmed lines. The vegetation is dominated by red maple (*Acer rubrum*), slippery elm, eastern cottonwood, silky dogwood (*Cornus ammomum*), and spotted jewelweed. The soils exhibit a depleted matrix.

Wetland WPA-KAS-012 is a PFO wetland located in a depression along a former railroad bed crossing of Springfield Road. The wetland drains into a ditch and passes through a culvert under Springfield Road. This wetland abuts a local stream located outside the survey corridor. The wetland hydrology characteristics include surface water, a high water table, saturated soils, water marks, and water-stained leaves. The deciduous vegetation is dominated by red maple, white ash (*Fraxinus americana*), multiflora rose (*Rosa mutiflora*), and spotted jewelweed. The soils exhibit a loamy gleyed matrix.

Wetland WPA-KAS-018 is a PEM wetland located within a regularly maintained transmission line ROW. The regular vegetation maintenance is apparent due to the dead dogwood shrubs within the wetland. The wetland connects to a PSS and a PFO wetland located to the north of the

delineated area. The wetland hydrology is disturbed due to prior construction but consists of surface water, a high water table, and saturated soils. The vegetation is dominated by deer tongue rosette grass (*Dichanthelium clandestium*), sensitive fern, and cotton grass bulrush (*Scirpus cyperinus*). The soils exhibit a depleted matrix.

Wetland WPA-KAS-023 is a PFO wetland. Due to the relatively large size, multiple data points were taken. The hydrology characteristics include surface water, a high water table, saturated soils, and water stained leaves. The vegetation is dominated by red maple, green ash, multiflora rose, spotted jewelweed, poison ivy, and sensitive fern. The soils exhibit a loamy gleyed matrix.

Wetland WPA-KAS-028 is a wetland complex containing PEM, PSS, and PFO portions. The wetland abuts stream SPA-KAS-016. The wetland is located in a valley with saturated soils. The PEM portion of the wetland has hydrology indicators including high water table, saturated soils, drainage patterns, geomorphic position, and a microtopic relief. The emergent vegetation is dominated by black willow, fowl manna grass, Canadian goldenrod, and soft rush. The PSS portion of the wetland has hydrology indicators including surface water, saturated soils, water marks, water-stained leaves, drainage patterns, and microtographic relief. The vegetation is dominated by red osier dogwood (*Cornus alba*), and silky dogwood. The forested portion of the wetland contains hydrology indicators including surface water, high water table, saturated soils, water-stained leaves, and moss trimmed lines. The vegetation of the forested wetland is dominated by red maple, sweet birch (*Betula lenta*), American sycamore (*Platanus occidentalis*), multiflora rose, sensitive fern, and soft rush. All portions of the wetland (PEM, PSS, PFO) have hydric soils indicated by the presence of a depleted matrix.

Wetland WPA-KAS-029 is a wetland complex that is a PEM wetland on the western side of the road and a PSS wetland on the eastern side of the road. A culvert connects the two sides for high flow periods and a defined channel, stream SPA-KAS-017 begins on the eastern side of the road. The PEM portion of the wetland has saturated soils, drainage patterns, and microtopographic relief. The vegetation is dominated by silky dogwood, fowl manna grass, and erect knotweed (*Polygonum erectum*). The PSS portion of the wetland is dominated by silky dogwood and multiflora rose.

Wetland WPA-KAS-030 is a PEM wetland that appears to be isolated. It is located in a roadside ditch along interstate I-90. The wetland hydrology indicators include surface water, saturated soils, and drainage patterns visible on aerial imagery. The vegetation is dominated by broadleaf cattails and flat top goldentop (*Euthamia graminifolia*).

Wetland WPA-KAS-031 is a wetland complex located on both sides of Springfield Road. The western side of the road is a PEM wetland with hydrology indicators including high water table, saturated soils, drainage patterns, and microtopographic relief. The vegetation is dominated by broadleaf cattails. The soils indicate a redox dark surface. The PFO portion of the wetland is located on the eastern side of Springfield Road. The hydrology indicators include high water table, saturated soils, moss trim lines, saturation visible on aerial imagery, and geomorphic position. The vegetation is dominated by red maple, eastern cottonwood, red osier dogwood, reed canary grass (*Phalaris arundinacea*), and common duckweed (*Lemna minor*). The forested

wetland seems to be bordered by the road and two residential areas. The soils indicate a redox dark surface.

Wetland WPA-KAS-032 is a PEM wetland located along the eastern side of Springfield Road. The wetland appears to be located in a derelict agricultural field. The hydrology indicators include saturated soils and microtopographic relief. The vegetation is dominated by reed canary grass, European buckthorn (*Rhamnus cathartica*), and Canadian goldenrod. The soils exhibit a depleted matrix.

Wetland WPA-KAS-034 is a PEM wetland located within a valley crossed by Townline Road. The wetland abuts the perennial stream SPA-KAS-020. The hydrology indicators include surface water, high water table, saturated soils, water marks, sediment deposits, water stained leaves, and microtopographic relief. The vegetation is dominated by multiflora rose, tearthumb (*Persicaria sagitata*), and spotted jewelweed. Most of the wetland area is ponded and lacking vegetation. The soils exhibit a depleted matrix.

Wetland WPA-KAS-035 is a PEM wetland located within a valley crossed by Townline Road. The wetland abuts the perennial stream SPA-KAS-021. The hydrology indicators include surface water, a high water table, saturated soils, water stained leaves, hydrogen sulfide odor, drainage patterns, and microtopographic relief. The wetland vegetation is minimal on the southern side of the stream. The northern side of SPA-KAS-021 is dominated by common reed (*Phragmites austalis*) and fowl manna grass. The soils have a hydrogen sulfide odor and a sandy gleyed matrix.

Wetland WPA-KAS-036 is a PFO wetland adjacent to stream SPA-KAS-025. The wetland is located north of Springfield Road. The hydrology indicators include surface water, a high water table, saturated soils, water marks, water stained leaves, drainage patterns, and moss trimmed lines on trees. The vegetation is dominated by red maple, privet (*Ligustrum japonicum*), and fowl manna grass. The soil has a hydrogen sulfide odor and 5 cm of mucky peat.

Wetland WPA-KAS-037 is a PUB wetland located along the edge of a farm road and has tire tracks leading into the wetland. It appears to be isolated from other bodies of water. The wetland has at least twelve inches of standing water and little to no vegetation growing in it. The hydrology indicators include surface water, high water table, saturated soils, and a hydrogen sulfide odor. The soils have a hydrogen sulfide odor.

Wetland WPA-KAS-038 is a PEM wetland located close to wetland WPA-KAS-037. The wetland appears to be isolated from other bodies of water. The wetland is located in an area impacted by a farm road. The wetland connects to a PSS portion to the western side of the delineated area. The PEM wetland hydrology indicators include saturated soils. The vegetation is dominated by tearthumb and reed canary grass. The soils exhibit a depleted matrix.

Wetland WPA-KAS-039 is a PFO wetland located in a valley below a bridged portion of Ridge Road. The wetland is adjacent to Crooked Creek. The wetland is bordered by the fill of Ridge Road and the wetland continues outside of the study corridor. The hydrology indicators include surface water, a high water table, saturated soils, water marks, and oxidized rhizospheres on

living roots. The dominant vegetation includes wrinkleleaf goldenrod, red maple, and creeping jenny (*Lysimachia nummularia*). The soils indicate a depleted matrix.

Wetland WPA-KAS-040 is a PEM wetland located beneath the existing transmission line near the Erie West Converter Station. The wetland is significantly disturbed due to regular maintenance of the vegetation. The wetland hydrology indicators include surface water, high water table, saturated soils, water-stained leaves, and drainage patterns. The dominant vegetation includes silky dogwood (*Cornus amomum*) and common reed. The soils indicate a depleted matrix.

Wetland WPA-KAS-041 is a PEM wetland located within the existing transmission line near the Erie West Converter Station. The wetland is significantly disturbed due to the regular maintenance of the vegetation. The wetland hydrology indicators include surface water, high water table, saturated soils, water stained leaves, and drainage patterns. The dominant vegetation includes

7.0 RESULTS OF THE WATERBODY IDENTIFICATION

Four (4) types of waterbodies were identified within the survey corridor:

- **Ephemeral** – An ephemeral stream has flowing water only during and for a short duration after precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.
- **Intermittent** - An intermittent stream has flowing water during certain times of the year, when groundwater provides water for stream flow. During dry periods, intermittent streams may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.
- **Perennial** - A perennial stream has flowing water year-round during a typical year. The water table is located above the stream bed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.
- **Ponds** – A pond is an impoundment with still surface water, often manmade, usually smaller than a lake.

A total of 20 streams were identified within the survey corridor. Table 7.0-1 summarizes the results of the waterbody field investigation. Names of waterbodies are as identified on USGS 7.5-minute topographic quad maps. In addition, one pond and Lake Erie were identified within the survey corridor.

Table 7.0-1 Waterbodies Identified within the Underground Segment.

Unique Field Identifer[1]	Waterbody	Stream Type	Latitude, Longitude	Chapter 93 Classification[2]	Class A Wild Trout Waters[3], Wild or Scenic River[4], Streams that Support Natural Reproduction of Trout[5]	Stocked Trout or Approved Trout Waters[6]	Potential USACE Classification[7]	Average Bank-to-Bank Width (feet)	Ordinary High Water Mark (feet)	Crossed by Preferred Route
SPA-KAS-001	UNT to Lake Erie	Perennial	42.010269; -80.401812	CWF, MF	No	No	RPW	20	0.67	No
SPA-KAS-002	UNT to Lake Erie	Perennial	42.005861; -80.393534	CWF, MF	No	No	RPW	5	0.50	Yes
SPA-KAS-004	UNT to Lake Erie	Perennial	42.006041; -80.387711	CWF, MF	No	No	RPW	5	0.33	Yes
SPA-KAS-005	UNT to Lake Erie	Perennial	41.998203; -80.38788	CWF, MF	No	No	RPW	10	1.00	Yes
SPA-KAS-006	UNT to Lake Erie	Perennial	41.996566; -80.387871	CWF, MF	No	No	RPW	5	2.00	Yes
SPA-KAS-016	Crooked Creek Crossing #1	Perennial	41.942151; -80.374538	HQ-CWF, MF	No	Yes	RPW	8	1.00	Yes
SPA-KAS-017	UNT to Crooked Creek	Intermittent	41.944013; -80.374683	HQ-CWF, MF	No	Yes	RPW	1	0.17	Yes
SPA-KAS-018	UNT to Crooked Creek	Intermittent	41.957231; -80.373775	HQ-CWF, MF	No	Yes	RPW	3	0.17	Yes
SPA-KAS-020	UNT to Crooked Creek	Perennial	41.978277; -80.387896	HQ-CWF, MF	No	Yes	RPW	3	0.50	Yes
SPA-KAS-021	UNT to Crooked Creek	Perennial	41.983685; -80.388018	HQ-CWF, MF	No	Yes	RPW	3.5	0.50	Yes
SPA-KAS-022	UNT to Crooked Creek	Perennial	41.973788; -80.387212	HQ-CWF, MF	No	Yes	RPW	2	2.00	Yes
SPA-KAS-023	UNT to Crooked Creek	Ephemeral	41.973291; -80.387088	HQ-CWF, MF	No	Yes	Non-RPW	5	0.50	No
SPA-KAS-024	UNT to Crooked Creek	Intermittent	41.973008; -80.386727	HQ-CWF, MF	No	Yes	RPW	2	0.50	No
SPA-KAS-025	UNT to Crooked Creek	Intermittent	41.966177; -80.388335	HQ-CWF, MF	No	Yes	RPW	3	0.17	Yes
SPA-KAS-026	UNT to Crooked Creek	Perennial	41.963631; -80.380427	HQ-CWF, MF	No	Yes	RPW	4	0.50	No
SPA-KAS-027	UNT to Crooked Creek	Perennial	41.941864; -80.375192	HQ-CWF, MF	No	Yes	RPW	2	0.25	No
SPA-KAS-028	UNT to Crooked Creek	Perennial	41.937924; -80.377380	HQ-CWF, MF	No	Yes	RPW	0.5	0.17	No
SPA-KAS-029	UNT to Crooked Creek	Perennial	41.938034; -80.377811	HQ-CWF, MF	No	Yes	RPW	1.25	0.5	No
SPA-KAS-030	UNT to Crooked Creek	Ephemeral	41.974256; -80.387413	HQ-CWF, MF	No	Yes	Non-RPW	2	0.25	Yes
SPA-KAS-031	UNT to Crooked Creek	Ephemeral	41.938034; -80.377811	HQ-CWF, MF	No	Yes	Non-RPW	0.5	0.25	Yes
PPA-KAS-002	Manmade Pond	-	41.941263; -80.374416	HQ-CWF, MF Watershed	No	No	-	-	-	Yes
Lake Erie	-	-		CWF	No	No	-	-	-	Yes

Notes: UNT = unnamed tributary HQ-CWF = high quality, coldwater fisheries MF = migratory fishery passageway RPW = relatively permanent water

1. Unique identifier assigned to feature during field surveys and correlates with mapping nomenclature.
2. Chapter 93 Classification based on Chapter 93 Water Quality Standards available at: http://www.pacode.com/secure/data/025/chapter93/chap93toc.html. Accessed August 2014.
3. Class A Wild Trout Waters are based on the PA Fish and Boat Commission's Class A Wild Trout Waters created December 16, 2013. Available at: http://fishandboat.com/classa.pdf. Accessed August 2014.
4. Wild and Scenic Rivers based on the National Wild and Scenic River System available at: http://www.rivers.org/. Accessed August 2014.
5. Natural trout producing waters are based on the PA Fish and Boat Commission's Stream Sections Supporting Natural Reproduction of Trout. May 2014. Available at: http://fishandboat.com/trout_repro.htm. Accessed August 2014.
6. Approved Trout Waters are based on the PA Fish and Boat Commission's Regulated Trout Waters website available at: http://fishandboat.com/fishpub/summary/troutregs_nw.htm. Accessed August 2014.
7. Jurisdictional classification must be confirmed by USACE.

8.0 DESCRIPTIONS OF THE WATERBODIES

Stream SPA-KAS-001 is an unnamed perennial tributary to Lake Erie. The source of the stream is a groundwater seep, GWPA-KAS-001, that produces a high volume of water. Where it crosses the lake bluff, the stream flows relatively straight until it comes close to Lake Erie. The lake is lined by bluffs and at this point erosion on the stream banks is extensive. The stream is about 40 feet below the level of the ground. The stream begins along the east side of the access road with a width of about three feet, flows through wetland WPA-KAS-002, and increases in width until it reaches Lake Erie.

Stream SPA-KAS-002 is an unnamed perennial tributary to Lake Erie. The stream crosses Pennsylvania Route 5 (West Lake Road) via a ten foot by twelve foot box culvert. The stream flows through forested upland areas. Small fish and macroinvertebrates were observed at the time of survey. The average bank to bank width is five feet and the ordinary high water mark (OHWM) is located at approximately six inches from the stream bottom.

Stream SPA-KAS-004 is an unnamed perennial stream that flows through an agricultural field, and which then flows under Townline Road via a 36-inch corrugated plastic culvert. The stream is mowed and maintained up to the banks. The bank to bank width of the stream is five feet and the OHWM is located at approximately four inches from the stream bottom.

Stream SPA-KAS-005 is a perennial unnamed tributary to Stream SPA-KAS-002 that flows into Lake Erie. The stream flows between agricultural fields and then flows under Townline Road via a 24-inch corrugated plastic culvert. The stream has a forested buffer that includes species such as black willow. Fringe wetlands are located within the stream channel. The stream is approximately ten feet from bank to bank with an OHWM at approximately one foot from the stream bottom.

Stream SPA-KAS-006 is a perennial unnamed tributary to Lake Erie that flows through wetland WPA-KAS-004. The stream is very defined on the west side of Townline Road where it flows through wetland WPA-KAS-004. To the east, the stream is faintly defined because it is wetland WPA-KAS-004 that contains standing water. There is a tributary to stream SPA-KAS-006 that flows along the edge of wetland WPA-KAS-004 and Townline Road. The average bank to bank width is five feet and the OHWM is observed at two feet from the stream bottom.

Stream SPA-KAS-016 is the perennial stream Crooked Creek. Crooked Creek was identified multiple times within the survey corridor. One of the stream crossings crosses Lexington Road via a large culvert. The stream is braided on the western side of the road and meanders through a valley on the eastern side of the road. Both sides of the stream have wetlands abutting. The western side of the road contains various types of wetlands, PEM and PSS. The eastern side of the road is dominated by PEM wetlands. Wetland details are provided in the summary for WPA-KAS-028. The stream is approximately eight feet wide with an OHWM located at one foot from the stream bottom. The next time the stream was identified within the survey corridor is near the Ridge Road/State Route 20 crossing. The stream flows in the base of a valley

Stream SPA-KAS-017 is an intermittent unnamed tributary to Crooked Creek. The stream begins on the eastern side of Lexington Road where it appears culverts feed the channel. No flow was noted on the other side of the culverts. The stream meanders through a wooded valley with an abutting wetland, WPA-KAS-029. The stream is approximately one foot wide with an OHWM located at two inches from the stream bottom.

Stream SPA-KAS-018 is an intermittent unnamed tributary to Crooked Creek. The stream flows through a farm field and next to a residential house. The stream abuts the wetland WPA-KAS-032. The stream crosses Springfield Road through a culvert. The average bank to bank width is three feet and the OHWM was observed at two inches from the stream bottom.

Stream SPA-KAS-020 is a perennial unnamed tributary to Crooked Creek. The stream flows under Townline Road via a culvert. The portion of the stream located on the eastern side of the road is abutting wetland WPA-KAS-034. The average bank to bank width is three feet and the OHWM is located at six inches from the stream bottom.

Stream SPA-KAS-021 is a perennial unnamed tributary to Crooked Creek. This stream flows under Townline Road via a culvert. The stream is narrow (approximately three feet) and abuts wetland WPA-KAS-035 on the eastern side of the road. On the western side of the road, the stream enlarges to approximately 30 feet wide.

Stream SPA-KAS-022 is a perennial unnamed tributary to Crooked Creek. The stream source appears to be runoff from a paved area. The water flows through a channel that is diverted under a farm road via a culvert. The stream is approximately two feet bank to bank width and an OHWM is visible at two inches from the stream bottom.

Stream SPA-KAS-023 is an ephemeral unnamed tributary to Crooked Creek that flows along a farm road. The stream is located at the toe of slope where the hill meets the elevated road. The stream is covered in leaves, but beneath the leaves is a very low flow stream. The average bank to bank width is five feet and the OHWM is observed at six inches from the stream bottom.

Stream SPA-KAS-024 is an intermittent unnamed tributary to Crooked Creek. The stream is located along a slope where it begins and conveys water into the valley of Crooked Creek. The stream bank to bank width is two feet and the OHWM is located at six inches from the stream bottom.

Stream SPA-KAS-025 is an intermittent unnamed tributary to Crooked Creek. The stream begins outside of the study corridor as a natural channel that discharges water from WPA-KAS-036. The stream crosses a farm access road via a culvert and continues outside of the study corridor. The stream average bank to bank width is three feet and the OHWM is observed at two inches from the stream bottom.

Stream SPA-KAS-026 is a perennial unnamed tributary to Crooked Creek. The stream crosses Springfield Road via a culvert. The stream is located next to a field used for agricultural purposes as well as a shrubby and overgrown area that does not appear to be utilized for

anything. The stream is an unnamed tributary to Crooked Creek. The average bank to bank width is four feet and the OHWM is located at approximately six inches from the stream bottom.

Stream SPA-KAS-027 is a perennial unnamed tributary to Crooked Creek. The stream is located in a valley and is sourced from a drainage culvert beneath the adjacent agricultural field. The stream meanders through wetland WPA-KAS-028. The average bank to bank width is two feet and the OHWM is located at three inches from the stream bottom.

Stream SPA-KAS-028 is a perennial unnamed tributary to Crooked Creek. The stream begins at a culvert that drains the agricultural field. The stream flows through a wetland area and out of the study corridor. The average bank to bank width is six inches and the OHWM is located at two inches from the stream bottom.

Stream SPA-KAS-029 is a perennial unnamed tributary to Crooked Creek. The stream flows also begins as a drainage area on the agricultural field, meanders through a forested wetland, and then drains into SPA-KAS_028. The average bank to bank width of the stream is 1.25 feet and the OHWM is located six inches from the stream bottom.

Stream SPA-KAS-030 is a ephemeral unnamed tributary to Crooked Creek. The stream source is roadside drainage from Route 20/Ridge Road and flows into SPA-KAS-023 after a few feet. The stream is located in a steep valley with disturbance on both sides of the stream banks. To the west is a gravel lot and to the east is a hill side storage area for vehicles and equipment. The average bank to bank width is six inches and the OHWM is located at two inches from the stream bottom.

Stream SPA-KAS-031 is an ephemeral unnamed tributary to Crooked Creek. The stream is located in a fallow field and appears to be impacted by manmade maintenance activities as well as dirt bikes. The stream flows through a culvert. The average bank to bank width is six inches and the OHWM is located at two inches.

Pond PPA-KAS-002 is a pond located in the front of a residential house. The pond appears to be man-made.

Lake Erie is located at the northern most end of the United States side of the Project. The shore to lake transition is located west of the Erie Bluffs State Park. The interphase at the study corridor is characterized by a 90-foot bluff.

9.0 SUMMARY

Wetland and waterbodies delineations were conducted by HDR personnel on August 4, 2014 through August 8, 2014, November 5 and 6, 2014, December 22, 2014, April 15 and 16, 2015, September 28, 2015, and December 22, 2015. Environmental surveys were conducted along a 150-foot wide corridor centered on the proposed transmission line route. Investigations indicated the presence of 17 wetlands, 21 waterbodies, one pond, and Lake Erie. Out of the 17 wetlands, 7 are PEM, 6 are PFO, and 4 are wetlands that contain multiple NWI types. The 21 streams include: 14 perennial streams, 4 intermittent streams, and 3 ephemeral streams. In addition one pond and Lake Erie were identified in the study corridor.

Statements in this document pertaining to the jurisdictional classification of streams and wetlands with regards to USACE and PADEP regulation represent the opinion of HDR and are based on the present guidelines.

10.0 REFERENCES

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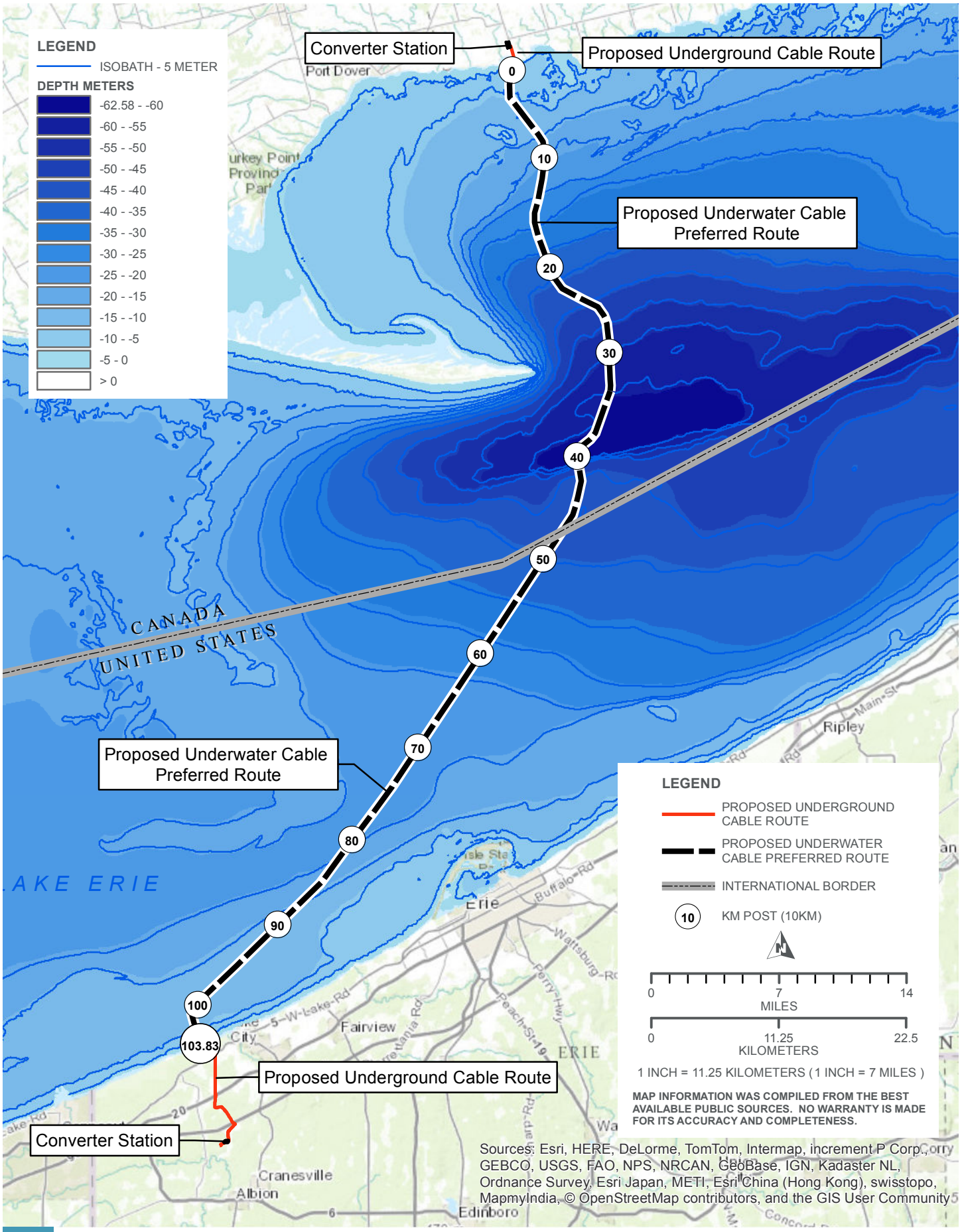
Appendix A
Figures
Project Location Map
Resource Map



LAKE ERIE CONNECTOR, LLC

PROPOSED PROJECT ROUTE
LAKE ERIE CONNECTOR PROJECT

DECEMBER 2015

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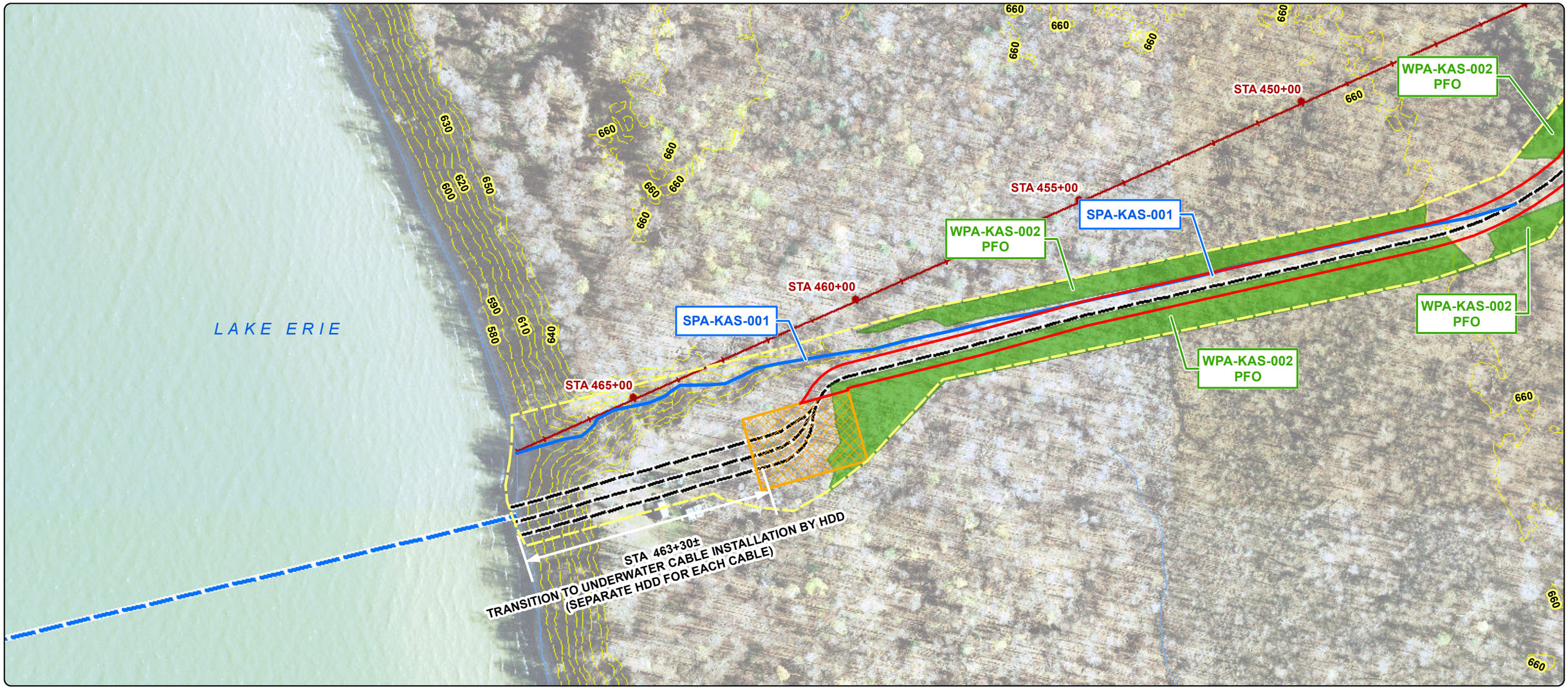

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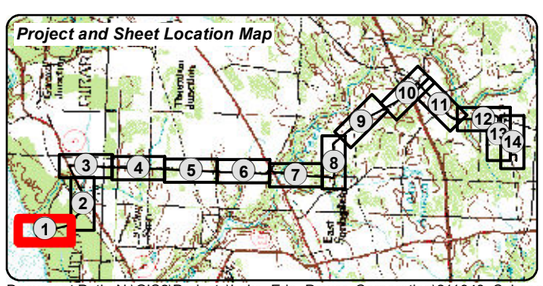
Project and Sheet Location Map



- Proposed Underground Cable Route
- Proposed AC Cable Route
- Proposed Underwater Cable Route
- Cable Route LOD
- Construction Laydown LOD
- Proposed Converter Station Site

Wetlands
- PUB
- PSS
- PFO
- PEM

- Env. Field Survey Corridor

Wetland Shovel Test
- Upland
- Wetland
- River | Stream
- Pond

- US Highway
- US Route
- State Route
- Local Road
- Railroad
- PASDA River | Stream
- Contour (10ft.)

Map information was compiled from the best available public sources. No warranty is made for its accuracy and completeness.

ALIGNMENT MAPS
ERIE COUNTY, PENNSYLVANIA

Page 1 of 14

200 100 0 200 Feet

1 inch = 200 feet (11" X 17")

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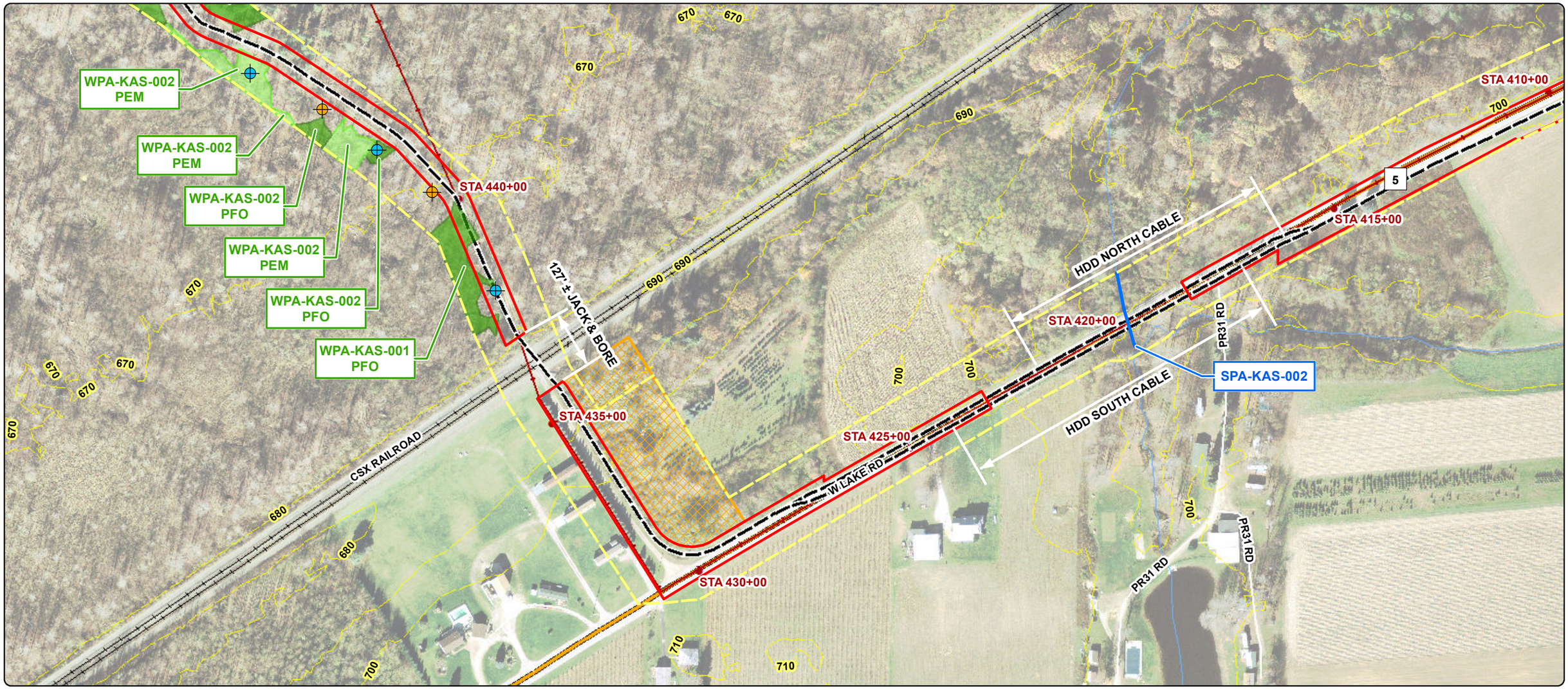

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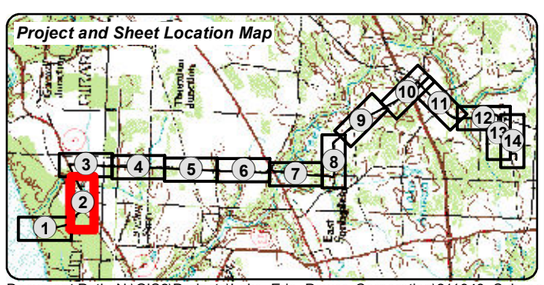

Proposed Underground Cable Route
Proposed AC Cable Route
Proposed Underwater Cable Route
Cable Route LOD
Construction Laydown LOD
Proposed Converter Station Site

Wetlands
PUB
PSS
PFO
PEM

Env. Field Survey Corridor

Wetland Shovel Test
Upland
Wetland

River | Stream
Pond

US Highway
US Route
State Route
Local Road
Railroad
PASDA River | Stream
Contour (10ft.)

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ALIGNMENT MAPS
ERIE COUNTY, PENNSYLVANIA

Page 2 of 14

200 100 0 200 Feet
1 inch = 200 feet (11" X 17")

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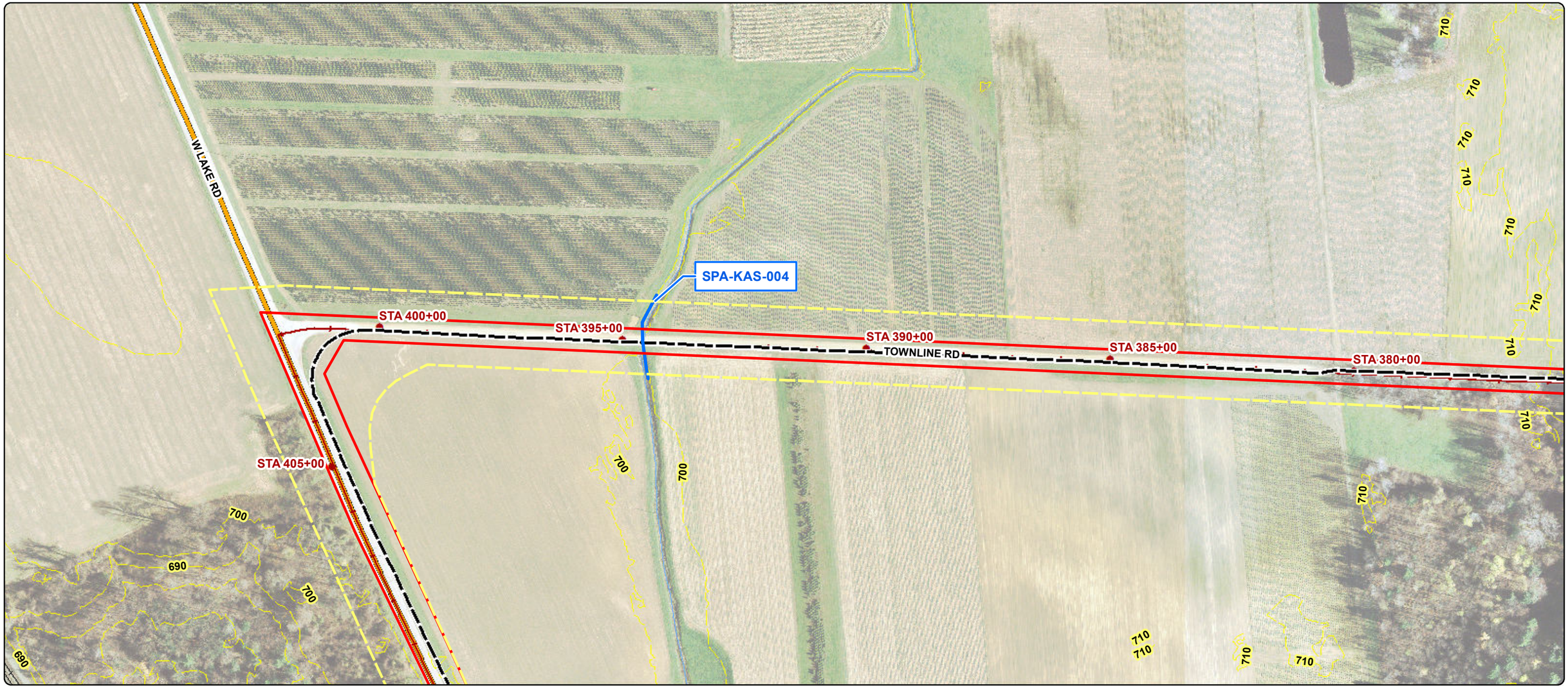

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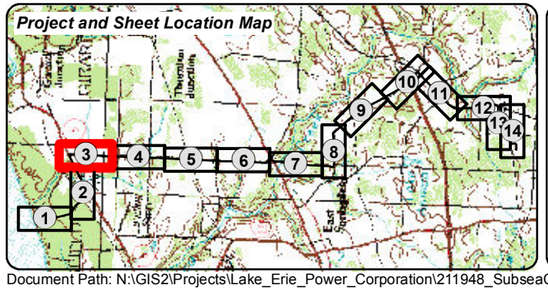
Project and Sheet Location Map



- Proposed Underground Cable Route
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ALIGNMENT MAPS
ERIE COUNTY, PENNSYLVANIA

Page 3 of 14

200 100 0 200 Feet

1 inch = 200 feet (11" X 17")

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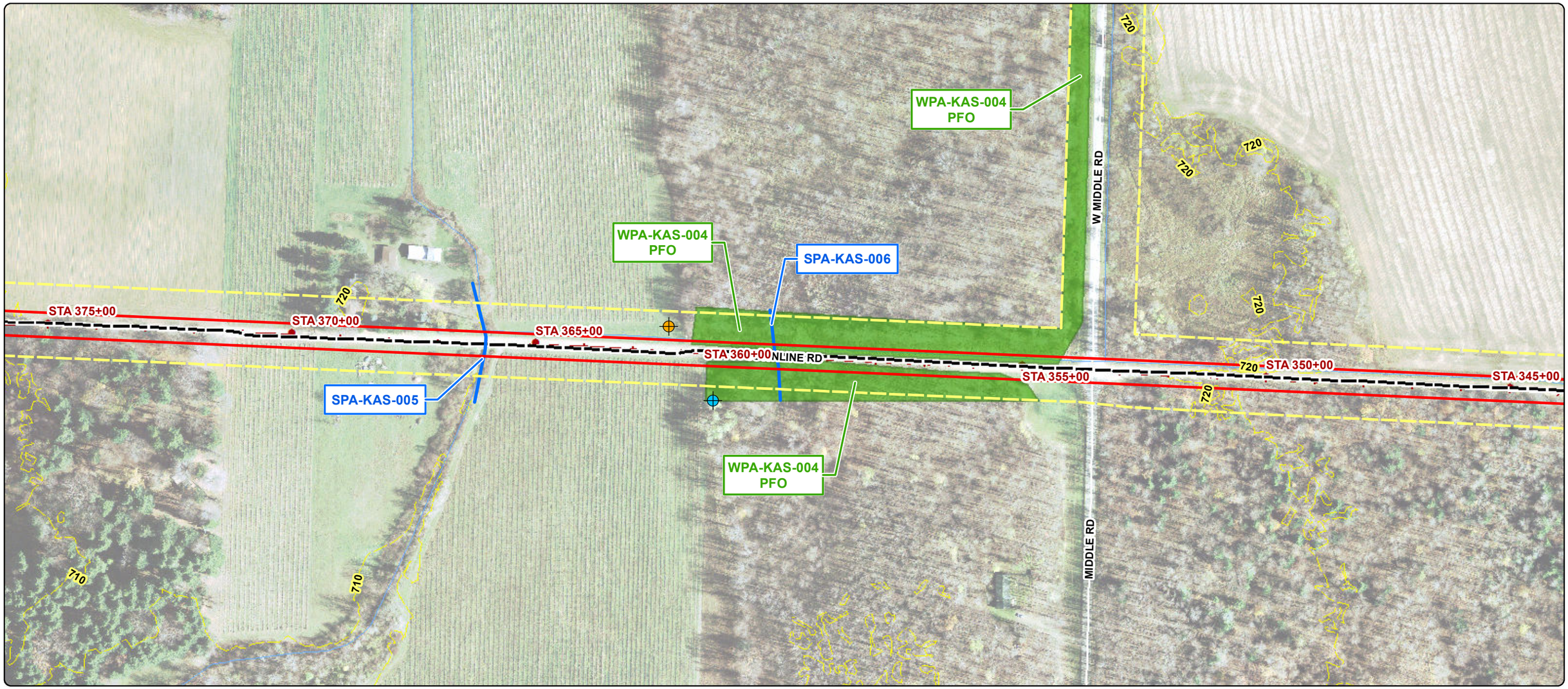

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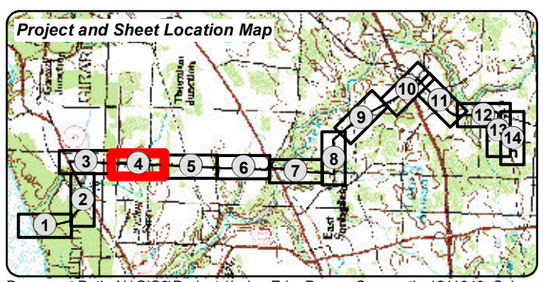

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ALIGNMENT MAPS
ERIE COUNTY, PENNSYLVANIA

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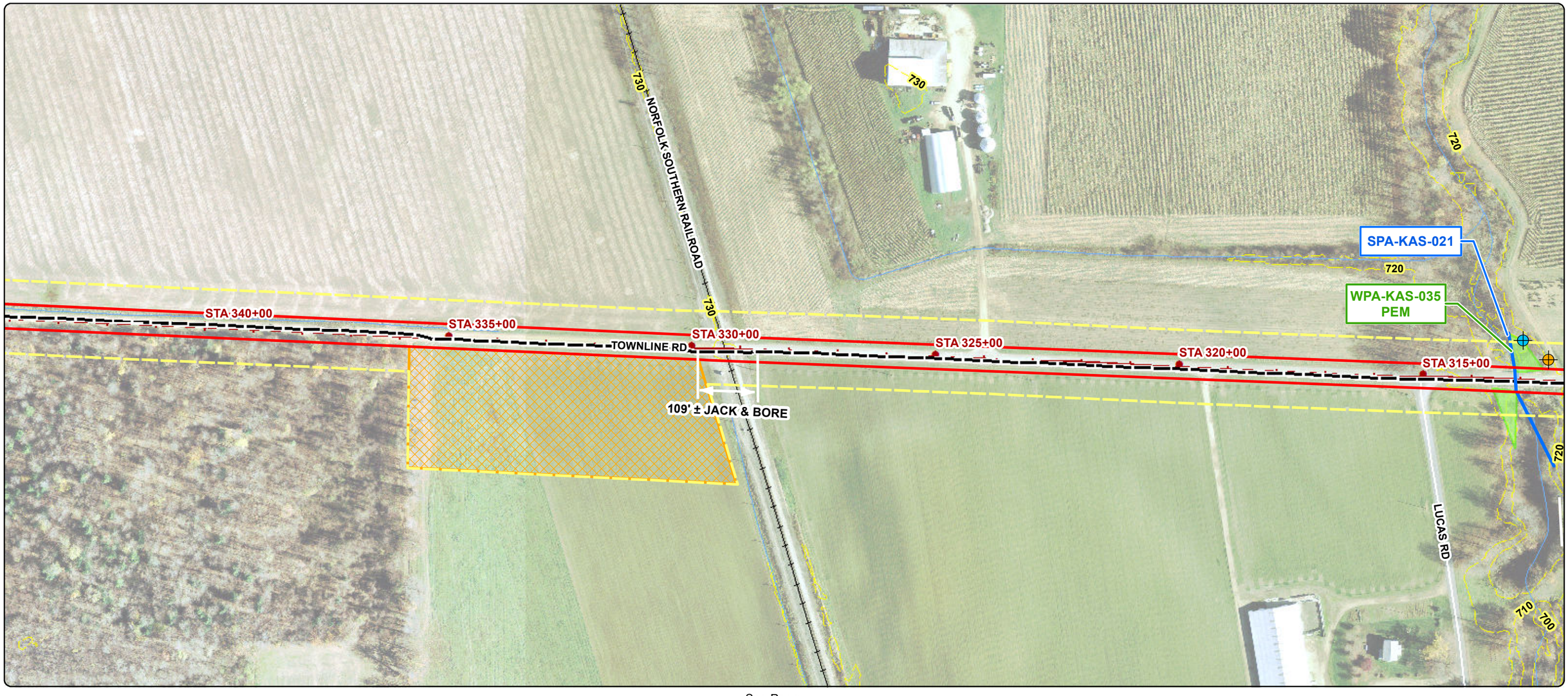

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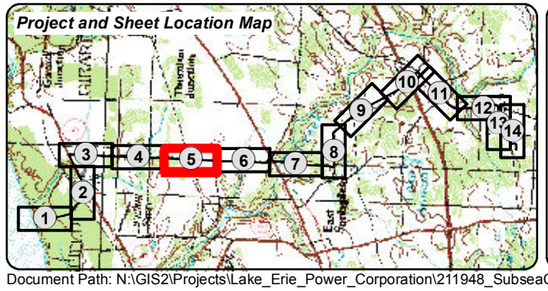

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ALIGNMENT MAPS
ERIE COUNTY, PENNSYLVANIA

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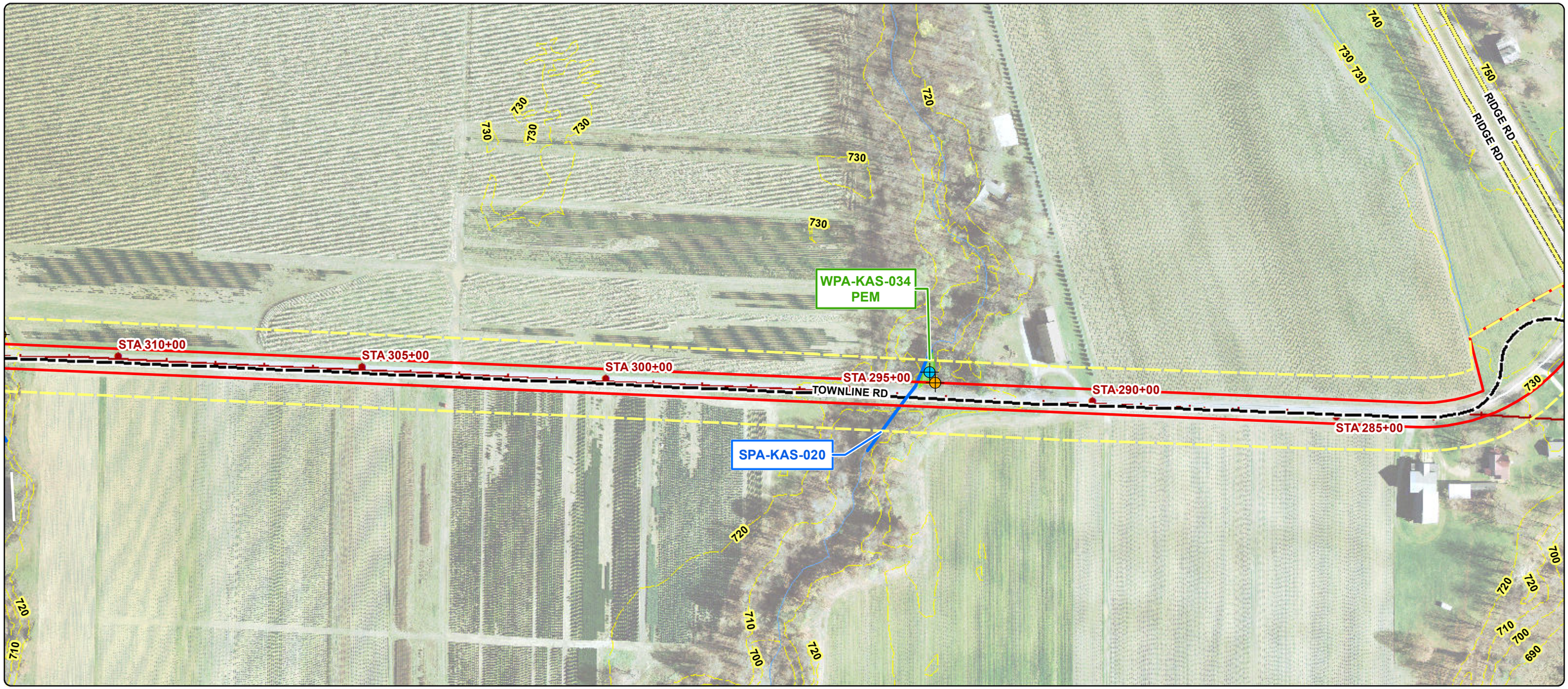

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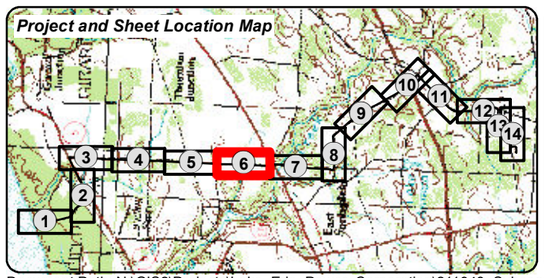

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ALIGNMENT MAPS
ERIE COUNTY, PENNSYLVANIA

Page 6 of 14

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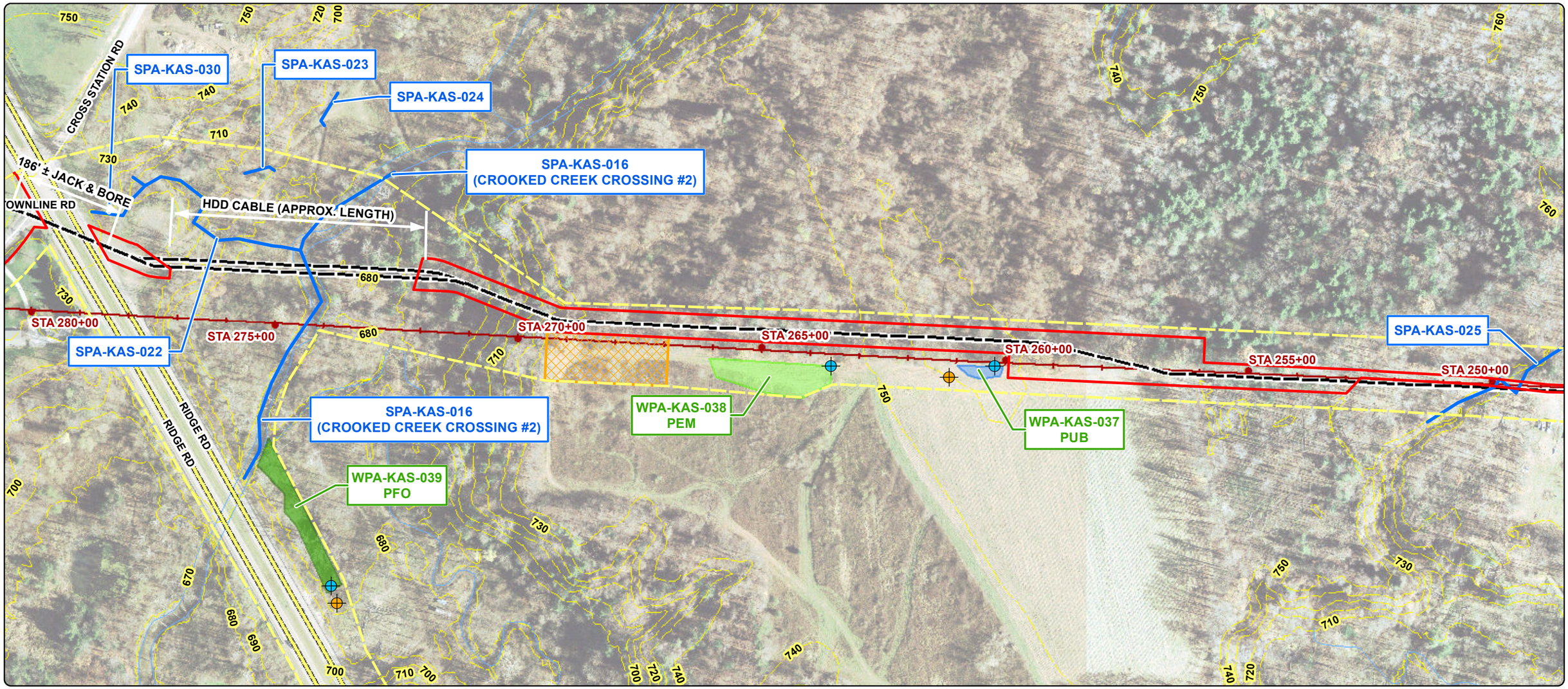

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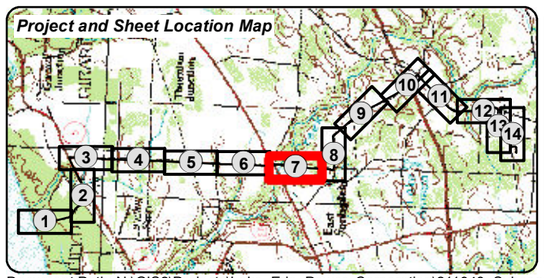

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ALIGNMENT MAPS
ERIE COUNTY, PENNSYLVANIA

Page 7 of 14

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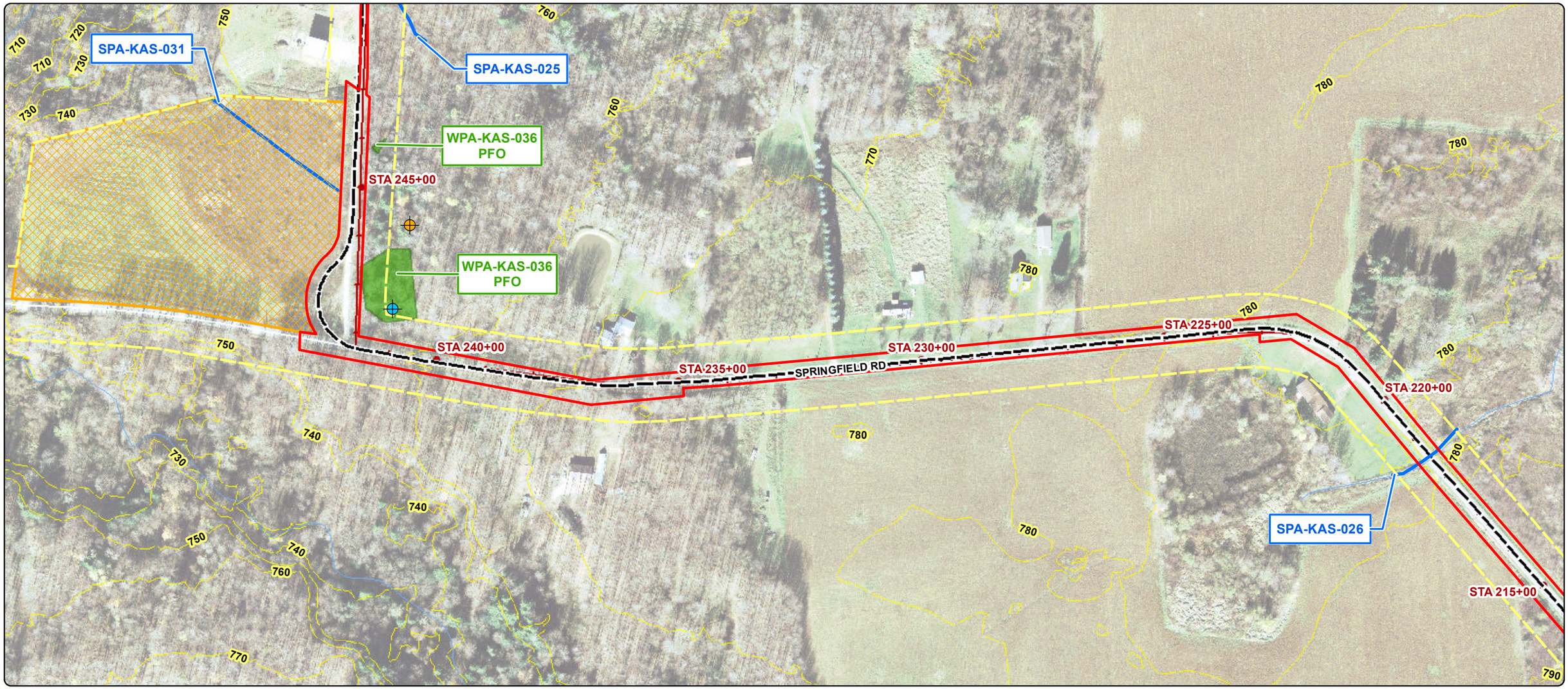

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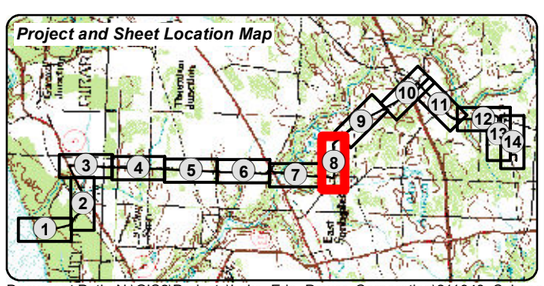

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ALIGNMENT MAPS
ERIE COUNTY, PENNSYLVANIA

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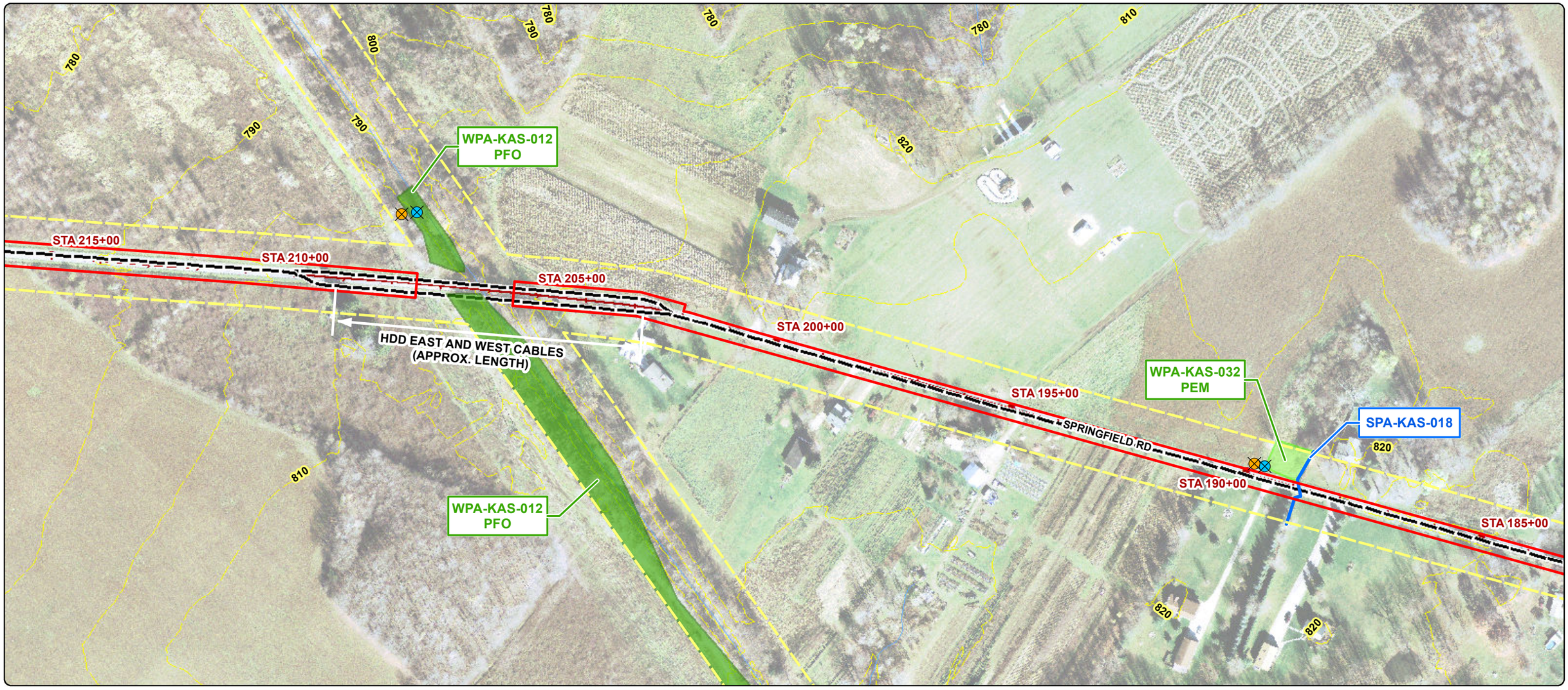

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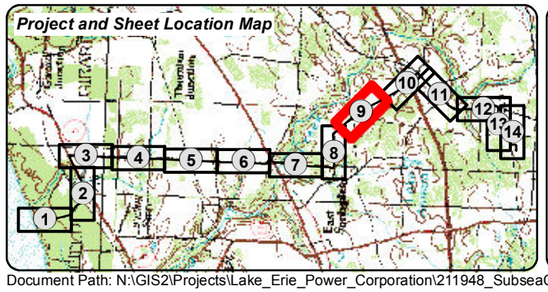

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ALIGNMENT MAPS
ERIE COUNTY, PENNSYLVANIA

Page 9 of 14

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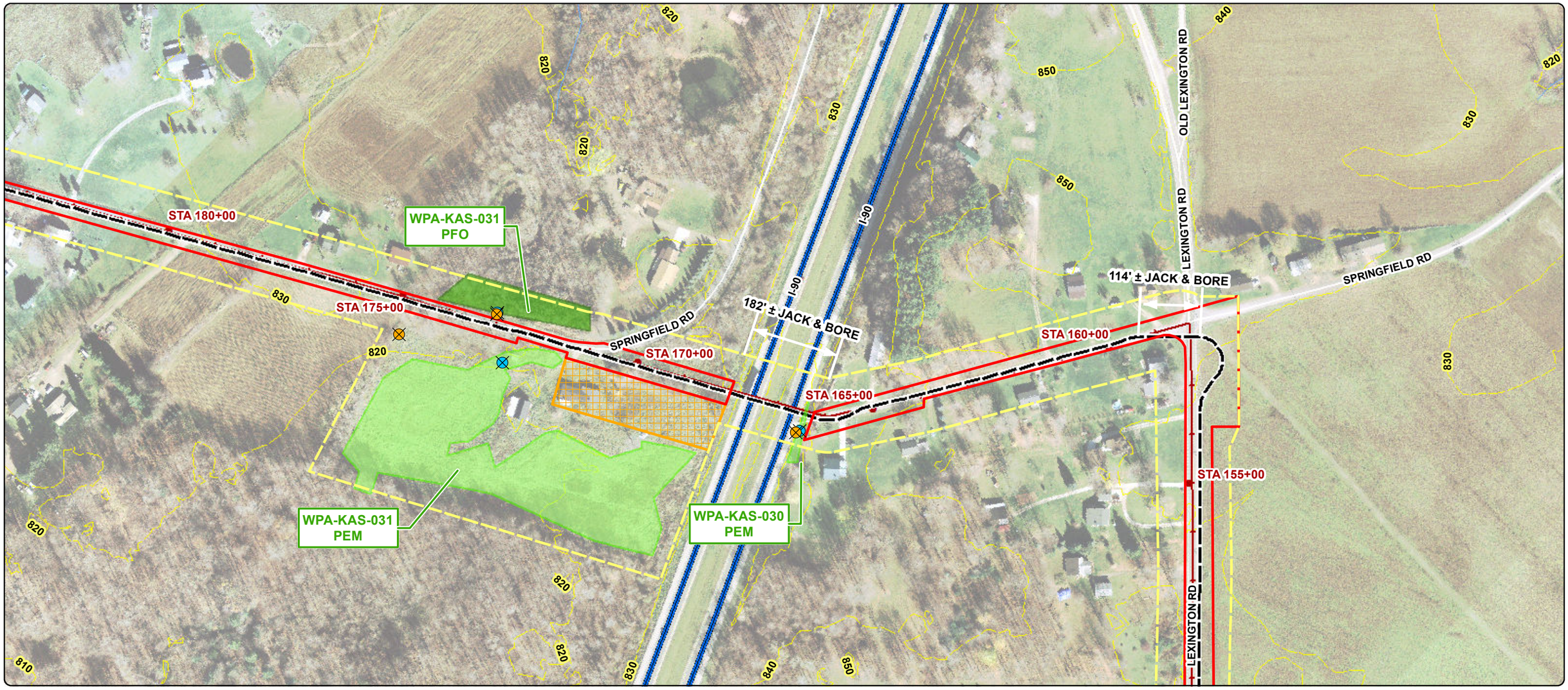

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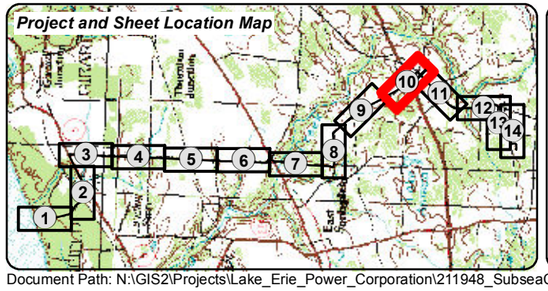

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ALIGNMENT MAPS
ERIE COUNTY, PENNSYLVANIA

Page 10 of 14

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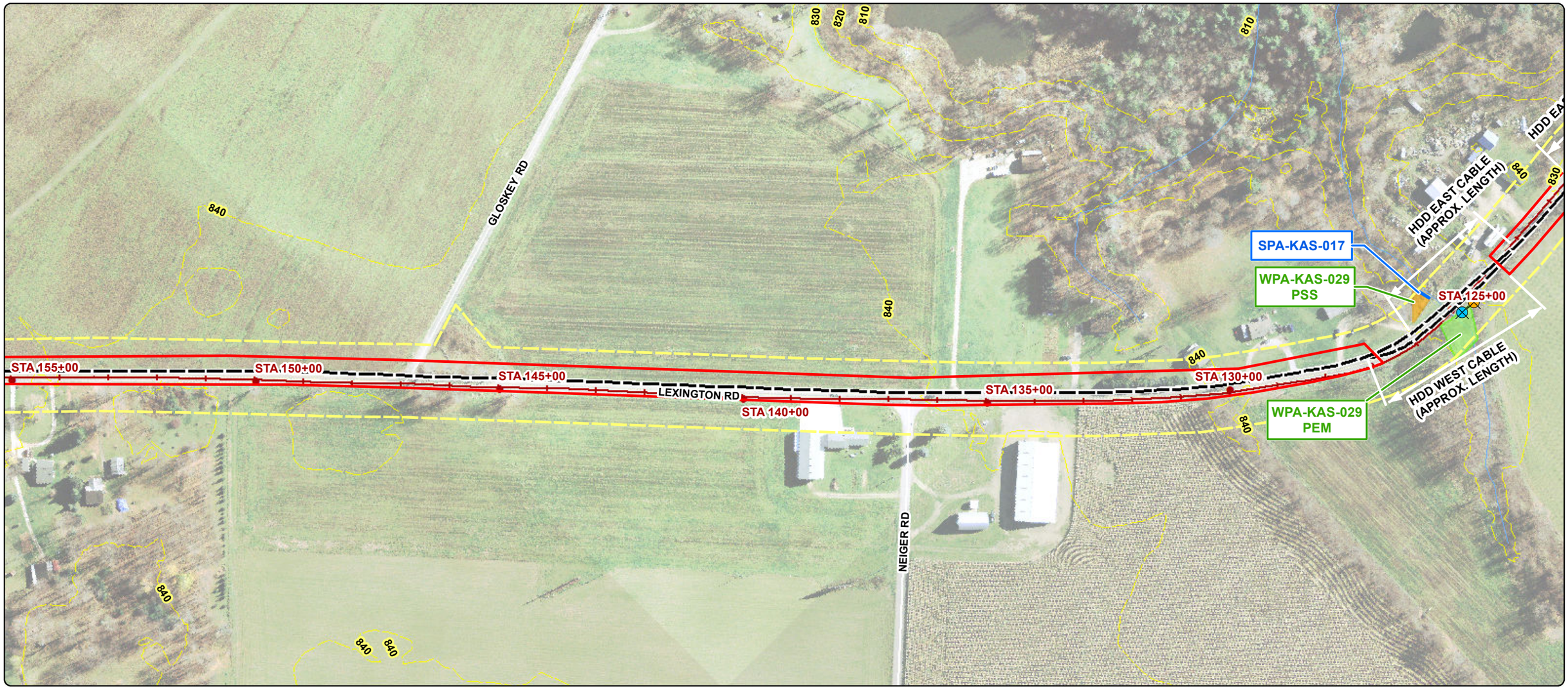

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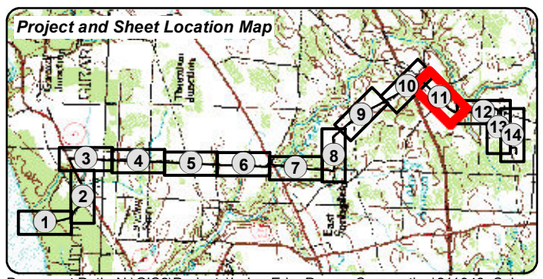

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ERIE COUNTY, PENNSYLVANIA

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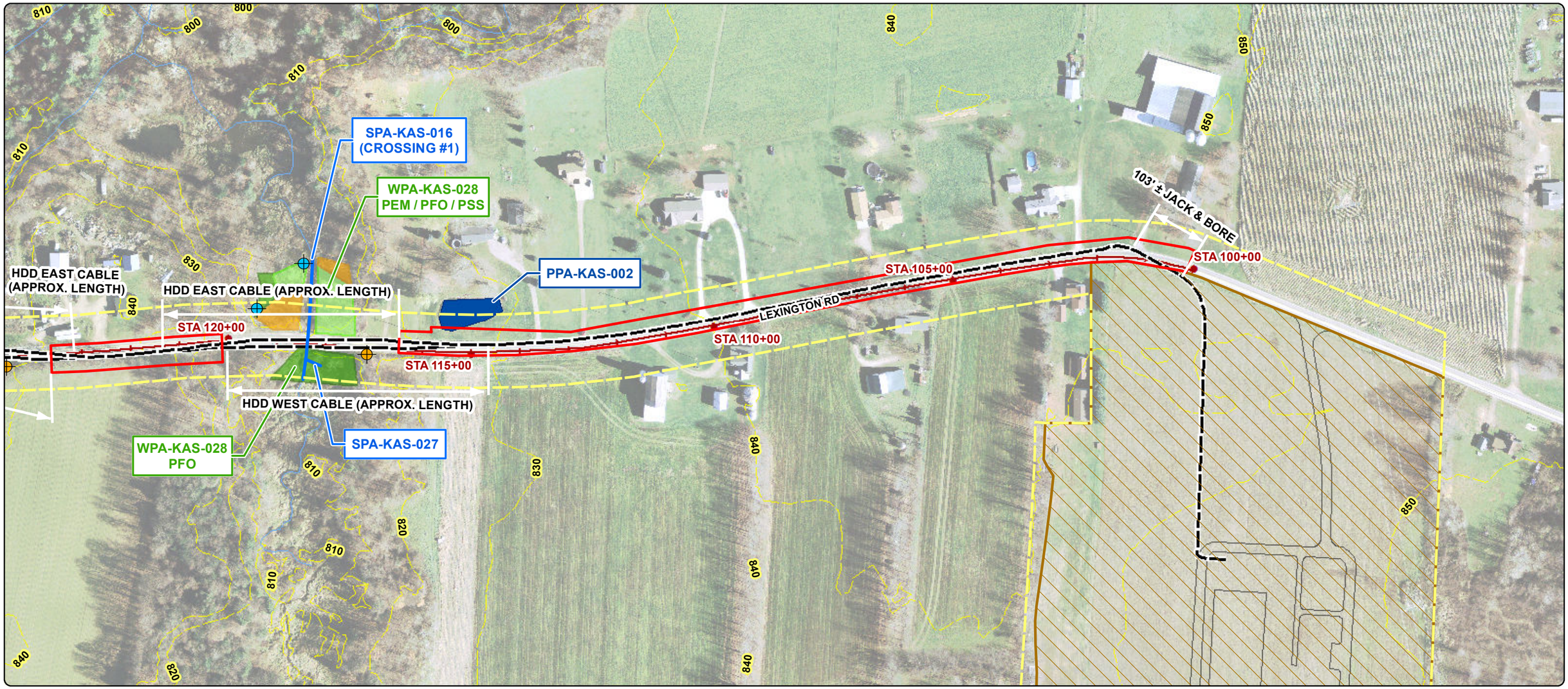

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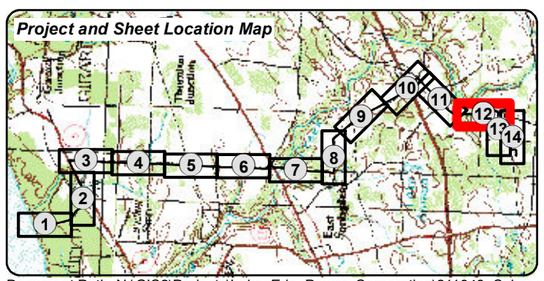
Project and Sheet Location Map



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ERIE COUNTY, PENNSYLVANIA

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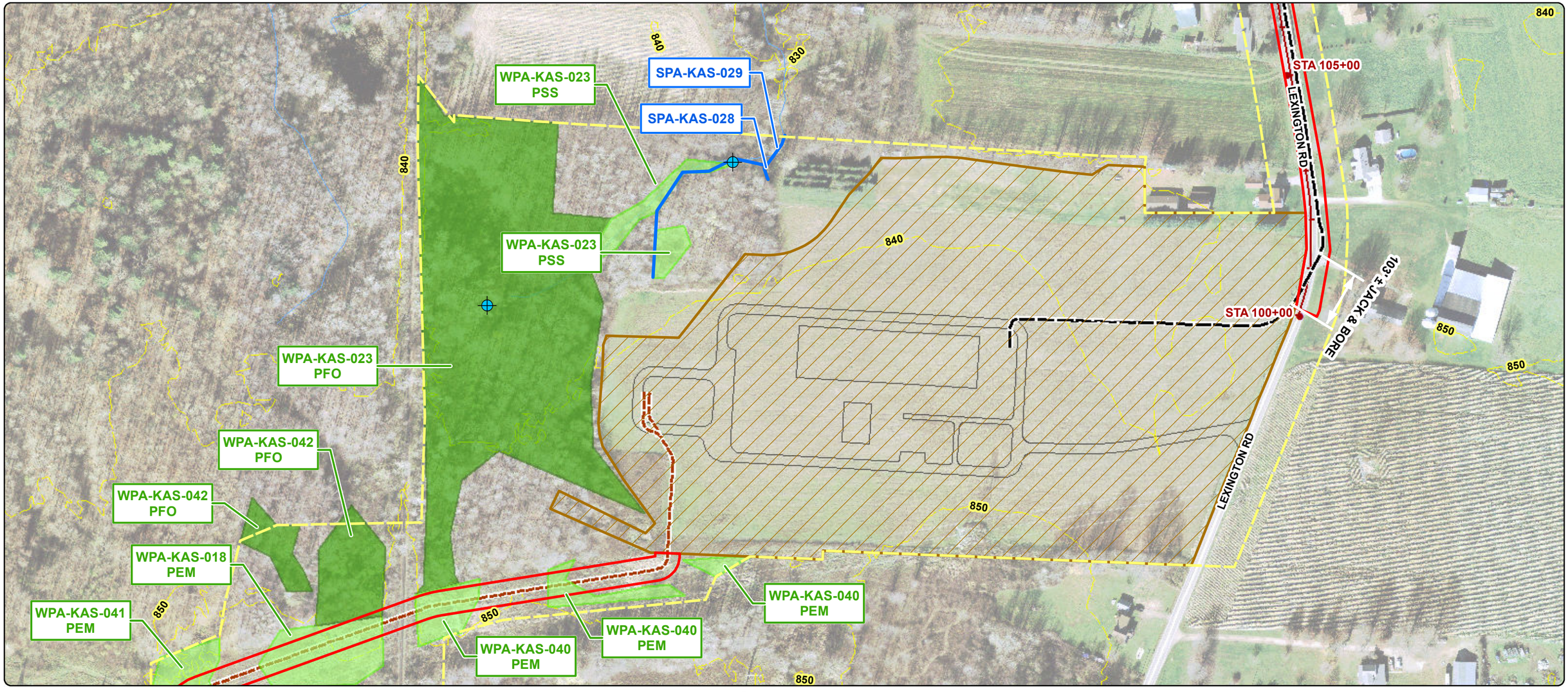

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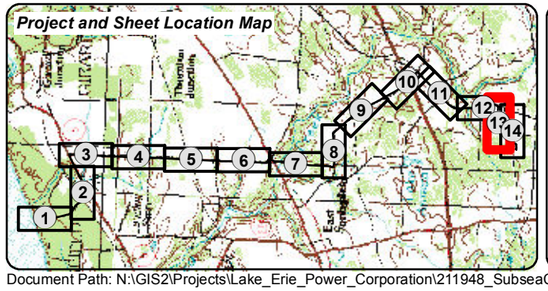
Project and Sheet Location Map



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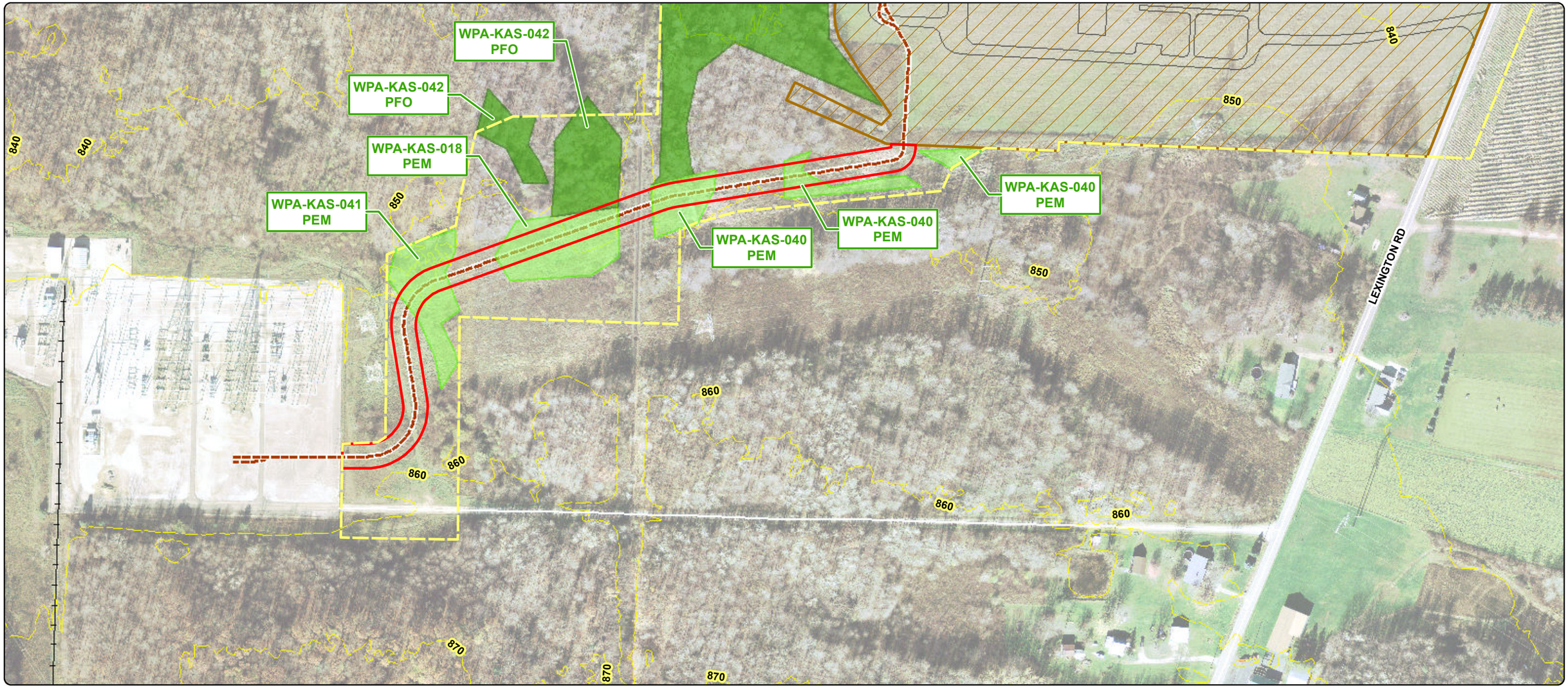

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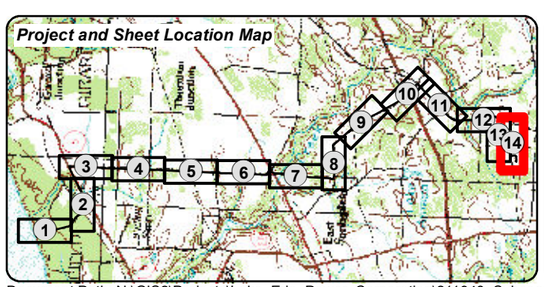

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Appendix B
Photographs of Wetlands and Waterbodies

Wetland Photographic Log

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
525	8/4/14

Direction Photo Taken:

North

Description:

WPA-KAS-001

Forested

Photo No.	Date:
526	8/4/14

Direction Photo Taken:

South

Description:

WPA-KAS-001

Forested

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
527	8/4/14

Direction Photo Taken:

West

Description:

WPA-KAS-002

Emergent

Photo No.	Date:
528	8/4/14

Direction Photo Taken:

East

Description:

WPA-KAS-002

Emergent

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
551	8/6/14

Direction Photo Taken:

West

Description:

WPA-KAS-004

Forested

Photo No.	Date:
552	8/6/14

Direction Photo Taken:

Southwest

Description:

WPA-KAS-004

Forested

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
587	8/7/14

Direction Photo Taken:

North

Description:

WPA-KAS-012

Forested

Photo No.	Date:
588	8/7/14

Direction Photo Taken:

East

Description:

WPA-KAS-012

Forested

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
0014	9/28/15

Direction Photo Taken:

North

Description:

WPA-KAS-018

Emergent

Photo No.	Date:
0013	9/28/15

Direction Photo Taken:

Northwest

Description:

WPA-KAS-018

Emergent

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
624	8/8/14

Direction Photo Taken:

Northwest

Description:

WPA-KAS-023

Forested

Photo No.	Date:
625	8/8/14

Direction Photo Taken:

Northeast

Description:

WPA-KAS-023

Forested

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
742	12/22/14

Direction Photo Taken:

East

Description:

WPA-KAS-028

Forested

Photo No.	Date:
743	12/22/14

Direction Photo Taken:

West

Description:

WPA-KAS-028

Emergent

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
741	12/22/14

Direction Photo Taken:

South

Description:

WPA-KAS-028

Emergent and Scrub Shrub

Photo No.	Date:
692	11/5/14

Direction Photo Taken:

West

Description:

WPA-KAS-029

Emergent

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
693	11/5/14

Direction Photo Taken:

East

Description:

WPA-KAS-029

Scrub Shrub

Photo No.	Date:
695	11/5/14

Direction Photo Taken:

East

Description:

WPA-KAS-030

Emergent

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
696	11/5/14

Direction Photo Taken:

West

Description:

WPA-KAS-030

Emergent

Photo No.	Date:
697	11/5/14

Direction Photo Taken:

Northeast

Description:

WPA-KAS-031

Forested

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
699	11/5/14

Direction Photo Taken:

West

Description:

WPA-KAS-031

Forested

Photo No.	Date:
700	11/5/14

Direction Photo Taken:

Northeast

Description:

WPA-KAS-032

Emergent

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
701	11/5/14

Direction Photo Taken:

East

Description:

WPA-KAS-032

Emergent

Photo No.	Date:
710	11/6/14

Direction Photo Taken:

East

Description:

WPA-KAS-034

Emergent

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
710	11/6/14

Direction Photo Taken:

South

Description:

WPA-KAS-034

Emergent

Photo No.	Date:
709	11/6/14

Direction Photo Taken:

East

Description:

WPA-KAS-034

Emergent

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
711	11/6/14

Direction Photo Taken:

East

Description:

WPA-KAS-035

Emergent

Photo No.	Date:
712	11/5/14

Direction Photo Taken:

East

Description:

WPA-KAS-035

Emergent

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
721	11/6/14

Direction Photo Taken:

North

Description:

WPA-KAS-036

Forested

Photo No.	Date:
722	11/5/14

Direction Photo Taken:

Northwest

Description:

WPA-KAS-036

Forested

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
725	11/6/14

Direction Photo Taken:

West

Description:

WPA-KAS-037

Emergent

Photo No.	Date:
726	11/6/14

Direction Photo Taken:

Northwest

Description:

WPA-KAS-037

Emergent

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
738	12/22/14

Direction Photo Taken:

West

Description:

WPA-KAS-039

Forested

Photo No.	Date:
739	12/22/14

Direction Photo Taken:

West

Description:

WPA-KAS-039

Forested

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
841	4/16/15

Direction Photo Taken:

West

Description:

WPA-KAS-040

Emergent

Photo No.	Date:
0011	9/28/15

Direction Photo Taken:

Northeast

Description:

WPA-KAS-041

Emergent

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
0010	9/28/15

Direction Photo Taken:

Southeast

Description:

WPA-KAS-040

Emergent

Stream Photographic Log

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
533	8/4/14

Direction Photo Taken:

South

Description:

SPA-KAS-001

Upstream

Photo No.	Date:
534	8/4/14

Direction Photo Taken:

West

Description:

SPA-KAS-001

Downstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
541	8/5/14

Direction Photo Taken:

South

Description:

SPA-KAS-002

Upstream

Photo No.	Date:
542	8/5/14

Direction Photo Taken:

North

Description:

SPA-KAS-002

Downstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
547	8/6/14

Direction Photo Taken:

East

Description:

SPA-KAS-004

Upstream

Photo No.	Date:
548	8/4/14

Direction Photo Taken:

West

Description:

SPA-KAS-004

Downstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
577	8/6/14

Direction Photo Taken:

East

Description:

SPA-KAS-005

Upstream

Photo No.	Date:
578	8/6/14

Direction Photo Taken:

West

Description:

SPA-KAS-005

Downstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
550	8/6/14

Direction Photo Taken:

West

Description:

SPA-KAS-006

Upstream

Photo No.	Date:
549	8/6/14

Direction Photo Taken:

East

Description:

SPA-KAS-006

Downstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
690	11/5/14

Direction Photo Taken:

West

Description:

SPA-KAS-016

Upstream

Photo No.	Date:
691	11/5/14

Direction Photo Taken:

East

Description:

SPA-KAS-016

Downstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
694	11/5/14

Direction Photo Taken:

East

Description:

SPA-KAS-017

Downstream

Photo No.	Date:
702	11/5/14

Direction Photo Taken:

West

Description:

SPA-KAS-018

Upstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
703	11/5/14

Direction Photo Taken:

East

Description:

SPA-KAS-018

Downstream

Photo No.	Date:
708	11/5/14

Direction Photo Taken:

East

Description:

SPA-KAS-020

Upstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
709	11/5/14

Direction Photo Taken:

West

Description:

SPA-KAS-020

Downstream

Photo No.	Date:
713	11/5/14

Direction Photo Taken:

West

Description:

SPA-KAS-021

Upstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
714	11/5/14

Direction Photo Taken:

Southwest

Description:

SPA-KAS-021

Downstream

Photo No.	Date:
716	11/6/14

Direction Photo Taken:

West

Description:

SPA-KAS-022

Upstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
715	11/6/14

Direction Photo Taken:

East

Description:

SPA-KAS-022

Downstream

Photo No.	Date:
718	11/6/14

Direction Photo Taken:

North

Description:

SPA-KAS-023

Upstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
717	11/6/14

Direction Photo Taken:

South

Description:

SPA-KAS-023

Downstream

Photo No.	Date:
720	11/6/14

Direction Photo Taken:

West

Description:

SPA-KAS-024

Upstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
719	11/6/14

Direction Photo Taken:

Southeast

Description:

SPA-KAS-024

Downstream

Photo No.	Date:
723	11/6/14

Direction Photo Taken:

Southeast

Description:

SPA-KAS-025

Upstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
724	11/6/14

Direction Photo Taken:

Northeast

Description:

SPA-KAS-025

Downstream

Photo No.	Date:
739	12/22/14

Direction Photo Taken:

East

Description:

SPA-KAS-026

Upstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
740	12/22/14

Direction Photo Taken:

West

Description:

SPA-KAS-026

Downstream

Photo No.	Date:
744	12/22/14

Direction Photo Taken:

Southwest

Description:

SPA-KAS-027

Upstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
745	12/22/14

Direction Photo Taken:

Northeast

Description:

SPA-KAS-027

Downstream

Photo No.	Date:
830	04/16/15

Direction Photo Taken:

North

Description:

SPA-KAS-028

Downstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
783145	04/16/15

Direction Photo Taken:

South

Description:

SPA-KAS-028

Downstream

Photo No.	Date:
837	04/16/15

Direction Photo Taken:

South

Description:

SPA-KAS-029

Upstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
858	04/16/15

Direction Photo Taken:

South

Description:

SPA-KAS-030

Downstream

Photo No.	Date:
859	04/16/15

Direction Photo Taken:

North

Description:

SPA-KAS-030

Upstream

Client Name:	Site Location: Lake Erie Connector Project	Project No.
ITC Lake Erie Connector LLC		243732

Photo No.	Date:
823	04/15/15

Direction Photo Taken:

Southeast

Description:

SPA-KAS-031

Upstream

Photo No.	Date:
824	04/15/15

Direction Photo Taken:

Northwest

Description:

SPA-KAS-031

Downstream

Appendix C
USACE Wetland Determination Data Forms

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Erie W Route LTC City/County: Erie Co Sampling Date: 8/4/21

Applicant/Owner: LTC State: PA Sampling Point: WPA-IAS-001

Investigator(s): IAS MCC Section, Township, Range: NO PLSS IN PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): R Lat: 42.005855 Long: -80.378276 Datum: NAD83

Soil Map Unit Name: Lamson silt loam (La) NWI classification: PFO

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

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

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

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

Hydrophytic Vegetation Present? Yes X No	Is the Sampled Area within a Wetland? Yes X No	
Hydric Soil Present? Yes X No		
Wetland Hydrology Present? Yes X No	If yes, optional Wetland Site ID: WPA-IAS-001	

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

WPA-IAS-001
PFO
Located next to Lake Erie, near/connected to SPA-IAS-001

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X 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)
- ___ Marl Deposits (B15)
- X 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches):

Water Table Present? Yes X No ___ Depth (inches): 10"

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): to surface

Wetland Hydrology Present? Yes X No

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

none

Remarks:

none

1134

Sampling Point: WPA-WS-201

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Populus deltoides	25	Y	FAC
2. Ulmus rubra	10	Y	FAC
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Lindera benzoin	40	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	40	= Total Cover	

Herb Stratum (Plot size: <1')			
1. Impatiens capensis	15	Y	FACW
2. Onoclea sensibilis	15	Y	FACW
3. Dulichium arundinaceum	5	N	OBL
4. Toxicodendron radicans	10	Y	FAC
5. Solidago rugosa	5	N	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes Y No

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

SOIL

Sampling Point: WPA-VA5-001

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
A 12	2.5Y 2.5/1	90	2.5YR 4/8	10	D	PL	loam	
B-18	5YR 6/2	60					sand	
	7.5YR 5/6	40						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: none sand

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Erie ROW W City/County: Erie Co Sampling Date: 8/4/14

Applicant/Owner: ITC Holdings State: PA Sampling Point: UPL-001

Investigator(s): VAS, MC Section, Township, Range: no PLSS in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): L Lat: 42.001259 Long: -80.38777 Datum: NAD83

Soil Map Unit Name: Lamson silt loam NWI classification: UPL

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

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

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

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

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

UPL-VAS-001

UPL-VAS-002

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

none

Remarks:

none

VEGETATION – Use scientific names of plants.

Sampling Point: VPL-VAS-001

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	30	Y	FACU
2. Sassafras albidum	20	Y	FAU
3.			
4.			
5.			
6.			
7.			
	50	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	20	Y	UPL
2. Ligustrum japonicum	15	Y	UPL
3.			
4.			
5.			
6.			
7.			
	35	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Solidago nemoralis	10	N	FAC
2. Carex pensylvanica	60	Y	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	70	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. Toxicodendron radicans	40	Y	FAC
2. Parthenocissus quinquefolia	40	Y	FACU
3. Vitis vulpina	10	N	FAC
4.			
	95	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 14 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No X

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

SOIL

Sampling Point: UPL-WAS-001

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 4/4	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Erie RD(W) (?) City/County: Erie Co Sampling Date: 8/13/14

Applicant/Owner: ITC Holding State: PA Sampling Point: WPA-002A

Investigator(s): VAS, MCC Section, Township, Range: no PLSS in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): R Lat: 42.006629 Long: 80.359704 Datum: NAD83

Soil Map Unit Name: Minoa fine sandy loam (MnA), Gageville silt loam (GaB) NWI classification: PFO

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

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

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

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

Hydrophytic Vegetation Present? Yes X No		**Is the Sampled Area within a Wetland?** Yes X **No**
Hydric Soil Present? Yes X No		
Wetland Hydrology Present? Yes X No		If yes, optional Wetland Site ID: WPA-VAS-002

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

WPA-VAS-002A

PFO

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- __ Water Marks (B1)
- __ Sediment Deposits (B2)
- X Drift Deposits (B3)
- __ Algal Mat or Crust (B4)
- __ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- __ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- __ Aquatic Fauna (B13)
- __ Marl Deposits (B15)
- __ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- __ Presence of Reduced Iron (C4)
- __ Recent Iron Reduction in Tilled Soils (C6)
- __ Thin Muck Surface (C7)
- __ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): surface

Water Table Present? Yes X No ____ Depth (inches): 4

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): surface

Wetland Hydrology Present? Yes X **No**

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

none

Remarks: none

VEGETATION – Use scientific names of plants.

Sampling Point: UPAVAS-002A

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Fraxinus pennsylvanica	30	Y	FACW
2. Populus deltoides	20	Y	FAC
3. Ulmus rubra	10	N	FAC
4.			
5.			
6.			
7.			
	60	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Lindera benzoin	50	Y	FACW
2. Lonicera japonica	20	Y	FAC
3. Rosa multiflora	5	N	UPL
4.			
5.			
6.			
7.			
	75	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Impatiens capensis	20	Y	FACW
2. Onoclea sensibilis	10	N	FACW
3. Carex	10	N	
4. Glyceria striata	20	Y	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	60	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. Toxicodendron radicans	10	Y	FAC
2.			
3.			
4.			
	N	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 84 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No

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

UPL-VA5-004

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/4	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 6 in

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Erie NWR City/County: Erie Co Sampling Date: 8/13/14

Applicant/Owner: ITC State: PA Sampling Point: WPA-002

Investigator(s): VAS Section, Township, Range: no PLSS in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): L Lat: 42.010039 Long: -80.400178 Datum: NAD83

Soil Map Unit Name: Gat, Ia, MnA NWI classification: PEM

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	If yes, optional Wetland Site ID: WPA-VAS-002
Wetland Hydrology Present?	Yes X	No	

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

PEM
WPA-VAS-002

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): to surface

Water Table Present? Yes X No ____ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): surface

Wetland Hydrology Present? Yes X No

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

none

Remarks:

none

VEGETATION – Use scientific names of plants.

Sampling Point: WHA-WAS-002

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	10	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Scirpus cyperinus	20	Y	OBL
2. Eupatorium perfoliatum	20	Y	FACW
3. Mentha spicata	10	N	FACW
4. Glyceria striata	20	Y	OBL
5. Onoclea sensibilis	10	N	FACW
6. Typha latifolia	15	N	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No

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

Sampling Point: WPA-VAS-0024

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 2/1	90	2.5Y 4/8	10	D	M	loam	
5-12	10YR 3/1	85	2.5YR 4/8	15	D	M	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lakeshore ROW W City/County: Erie Co Sampling Date: 8/6/14

Applicant/Owner: ITC State: PA Sampling Point: WPA-004

Investigator(s): VAS, MCC Section, Township, Range: no PLSS in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41.996914 Long: -80.388225 Datum: NAD83

Soil Map Unit Name: MnA, RnA, FnB, FrA, RhB, FvA, HkB, Ge, PtB, PtB NWI classification: PFO

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ___ Hydric Soil Present? Yes X No ___ Wetland Hydrology Present? Yes X No ___	**Is the Sampled Area within a Wetland?** Yes X No ___ If yes, optional Wetland Site ID: WPA-VAS-004

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

WPA-VAS-004
SPA-VAS-006 flows through the wetland & connects it to the other side of the road

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- X 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)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes X No ___ Depth (inches): to surface

Water Table Present? Yes X No ___ Depth (inches): 6 in

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): to surface

Wetland Hydrology Present? Yes X No ___

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

none

Remarks:

none

VEGETATION – Use scientific names of plants.

Sampling Point: WIA-WAS-004

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	20	Y	FAC
2. Ulmus rubra	20	Y	FAC
3. Rhus Copallinum	10	N	UPL
4. Populus deltoides	15	Y	FAC
5. Tilia americana	10	N	FACU
6.			
7.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Cornus amomum	30	Y	FACW
2. Rosa multiflora	10	N	FACU
3. Sambucus nigra	5	N	FACW
4. Lindera benzoin	10	N	FACW
5.			
6.			
7.			
	55	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Impatiens capensis	35	Y	FACW
2. Toxicodendron radicans	10	N	FAC
3. Echinochloa purpurea	10	N	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	55	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. Vitis labrusca	25	Y	FACU
2.			
3.			
4.			
	25	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No

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

SOIL

Sampling Point: WDPA-VA5-001

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/1	60	7.5YR 5/6	20			loam	
	10YR 6/3	20						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Root Mat

Depth (inches): 10in

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Erie W City/County: Erie Sampling Date: 8/6/14

Applicant/Owner: ITC State: PA Sampling Point: UPL-004

Investigator(s): VAS, MCC Section, Township, Range: no PLSS in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41.997176 Long: -80.387673 Datum: NAD 83

Soil Map Unit Name: MnA, PhA, EnB, FrA, PnB, FrA, HkB, Ge, PtB NWI classification: UPL

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

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

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

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No Y
Hydric Soil Present?	Yes ____	No Y	
Wetland Hydrology Present?	Yes ____	No Y	If yes, optional Wetland Site ID: UPL-004

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

UPL- VAS-004
Located in ag field

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

None

Remarks:

None

VEGETATION – Use scientific names of plants.

Sampling Point: UPL-VAS-004

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	—	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	—	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Eichornium Intybus	10	N	UPL
2. Daucus carota	25	Y	UPL
3. Monella vulgaris	15	N	FAC
4. Trifolium pratense	10	N	FACU
5. Trifolium pratens	25	Y	FACU
6. Lolium perenne	15	N	FACU
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	—	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No X

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

WPA-WS002

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/1	100					loam	
5-12	10YR 3/1	90	2.5YR 4/8	10	D	PL	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Erie (E) City/County: Erie Sampling Date: 8/7/14

Applicant/Owner: LTE State: PA Sampling Point: WPA-12

Investigator(s): VAS, MCC Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): L Lat: 41.961778 Long: -80.377327 Datum: NAD83

Soil Map Unit Name: PLA, ICnB, PIB NWI classification: PFO

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

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

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

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

Hydrophytic Vegetation Present?	Yes Y	No	**Is the Sampled Area within a Wetland?** Yes Y No
Hydric Soil Present?	Yes Y	No	
Wetland Hydrology Present?	Yes Y	No	If yes, optional Wetland Site ID: WPA-VAS-012

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

WPA-VAS-012
Wetland Stream

HYDROLOGY

Wetland Hydrology Indicators:

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

- Y Surface Water (A1)
- Y High Water Table (A2)
- Y Saturation (A3)
- Y 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)
- Y Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes Y No _____ Depth (inches): to surface

Water Table Present? Yes Y No _____ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes Y No _____ Depth (inches): surface

Wetland Hydrology Present? Yes Y No

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

none

Remarks:

none

VEGETATION – Use scientific names of plants.

Sampling Point: UPA-WAS-02

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer nigrum	15	Y	FAC
2. Fraxinus americana	10	Y	FACU
3. Fraxinus pinnata	10	Y	OBL
4.			
5.			
6.			
7.			
	35	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	15	Y	FACU
2. Acer nigrum	15	Y	FAC
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Impatiens capensis	10	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No

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

UPA-WAS-012

Sampling Point: _____

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10yr 2/1	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- 7 Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes Y No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Glacenello City/County: Erie Sampling Date: 8/7/14

Applicant/Owner: TTC State: PA Sampling Point: UPL-12

Investigator(s): VAS MCC Section, Township, Range: none (N PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR or MLRA): R Lat: 41.961728 Long: -80.377227 Datum: NAD83

Soil Map Unit Name: PtB NWI classification: UPL

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

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

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

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

Hydrophytic Vegetation Present?	Yes _____	No Y	**Is the Sampled Area within a Wetland?** Yes _____ No Y
Hydric Soil Present?	Yes _____	No N	
Wetland Hydrology Present?	Yes _____	No N	If yes, optional Wetland Site ID: _____

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

UPL-VAS-012

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No X

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

none

Remarks:

none

UPL-WASO12

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Betula lenta	25	Y	FACU
2. Acer saccharinum	15	Y	FACW
3. Pinus strobus	25	Y	FACU
4.			
5.			
6.			
7.			
	65	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Betula lenta	15	Y	FACU
2. Rosa multiflora	5	N	FACU
3. Rubus allegheniensis	10	Y	FACU
4. Rubus occidentalis	5	N	UPL
5. Viburnum lantanoides	10	Y	FACU
6.			
7.			
	45	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Toxicodendron radicans	25	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	25	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	—	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 43 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No X

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

UPL-WAS-012

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/4	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes _____ No X

Remarks:

WPA-VAS-041 WPA-VAS-018
WPA-VAS-040

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LERC City/County: Erie Sampling Date: 8/7/14

Applicant/Owner: LERC State: PA Sampling Point: WPA-18

Investigator(s): VAS MCC Section, Township, Range: None in PA

Landform (hillslope, terrace, etc.): None Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR) or MLRA): R Lat: 41.934927 Long: -80.38205 Datum: NAD83

Soil Map Unit Name: Mh, PtB NWI classification: PEM

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

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

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

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

Hydrophytic Vegetation Present?	Yes Y No	**Is the Sampled Area within a Wetland?** Yes Y No
Hydric Soil Present?	Yes Y No	
Wetland Hydrology Present?	Yes Y No	If yes, optional Wetland Site ID:

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

WPA-VAS-018 within a negatory maintained transmission ROW-
PEM WPA-VAS-040
WPA-VAS-041 all have the same characteristics, hydrology & vegetation

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- Y High Water Table (A2)
- X 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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): surface

Water Table Present? Yes Y No ____ Depth (inches): 5 in

Saturation Present? (includes capillary fringe) Yes Y No ____ Depth (inches): to surface

Wetland Hydrology Present? Yes Y No

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

None

Remarks:

None

VEGETATION – Use scientific names of plants.

Sampling Point: WPA-105-018

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Cornus Edward	5	+	—
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size: 5')			
1. Dicharthelium clandestinum	40	Y	FACW
2. Glyceria striata	10	N	OBL
3. Onoclea sensibilis	20	Y	FACW
4. Scirpus cyperinus	30	Y	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- Y 1 - Rapid Test for Hydrophytic Vegetation
- Y 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes Y No

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

wetland located within a maintained ROW- regular veg maintenance means shrubs were dead

SOIL

Sampling Point: WDK-145-018

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR4/1	85	7.5YR4/6	15	D	PL	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEPC City/County: Erie Sampling Date: 8/7/14

Applicant/Owner: LEPC State: PA Sampling Point: UPL-OB

Investigator(s): VAS, MCC Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): None Local relief (concave, convex, none): None Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41.93515 Long: -80.380696 Datum: NAD83

Soil Map Unit Name: olB NWI classification: UPL

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

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

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

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

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

located within a regularly maintained transmission ROW

UPL-VAS-OB

UPL-VAS-023, UPL-VAS-024, WPA-VAS-040, WPA-VAS-041

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): ____

Water Table Present? Yes ____ No X Depth (inches): ____

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

Wetland Hydrology Present? Yes ____ No X

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

None

Remarks:

None

VEGETATION – Use scientific names of plants.

Sampling Point: UPL-VA5-08

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	=	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. Buddleja davidii	5	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
	5	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Lolium perenne	85	Y	FACU
2. Dichanthelium clandestinum	10	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ___ No X

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

SOIL

Sampling Point: UPL-VA5-08

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/3	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:_____

Depth (inches):_____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LSPC City/County: Erie Sampling Date: 8/18/14

Applicant/Owner: LSPC State: PA Sampling Point: UPA-023

Investigator(s): VAS, MCC Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): K Lat: 41.93710 Long: -80.80047 Datum: NAD83

Soil Map Unit Name: PIB NWI classification: PFO

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	
Wetland Hydrology Present?	Yes X	No	If yes, optional Wetland Site ID: UPA-VAS-023

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

UPA-VAS-023 is delineated extension of wetland delineated on previous day UPA-VAS-023 = UPA-VAS-020 Located across AR from substation b/n CL & field in PFO

Additional work space

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X 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)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): Surface

Water Table Present? Yes X No ____ Depth (inches): Surface

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): Surface

Wetland Hydrology Present? Yes X No

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

NONE

Remarks:

NONE

VEGETATION – Use scientific names of plants.

Sampling Point: WPA-WAS023

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer nigrum	40	Y	FAC
2. Carpinus caroliniana	10	N	FAC
3. Fraxinus americana	20	Y	FACW
4. Ulmus rubra	10	N	FAC
5.			
6.			
7.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Herb Stratum (Plot size: 5')			
1. Impatiens capensis	30	Y	FACW
2. Toxicodendron radicans	30	Y	FAC
3. Onoclea sensibilis	30	Y	FACW
4. Carex crinita	10	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- [X] 1 - Rapid Test for Hydrophytic Vegetation
- [X] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0[1]
- [ ] 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No

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

WPA-145-023

Sampling Point: _____

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	Gley1 2.5/1	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- X Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LSPC City/County: Erie Co Sampling Date: 8/7/14

Applicant/Owner: LSPC State: PA Sampling Point: UPL-020

Investigator(s): VAS, MC Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41.920026 Long: -80.84377 Datum: NAD83

Soil Map Unit Name: PlB NWI classification: UPL

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

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

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

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

Hydrophytic Vegetation Present? Yes ___ No X Hydric Soil Present? Yes ___ No X Wetland Hydrology Present? Yes ___ No X	Is the Sampled Area within a Wetland? Yes ___ No X If yes, optional Wetland Site ID: ___

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

UPL-VAS-020
UPL-VAS-022

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches):

Water Table Present? Yes ___ No X Depth (inches):

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

Wetland Hydrology Present? Yes ___ No X

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

none

Remarks:

none

UPL-VA500

VEGETATION – Use scientific names of plants. Sampling Point: _____

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Fagus grandifolia	30	Y	FACU
2. Acer saccharum	30	Y	FACU
3. Quercus nigra	10	N	FACU
4.			
5.			
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: #1)			
1. none			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	

Herb Stratum (Plot size: 5')			
1. Toxicodendron radicans	25	Y	FAC
2. Podophyllum peltatum	25	Y	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No X

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

SOIL

Sampling Point: WL-WAS-020

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/4	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:_____

Depth (inches):_____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

11/5/14

Project/Site: LEC City/County: Erie Sampling Date: UPA-VAS028

Applicant/Owner: LEC State: PA Sampling Point: 1

Investigator(s): KAS, KO Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): Shpntvalley Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR or MLRA): L Lat: 41.941823 Long: -80.374761 Datum: NAD83

Soil Map Unit Name: CA NWI classification: PEM

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes Y No
Hydric Soil Present?	Yes X	No	If yes, optional Wetland Site ID: UPA-VAS028
Wetland Hydrology Present?	Yes X	No	

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

UPA-VAS028
PEM
ADJTS SPA-VAS016

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X 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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ____ No X Depth (inches): to surface

Water Table Present? Yes ____ No X Depth (inches): 4 in

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): to surface

Wetland Hydrology Present? Yes X No

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

none

Remarks:

none

PEM

UDA-165-028

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	—	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. Rhus copallinum	5	Y	UPL
2. Salix nigra	15	Y	OBL
3.			
4.			
5.			
6.			
7.			
	20	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Glyceria striata	15	Y	OBL
2. Solidago canadensis	20	Y	FACU
3. Juncus effusus	20	Y	OBL
4. Carex crinita	10	N	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	65	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
- Y 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes Y No

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

PEM UPA-WRS028

Sampling Point: _____

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	70	5YR 5/6	30	D	PL	silt loam	
5-12	10YR 3/2	80	5YR 5/6	20	D	PL	sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Erie Connector City/County: Erie CO Sampling Date: 12/22/14

Applicant/Owner: ITC Holdings State: PA Sampling Point: UPA-VAS-028

Investigator(s): VAS Section, Township, Range: none PA

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): L 0 Lat: 41.941823 Long: -80.317161 Datum: NAD83

Soil Map Unit Name: St NWI classification: PSS

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	If yes, optional Wetland Site ID: UPA-VAS-028

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

road crossing wetland area disturbance

PSS

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- X 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)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes X No _____ Depth (inches): surface

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): 5in

Wetland Hydrology Present? Yes X No _____

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

none

Remarks:

WPAVAS028 PSS

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Rhus copallinum	10	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. Cornus amomum	40	Y	FACW
2. Cornus alba	40	Y	FACW
3. Rubus allegheniensis	10	N	FACU
4.			
5.			
6.			
7.			
	90 = Total Cover		

Herb Stratum (Plot size: 5')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ___

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

PS UPA-VAS-028

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 3/2	80	5YR 3/6	20	D	PL	Silt loam	
5-12	10YR 3/2	80	5YR 3/6	20	D	PL	Sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Erie Connector City/County: Erie Co Sampling Date: 12/22/14

Applicant/Owner: ITC Holding State: PA Sampling Point: WPA-VAS028 PFO

Investigator(s): VAS Section, Township, Range: None in PA

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41941823 Long: -80.374769 Datum: NAD83

Soil Map Unit Name: 9 NWI classification: PFO

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No _____
Hydric Soil Present?	Yes X	No _____	If yes, optional Wetland Site ID: WPA-VAS 028
Wetland Hydrology Present?	Yes X	No _____	

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

PFO

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X 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)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): surface
Water Table Present?	Yes X	No _____	Depth (inches): 3in
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): surface

Wetland Hydrology Present? Yes X No _____

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

none

Remarks:

none

PFO WPT-145 028

VEGETATION – Use scientific names of plants. Sampling Point: _____

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	40	Y	FAC
2. Betula lenta	15	Y	FACU
3. Platanus occidentalis	20	Y	FACW
4.			
5.			
6.			
7.			
	75	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	10	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Onoclea sensibilis	15	Y	FACW
2. Juncus effusus	10	Y	OBL
3. Carex sp	10	—	—
4. Aster sp	5	—	—
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No _____

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

SOIL

Sampling Point: WPA-VA5028 PFO

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/1	90	10YR 6/6	10	D	M	clay loam	
8-14	10YR 4/1	50	10YR 6/6	50	D	M	clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Sampling Date: 11/5/14

Applicant/Owner: LEC State: PA Sampling Point: UPL-1AK-028

Investigator(s): AS VO Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): valley slope Local relief (concave, convex, none): none Slope (%): 1

Subregion (LRR or MLRA): R Lat: 41.941823 Long: -80.374761 Datum: NAD83

Soil Map Unit Name: St NWI classification: UP

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

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

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

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No Y
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____

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

UPL-1AK-028

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No X

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

WDN

Remarks:

none

VEGETATION – Use scientific names of plants.

Sampling Point: UPL-WAS-028

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus palustris	10	N	FACW
2. Pinus copallinum	5	N	UPL
3. Pinus alba	10	N	UPL
4. Fagus grandifolia	50	Y	FACU
5. Prunus serotina	5	N	FACU
6.			
7.			
	80	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Hemerocallis fulva	20	Y	UPL
2. Rhododendron carolinianum	10	N	FACU
3. Vinca minor	70	Y	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No X

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

UPL-WAS-028

SOIL

Sampling Point: _____

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

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:_____

Depth (inches):_____

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

Remarks:

None

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Co Sampling Date: 11/5/14

Applicant/Owner: LEC State: PA Sampling Point: UPA-VA-029

Investigator(s): TCS KB Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): K Lat: 41.943935 Long: -80.37493 Datum: NAD83

Soil Map Unit Name: PtB NWI classification: PEM, PSS

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X	No	If yes, optional Wetland Site ID: UPA-VA-029
Wetland Hydrology Present?	Yes X	No	

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

PEM on western side of road

PSS on eastern side of road

About SPA-VA-017

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches):

Water Table Present? Yes ___ No X Depth (inches):

Saturation Present? (includes capillary fringe) Yes X No ___ Depth (inches): to surface

Wetland Hydrology Present? Yes X No

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

none

Remarks:

none

UPA-VAS029

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. Cornus amomum	10	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Solidago canadensis	10	N	FACU
2. Hemerocallis fulva	10	N	UPL
3. Calamagrostis	30	Y	OBL
4. Persicaria sagittata	15	N	OBL
5. Polygonum erectum	20	Y	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	_____ = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	_____	x 2 =	_____
FAC species	_____	x 3 =	_____
FACU species	_____	x 4 =	_____
UPL species	_____	x 5 =	_____
Column Totals:	_____ (A)		_____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No

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

Sampling Point: WDA-YAS-029

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/2	80	7.5YR 4/4	20	D	M	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Sampling Date: 11/5/14

Applicant/Owner: LEC State: PA Sampling Point: UPL-VA-029

Investigator(s): VK, KD Section, Township, Range: None in PA

Landform (hillslope, terrace, etc.): None Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41.9438418 Long: -80.3749360 Datum: NAD83

Soil Map Unit Name: PhB NWI classification: UPL

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

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

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

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No Y
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

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

UPL-VA-029

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

None

Remarks:

None

UPL-WTS029

VEGETATION – Use scientific names of plants.

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. Juglans nigra	20	Y	FACW
2. Rhus copallinum	10	N	UPL
3.			
4.			
5.			
6.			
7.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	
Herb Stratum (Plot size: 5')			
1. Glycine max	90	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90	= Total Cover	
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
		= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No X

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

None

SOIL

Sampling Point: UP-US-029

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 2.5/1	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type:_____

Depth (inches):_____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Co Sampling Date: 11/5/14

Applicant/Owner: LEC State: PA Sampling Point: WPA-WAS-030

Investigator(s): WAS, KO Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41.95188 Long: -80.36916 78 Datum: NAD83

Soil Map Unit Name: VaC NWI classification: PEMA

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

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

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

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

Hydrophytic Vegetation Present?	Yes X No	**Is the Sampled Area within a Wetland?**	**Yes** X **No**
Hydric Soil Present?	Yes Y No	If yes, optional Wetland Site ID:	WPA-WAS-030
Wetland Hydrology Present?	Yes Y No		

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

WPA-WAS-030

PEM

Isolated

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- ___ High Water Table (A2)
- X 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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): surface

Water Table Present? Yes ____ No V Depth (inches):

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): ~~0~~ surface

Wetland Hydrology Present? **Yes** X **No** ____

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

none

Remarks:

none

VEGETATION – Use scientific names of plants.

Sampling Point: WPM-WAS030

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Typha latifolia	75	Y	OBL
2. Euthamia graminifolia	25	Y	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes Y No

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

WD IA-KAS037

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 4/1	60	10YR 4/6	40			clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: NONE

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Sampling Date: 4/5/14

Applicant/Owner: LEC - LTC Holdings State: PA Sampling Point: UPL-030

Investigator(s): KAS Section, Township, Range: none - NPL

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41.951866 Long: -80.265707 Datum: NAD83

Soil Map Unit Name: UaC NWI classification: PEMA/PSS

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

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

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

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	If yes, optional Wetland Site ID: _____

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

UPL-LTC-030

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No X

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

none

Remarks:

none

UPL-VAS-030

VEGETATION – Use scientific names of plants.

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Securigera varia	95	Y	UPL
2. Lotus multiflora	5	N	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No N

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

SOIL

Sampling Point: UPL-KA-U30

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 2/2	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L, M)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: No lit.

Depth (inches): gravel

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: LEPC City/County: Erie County Sampling Date: 11/5/2014

Applicant/Owner: ITC Holdings State: PA Sampling Point: WPA-KAS-031-PEM

Investigator(s): KAS KO Section, Township, Range S T R

Landform (hillslope, terrace, etc.): Depression Local Relief (concave, convex, none): Concave Slope(%) 0

Subregion (LRR or MLRA): LRR R Lat: 41.95351 Long: -80.370725 Datum: NAD83

Soil Map Unit Name: Mh NWI Classification: PEM

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

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

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

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

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes	X	No	**Is the Sampled Area within a Wetland?**	**Yes X No**
Wetland Hydrology Present?	Yes	X	No	If yes, optional Wetland Site ID	WPA-KAS-031

Remarks:
PEM portion of WPA-KAS-031.

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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☑ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes	____	No	X	Depth (inches):
Water Table Present?	Yes	____	No	X	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes	____	No	X	Depth (inches): 0

Wetland Hydrology Present? Yes X No

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

Remarks:

VEGETATION – Use scientific names of plants

Sampling Point: WPA-KAS-031-PEM

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Typha latifolia	85	Y	OBL
	85	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across all Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:	
OBL species	85	x 1 =	85	
FACW species	0	x 2 =	0	
FAC species	0	x 3 =	0	
FACU species	0	x 4 =	0	
UPL species	0	x 5 =	0	
Column Totals:	85 (A)		85 (B)	

Prevalence Index = B/A= 1.00

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- X Dominance Test > 50%
- X Prevalence Index ≤ 3.0
- ___ Problematic Hydrophytic Vegetation (Explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

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

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

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

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 12	10YR 3 / 1	90	2.5YR 4/8	10	C	PL	LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B))
- ☐ Loamy Mucky Mineral (F1) (LRR K,L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: LEPC City/County: Erie County Sampling Date: 11/5/2014

Applicant/Owner: ITC Holdings State: PA Sampling Point: WPA-KAS-031-PFO

Investigator(s): KAS KO Section, Township, Range S T R

Landform (hillslope, terrace, etc.): Flat Local Relief (concave, convex, none): None Slope(%) 0

Subregion (LRR or MLRA): LRR R Lat: 41.95351 Long: -80.370725 Datum: NAD83

Soil Map Unit Name: Mh NWI Classification: PFO

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

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

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

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

Hydrophytic Vegetation Present?	Yes	X	No		
Hydric Soil Present?	Yes	X	No	**Is the Sampled Area within a Wetland?**	**Yes X No**
Wetland Hydrology Present?	Yes	X	No	If yes, optional Wetland Site ID	WPA-KAS-031-PFO

Remarks:
PFO portion of WPA-KAS-031. Adjacent to unknown stream.

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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☑ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☑ Saturation Visible on Aerial Imag.(C9)
- ☐ Stunted or Stressed Plants (D1)
- ☑ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ Microtopographic Relief (D4)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes		No	X	Depth (inches):	
Water Table Present?	Yes	X	No		Depth (inches):	0
Saturation Present? (includes capillary fringe)	Yes	X	No		Depth (inches):	0

Wetland Hydrology Present? Yes X No

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

Remarks:

VEGETATION – Use scientific names of plants

Sampling Point: WPA-KAS-031-PFO

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 Ft)			
Acer rubrum	75	Y	FAC
Prunus serotina	15	N	FACU
Populus deltoides	10	N	FAC
	100	=Total Cover	
Shrub Stratum (Plot size: 30 Ft)			
Cornus alba	10	Y	FACW
	10	=Total Cover	
Herb Stratum (Plot size: 6 Ft)			
Phalaris arundinacea	25	Y	FACW
Lemna minor	20	Y	OBL
Epilobium ciliatum	10	N	FACW
Juncus effusus	10	N	OBL
Persicaria sagittata	10	N	OBL
Euthamia graminifolia	5	N	FAC
Solidago canadensis	5	N	FACU
	85	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	45	x 2 =	90
FAC species	90	x 3 =	270
FACU species	20	x 4 =	80
UPL species	0	x 5 =	0
Column Totals:	195 (A)		480 (B)

Prevalence Index = B/A= 2.46

Hydrophytic Vegetation Indicators:

- ___ Rapid Test for Hydrophytic Vegetation
- X Dominance Test > 50%
- X Prevalence Index ≤ 3.0
- ___ Problematic Hydrophytic Vegetation (Explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

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

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

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

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type [1]	Loc [2]	Texture	Remarks
0 to 12	10YR 3 / 1	90	2.5YR 4/8	10	C	PL	LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B))
- ☐ Loamy Mucky Mineral (F1) (LRR K,L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

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

☐ **Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: LEPC City/County: Erie County Sampling Date: 11/5/2014

Applicant/Owner: ITC Holdings State: PA Sampling Point: UPL-031

Investigator(s): KAS KO Section, Township, Range S T R

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Convex Slope(%) 0

Subregion (LRR or MLRA): LRR R Lat: 41.953928 Long: -80.371861 Datum: NAD83

Soil Map Unit Name: R NWI Classification:

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

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

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

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

Hydrophytic Vegetation Present?	Yes	No X	**Is the Sampled Area within a Wetland?**	**Yes**	**No X**
Hydric Soil Present?	Yes	No X			
Wetland Hydrology Present?	Yes	No X	If yes, optional Wetland Site ID		

Remarks:

No hydrology indicators present. Hydrophytic vegetation not dominant. No hydric soil indicators.

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)
- ☐ Marl Deposits (B15)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

VEGETATION – Use scientific names of plants

Sampling Point: UPL-031

	Absolute % Cover	Dominant Species	Indicator Status
Tree Stratum			
Shrub Stratum			
Herb Stratum (Plot size: 6 Ft)			
Plantago lanceolata	20	Y	FACU
Plantago major	20	Y	FACU
Trifolium pratense	15	N	FACU
UID	15	N	
Aster spp.	10	N	NI
	80	=Total Cover	
Vine Stratum			

Dominance Test Worksheet:

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

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

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

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	55	x 4 =	220
UPL species	0	x 5 =	0
Column Totals:	55 (A)		220 (B)

Prevalence Index = B/A= 4.00

Hydrophytic Vegetation Indicators:

___ Rapid Test for Hydrophytic Vegetation

___ Dominance Test > 50%

___ Prevalence Index ≤ 3.0

___ Problematic Hydrophytic Vegetation (Explain)

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

Definitions of Vegetation Strata:

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

Sapling/shrub – Woody plants less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

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

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

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

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

Hydrophytic vegetation not dominant.

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

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Martix, 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)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Mucky Mineral (S1)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) (LRR R, MLRA 149B)
- ☐ Polyvalue Below Surface (S8) (LRR R, MLRA 149B)
- ☐ Thin Dark Surface (S9) (LRR R, MLRA 149B))
- ☐ Loamy Mucky Mineral (F1) (LRR K,L)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)

Indicators for Problematic Hydric Soils: [3]

- ☐ 2 cm Muck (A10) (LRR K, L, MLRA 149B)
- ☐ Coast Prairie Redox (A16) (LRR K, L, R)
- ☐ 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- ☐ Dark Surface (S7) (LRR K, L)
- ☐ Polyvalue Below Surface (S8) (LRR K, L)
- ☐ Thin Dark Surface (S9) (LRR K, L)
- ☐ Iron-Manganese Masses (F12) (LRR K, L, R)
- ☐ Piedmont Floodplain Soils (F19) (LRR P, S, T)
- ☐ Mesic Spodic (TA6) (MLRA 144A, 145, 149B)
- ☐ Red Parent Material (F21)
- ☐ Very Shallow Dark Surface (TF12) (LRR T, U)
- ☐ Other (Explain in Remarks)

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

☑ **Restrictive Layer (if observed):**

Type: Rock

Depth (inches): 12

Hydric Soil Present? **Yes** ☐ **No** ☒ **X**

Remarks:

No hydric soil indicators.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Sampling Date: 11/5/14
Applicant/Owner: LEC State: PA Sampling Point: UPA-VAS-032
Investigator(s): VAS, VA Section, Township, Range: none
Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR or MLRA): R Lat: 41.957414 Long: -80.372884 Datum: NAD83
Soil Map Unit Name: RhA NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes ✓ No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes ✓	No	**Is the Sampled Area within a Wetland?** Yes ✓ No
Hydric Soil Present?	Yes ✓	No	
Wetland Hydrology Present?	Yes ✓	No	If yes, optional Wetland Site ID: UPA-VAS-032

Remarks: (Explain alternative procedures here or in a separate report.)
UPA-VAS-032
PEM
Abutting SPA-VAS-018

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
None

Remarks:
none

UPA-WAS032

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Sapling/Shrub Stratum (Plot size: 5')			
1. Rhamnus cathartica	20	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Agrostis gigantea	45	Y	FACW
2. Solidago canadensis	20	Y	FACU
3. Ambrosia artemisiifolia	10	N	FACU
4. Juncus effusus	10	N	OBL
5. Epilobium ciliatum	10	N	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No

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

SOIL

Sampling Point: WDA-VAS-052

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/1	90	10YR 6/8	10	C	M	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: EC City/County: Erie Sampling Date: 11/5/14

Applicant/Owner: EC State: PA Sampling Point: UPL-WAS-032

Investigator(s): WAS, KO Section, Township, Range: None in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41.957465 Long: -80.378927 Datum: NAD83

Soil Map Unit Name: RhA NWI classification: UPL

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

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

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

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

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

UPL-WAS-032

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

none

Remarks:

none

VEGETATION – Use scientific names of plants.

Sampling Point: UPL-WAS-037

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Aster	10	N	–
2. Plantago lanceolata	5	N	FACU
3. Glycine max	50	Y	UPL
4. Trifolium pratense	10	N	FACU
5. Setaria viridis	10	N	UPL
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	85 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No ✓

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

None

SOIL

Sampling Point: UPL-WAS032

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

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L, M**)
- ___ Polyvalue Below Surface (S8) (**LRR K,** L)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: gravel

Depth (inches): 10

Hydric Soil Present? Yes ____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Sampling Date: 11/5/14

Applicant/Owner: LEC State: PA Sampling Point: UPA-VA5034

Investigator(s): VAS, KO Section, Township, Range: none

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41.978265 Long: -80.38808 Datum: NAD83

Soil Map Unit Name: Ax NWI classification: PEM

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: UPA-VA5034

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

PEM

extends beyond border Abuts SPA-VA5020

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- X 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)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes X No ____ Depth (inches): surface

Water Table Present? Yes X No ____ Depth (inches): surface

Saturation Present? (includes capillary fringe) Yes X No ____ Depth (inches): surface

Wetland Hydrology Present? Yes X No ____

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

none

Remarks:

none

WA-WS-034

Sampling Point: _____

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
Sapling/Shrub Stratum (Plot size: 15')			
1. Rosa multiflora	10	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
Herb Stratum (Plot size: 5')			
1. Persicaria sagittatum	40	Y	OBL
2. Impatiens capensis	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50 = Total Cover		
Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No _____

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

SOIL

Sampling Point: WPA-VA5-034

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

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- V Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Sampling Date: 11/5/14

Applicant/Owner: LEC State: PA Sampling Point: UPL-034

Investigator(s): KAS, KD Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): slope Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR or MLRA): L Lat: 41.978233 Long: -80.38808 Datum: NAD83

Soil Map Unit Name: Ax NWI classification: UPL

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

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

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

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

Hydrophytic Vegetation Present?	Yes _____	No X	**Is the Sampled Area within a Wetland?** Yes _____ No Y
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No Y	If yes, optional Wetland Site ID: _____

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

UPL- KAS-034

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No N

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

None

Remarks:

None

VEGETATION – Use scientific names of plants.

Sampling Point: UP-US024

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Liriodendron tulipifera	10	N	FACU
2. Quercus rubra	15	Y	FACU
3. Fagus grandifolia	5	N	FACU
4. Acer sp.	10	N	FACU
5. Prunus serotina	30	Y	FACU
6.			
7.			
	70	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Crataegus sp.	15	Y	–
2. Rubus occidentalis	15	Y	UPL
3. Rosa multiflora	10	Y	FACU
4.			
5.			
6.			
7.			
	40	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Alliaria petiolata	10	Y	FACU
2. Daucus carota	15	Y	UPL
3. Vinca minor	25	Y	UPL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	50	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 8 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ___ No X

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

SOIL

Sampling Point: UPL-KF5-034

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR 3/4	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Sampling Date: 11/5/14

Applicant/Owner: LEC State: PA Sampling Point: SPA-KAS-035

Investigator(s): KAS, KAD Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): small valley Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): K Lat: 41.983615 Long: -80.387792 Datum: NAD83

Soil Map Unit Name: HxA, PtA, TuA NWI classification: PEM

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: wPA-KAS-035

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

wPA-KAS-035

PEM

Abuts SPA-KAS-021

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- Y High Water Table (A2)
- X 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)
- X Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- X 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes Y No ____

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

none

Remarks:

none

VEGETATION – Use scientific names of plants.

Sampling Point: UPH-VAS-035

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Phragmites australis	70	Y	FACW
2. Glyceria striata	30	Y	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ___

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

SOIL

Sampling Point: WP-VA035

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	Gley1 2.5/10Y	100					Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- X Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): ___

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

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie CO Sampling Date: 11/5/14

Applicant/Owner: LEC State: PA Sampling Point: UPL-035

Investigator(s): VAS KO Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): concave Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41.982477 Long: -80.38932 Datum: NAD83

Soil Map Unit Name: AV, PtA, TuA NWI classification: UPL-VAS-035

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

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

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

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

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

UPL-VAS-035

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

None

Remarks:

None

UPL-VAK-035

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Zea mays	100	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No Y

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

UP-WAK 035

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-5	10YR 4/4	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 5"

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

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Sampling Date: 11/6/14

Applicant/Owner: LEC / ITC State: PA Sampling Point: WPA-VAS036

Investigator(s): VAS, VAD Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none in PA Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41.916436 Long: -80.38818 Datum: NAD83

Soil Map Unit Name: PtB NWI classification: PFO

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

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

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

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

Hydrophytic Vegetation Present?	Yes Y	No ____	**Is the Sampled Area within a Wetland?** Yes Y No ____
Hydric Soil Present?	Yes Y	No ____	If yes, optional Wetland Site ID: WPA-VAS036
Wetland Hydrology Present?	Yes Y	No ____	

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

WPA-VAS036

PFO

Abuts SPA-VAS-025

HYDROLOGY

Wetland Hydrology Indicators:

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

- Y Surface Water (A1)
- Y High Water Table (A2)
- Y Saturation (A3)
- Y 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)
- Y Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes Y	No ____	Depth (inches): surface
Water Table Present?	Yes Y	No ____	Depth (inches): surface
Saturation Present? (includes capillary fringe)	Yes Y	No ____	Depth (inches): surface

Wetland Hydrology Present? Yes Y No ____

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

none

Remarks:

none

VEGETATION – Use scientific names of plants.

Sampling Point: UPA-VAS-026

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	70	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	70 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. Ligustrum japonicum	20	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		

Herb Stratum (Plot size: 5')			
1. Glyceria striata	10	Y	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	10 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes Y No ___

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

WPA-WAS-036
Sampling Point: _____

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/1	100					Plant matter, l	
3-10	10YR 3/1	100					sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- X 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: none

Depth (inches): _____

Hydric Soil Present? Yes ✓ No _____

Remarks:

decomposed plant matter

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LSC City/County: Gene Sampling Date: 11/6/14

Applicant/Owner: LSC State: PA Sampling Point: UPL-36

Investigator(s): VAS, KO Section, Township, Range: none (NA)

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41.964792 Long: -80.388071 Datum: NAD83

Soil Map Unit Name: PhB NWI classification: UPL

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

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

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

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

Hydrophytic Vegetation Present?	Yes ____ No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____ No X	
Wetland Hydrology Present?	Yes ____ No X	If yes, optional Wetland Site ID: ____

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

UPL-VAS-036

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

None

Remarks:

None

UPL-VA-036

Sampling Point: _____

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga canadensis	50	Y	FACU
2. Liriodendron tulipifera	12	N	FACU
3. Fagus grandifolia	15	N	FACU
4. Quercus rubra	5	N	FACU
5. Pinus sylvestris	5	N	FACU
6.			
7.			
	85	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. Ligustrum japonicum	10	Y	UPL
2. Lindera benzoin	10	Y	FAC
3. Rosa multiflora	15	Y	FACU
4.			
5.			
6.			
7.			
	35	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Dryopteris cristata	15	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	15	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species	x 3 =	
FACU species	x 4 =	
UPL species	x 5 =	
Column Totals: (A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- ___ 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No X

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

SOIL

Sampling Point: VP2-VAS-036

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

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Sampling Date: 11/6/14

Applicant/Owner: LEA / ITC Holding State: PA Sampling Point: WPA-037

Investigator(s): VAS, ICO Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): L Lat: 41.969176 Long: -80.382424 Datum: NAD83

Soil Map Unit Name: HkB NWI classification: PUB

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	If yes, optional Wetland Site ID: WPA-VAS-037
Wetland Hydrology Present?	Yes X	No ____	

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

WPA-VAS-037 PUB Isolated

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X 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)
- ___ Marl Deposits (B15)
- X 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes X No ____

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

none

Remarks:

none

UPA-BA-037

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Herb Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No X

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

no vegetation observed due to standing water

NWA-WAS037

SOIL

Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	Leaf litter						mucky	
4-12	10YR3/1	100					sandy loam	

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

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- X 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: none

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

none

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Sampling Date: 11/6/14

Applicant/Owner: ITC Holdings State: PA Sampling Point: UPL-037

Investigator(s): KAS, KO Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): L Lat: 41.960943 Long: -80.388519 Datum: NAD83

Soil Map Unit Name: HkB NWI classification: UPL

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

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

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

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

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

UPL-KAS-037
UPL-KAS-038

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

none

Remarks:

none

VEGETATION – Use scientific names of plants.

Sampling Point: UPL-VAS-087

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus rubrum	10	Y	FACU
2. Liriodendron tulipentera	10	Y	FACU
3. Acer saccharinum	10	Y	FACW
4.			
5.			
6.			
7.			
	30	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Zea mays	100	Y	UPL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 25 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes ____ No X

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

SOIL

Sampling Point: UL-VAS-037

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-12	10YR 4/6	100					loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Sampling Date: 11/16/21

Applicant/Owner: LTC Holding State: PA Sampling Point: WPA038

Investigator(s): VAS NO. J Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): L Lat: 41.970097 Long: -80.388416 Datum: NAD83

Soil Map Unit Name: HKB NWI classification: PSS

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	If yes, optional Wetland Site ID: WPA-VAS-038

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

PSS
WPA-VAS038
Isolated

located outside survey area but next to PEM wetland within AR ROW
road depression

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0 surface

Wetland Hydrology Present? Yes X No ____

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

none

Remarks:

none

PSS' WPA-LHS-038

VEGETATION – Use scientific names of plants. Sampling Point: ______

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Betula nigra	10	Y	FACW
2. Salix nigra	10	Y	OBL
3.			
4.			
5.			
6.			
7.			
	20 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')	Absolute % Cover	Dominant Species?	Indicator Status
1. Cornus amomum	50	Y	FACW
2. Rubus allegheniensis	20	Y	FACU
3.			
4.			
5.			
6.			
7.			
	70 = Total Cover		

Herb Stratum (Plot size: 5')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0 = Total Cover		

Woody Vine Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
	— = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	______	x 1 = ______
FACW species	______	x 2 = ______
FAC species	______	x 3 = ______
FACU species	______	x 4 = ______
UPL species	______	x 5 = ______
Column Totals:	______ (A)	______ (B)

Prevalence Index = B/A = ______

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No ______

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

SOIL

WPA-1645-038 PSS Sampling Point: _____

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 4/2	70	7.5YR 4/6	30	D	PL	loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: None

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: LEC City/County: Erie Co Sampling Date: 11/6/14
Applicant/Owner: ITC Holdings LLC State: PA Sampling Point: WPA-38
Investigator(s): VAS, KD Section, Township, Range: none in PA
Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0
Subregion (LRR or MLRA): L Lat: 41.970097 Long: -80.38846 Datum: NAD83
Soil Map Unit Name: HkB NWI classification: PEM
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	If yes, optional Wetland Site ID: WPA-VAS-038
Wetland Hydrology Present?	Yes X	No ____	

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

WPA-VAS-038
PEM
Isolated

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes X No ____

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

none

Remarks:

none

VEGETATION – Use scientific names of plants.

PEM

WAFVAS-058

Sampling Point: _____

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0	= Total Cover	

Herb Stratum (Plot size: 5')			
1. Alisma subcordatum	10	N	OBL
2. Solidago canadensis	15	N	FACU
3. Erigeron annuus	10	N	FACU
4. Persicaria sagittata	35	Y	OBL
5. Phalaris arundinacea	35	Y	FACW
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95	= Total Cover	

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0	= Total Cover	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

__ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

__ 3 - Prevalence Index is ≤3.0[1]

__ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

__ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No _____

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

SOIL

UPA-WTS-038 Sampling Point: PEM

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 5/2	60	10YR 4/6	40			sandy loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: none

Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Erie Connector City/County: Erie Co Sampling Date: 8/27/14

Applicant/Owner: ITC Holdings State: PA Sampling Point: WPA-VAS-039

Investigator(s): VAS Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): valley Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): MLRA R Lat: 41.97909 Long: -80.39574 Datum: NAD83

Soil Map Unit Name: Wa NWI classification: PFO

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

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

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

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

Hydrophytic Vegetation Present?	Yes X No ____	Is the Sampled Area within a Wetland?	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____	If yes, optional Wetland Site ID:	WPA-VAS039

Remarks: (Explain alternative procedures here or in a separate report.)
The wetland is located in valley next to Ridge Road the road is elevated 35 ft of fill alters natural hydro & soils

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X 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)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): surface
Water Table Present?	Yes X	No ____	Depth (inches): 12"
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 5"

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
none

Remarks:
none

VEGETATION – Use scientific names of plants.

UPA-WAS 039 Sampling Point: _____

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer rubrum	40	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. Cornus amomum	30	Y	FACW
2. Ligustrum japonicum	5	N	UPL
3.			
4.			
5.			
6.			
7.			
	35 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Juncus effusus	15	N	OBL
2. Solidago rugosa	25	Y	FAC
3. Lysimachia nummularia	35	Y	FACW
4. Persicaria sagittatum	10	N	OBL
5. Scirpus cyperinus	10	N	OBL
6. Dulichium arundinaceum	5	N	OBL
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes X No _____

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

SOIL

Sampling Point: WDA-VAS-039

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/1	85	2.5Y 4/8	15	C	PL	sandy loam	
8-16	10YR 4/1	70	2.5Y 4/8	20	D	PL	sandy loam	
			5YR 5/8	10	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR R, MLRA 149B)**
- ___ Polyvalue Below Surface (S8) **(LRR R, MLRA 149B)**
- ___ Thin Dark Surface (S9) **(LRR R, MLRA 149B)**
- ___ Loamy Mucky Mineral (F1) **(LRR K, L)**
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(LRR K, L, MLRA 149B)**
- ___ Coast Prairie Redox (A16) **(LRR K, L, R)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR K, L, R)**
- ___ Dark Surface (S7) **(LRR K, L)**
- ___ Polyvalue Below Surface (S8) **(LRR K, L)**
- ___ Thin Dark Surface (S9) **(LRR K, L)**
- ___ Iron-Manganese Masses (F12) **(LRR K, L, R)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149B)**
- ___ Mesic Spodic (TA6) **(MLRA 144A, 145, 149B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Lake Erie Connector City/County: Erie Co Sampling Date: 12/22/14

Applicant/Owner: ITC Holding State: PA Sampling Point: PL

Investigator(s): VAS Section, Township, Range: none in PA

Landform (hillslope, terrace, etc.): none Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR or MLRA): R Lat: 41.972781 Long: -80.316546 Datum: WGS83

Soil Map Unit Name: TvF NWI classification: UPL

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

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

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

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

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	If yes, optional Wetland Site ID: ____

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

UPL-VAS-039

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)
- ___ Marl Deposits (B15)
- ___ 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)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes ____ No X

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

none

Remarks:

none

UPL-VA5-0391

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Sapling/Shrub Stratum (Plot size: 15')			
1. None			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		

Herb Stratum (Plot size: 5')			
1. Solidago canadensis	30	Y	FACU
2. Lolium multiflorum	30	Y	UPL
3. Plantago lanceolata	20	Y	FACU
4. Solidago nigra	10	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90 = Total Cover		

Woody Vine Stratum (Plot size: 30')			
1. None			
2.			
3.			
4.			
	0 = Total Cover		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes _____ No X

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

SOIL

Sampling Point: WPL4US039

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

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

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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)
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**)
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**)
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**)
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks: